

**RESEARCH AND DEVELOPMENT OF EDUCATION WEBSITES AND IT'S
USABILITY**

BY

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This Report Presented in Partial Fulfillment of the Requirements for the
Degree of Bachelor of Science in Multimedia and Creative Technology

Supervised By

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**DAFFODIL INTERNATIONAL UNIVERSITY
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APPROVAL

This Project titled “**Research and development of education website and its usability**”, submitted by **Muhammad Sohan Mollah** to the Department of Multimedia and Creative Technology, Daffodil International University, has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of B.Sc. in Multimedia and Creative Technology and approved as to its style and contents. The presentation has been held on 27 February 2023.

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DECLARATION

I hereby declare that, this project has been done by me under the supervision of **Mr. Md Salah Uddin, Assistant Professor & Head (In-Charge) of Multimedia and Creative Technology Department, Daffodil International University**. I also declare that neither this project nor any part of this project has been submitted elsewhere for award of any degree or diploma.

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I would like to thank my entire course mate in Daffodil International University, who took part in this discuss while completing the course work.

Finally, I must acknowledge with due respect the constant support and patients of my parents.

ABSTRACT

We are doing this project to present an educational institute as an online base. Because now we live in an online presence world, and online presence is very important. So we have built up our project with that important. Online portfolio showing is required for various remote jobs and permanent jobs. Our project has a portfolio creation part. It allows students to share portfolios from their department and teacher references. Apart from this, student teacher communication, introduction of the department to the world etc. will be on our project.

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CHAPTER 1

CASE STUDY

1.1 Case Study Overview

This project (UI/UX Design Concept of Education Websites and its Usability) can be used as a specific department's website. Because, this website has functionality to create accounts for both teachers and students. And student and teachers can edit their profile to their own content and descriptions. There will be a super admin who will manage everything and approve teacher accounts. And, when the student registration for creating an account then the teachers can approve their request to create their accounts. And super admin will approve teachers account. Also students have functionality to upload their portfolio works what other student can view. Also they can upload their works on the website and submit this link as their assignment.

1.2 Problem Identification

We are often asked by many people which department you are studying in, what is taught in this department, what is its future, then there are many people who cannot be understood with a few words. Then it becomes a problem. Then it seems that it would be better if the answers to all the questions could be given together.

Again, if you want to know about the department, you have to come to the department, see and then know. It is a joyous thing to come and see, knowingly being admitted. But at times it is a waste of time and at times tiring.

Also portfolio is a very important subject for students in our department. In that case we have to take help from other websites. Many times teachers have to provide references in our CVs. In that case, after dropping that CV in an institute, teachers from

that institute call or knock to know about the student. Teachers are often so busy that they can't pick up the phone and can't or don't have time to talk about a student. In order to know how well a student can do in a subject, they have to follow them personally, in that case, not all students can be guided equally. In that case, it is not clear who is doing well, who is doing medium, who is not doing well. So we are working on this project as a collective solution to these problems.

In addition, when each unused item is outlined there are different resistors. We also faced various difficulties and challenges. During our initiative (Domain Information) development and testing sessions, we ran into various obstacles and problems to make the Internet application secure and simple.

1.3 Motivation

Internet is nothing without web applications or web pages. To interact with internet we must have to go with some process. And then comes World Wide Web where all the websites is stored and running. So when we want to switch from analog database to digital database then we have to create web pages and upload that into internet so that people can use this.

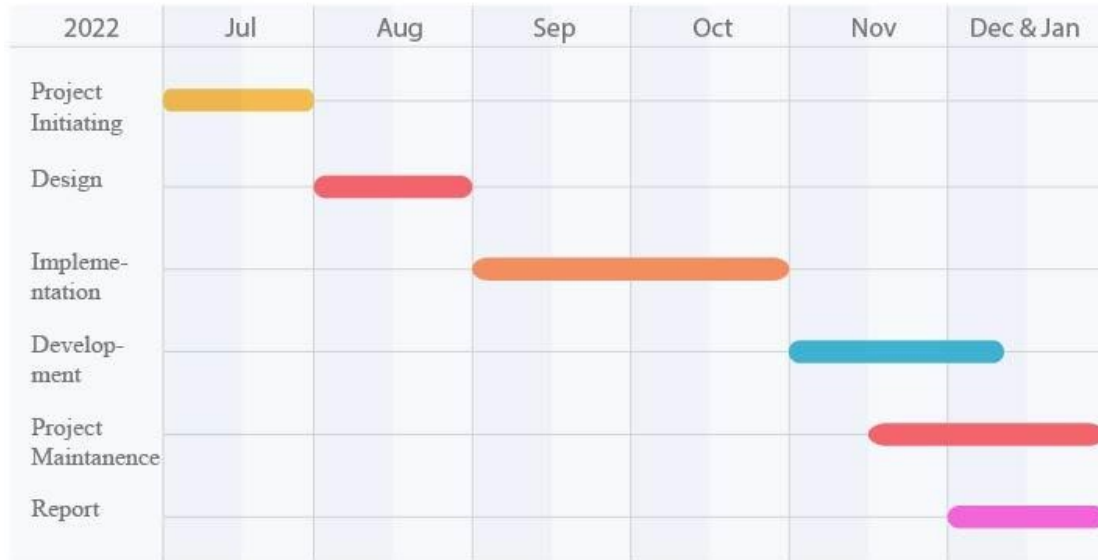
- ✓ Reduce time and cost.
- ✓ User friendly to manage the students and their works.
- ✓ Important announcements goes easy to publish.
- ✓ It's online every time. Can be login anytime and manage things easily.

1.4 Objectives

- Concepts about the department.
- Introduction to the Department.
- Portfolio creation.
- Student Teacher Bonding.
- Department Information Exchange.

1.5 Project Timeline (Gantt chart):

Table-1.1: Gantt chart of “UI/UX Design Concept of Education Websites and its Usability” working process timeline.



1.6 Related Work and Research

Our project is a learning management system. There are many types of learning management systems. For example, BLC is a massive learning management system for Daffodil International University. Google Classroom is a very common learning management system. Blended Learning Center (BLC) is Daffodil International University's digital teaching and learning hub. The platform aims to effectively connect teachers and students so that teachers can track the progress of individual students and facilitate their learning better. BLC has played a huge role as our online learning center during the Corona Pandemic. Our regular classes, assignments, quizzes, exams, everything is through BLC. Blended Learning Center (BLC) acts as a virtual classroom after all. What was practically not possible was done online. Similarly in google classroom we can see our class rooms. We can do signed assignments in the classroom and get lectures. But we cannot make our own portfolio on these websites. We need another portfolio maker website for portfolio creation. We want to create a project combining all these things that will have our courses

like BLC and google classroom and what work is coming out of the courses. Good works can be used as their own portfolio. And that portfolio will be created on the same website. So I am going to recharge all these things and do the work related to the project. I think our project will be the beginning of a new genre of work.

1.7 Competitive Analysis

Nowadays the rate of competition is very high in any work we have to compete and stay ahead. And that competition has to be through good deeds. The competitive discussion regarding our project is as follows,

We are build-up a website about our department. Our department is Multimedia and Creative Technology. In creating a website with the Multimedia Creative Technology Department, first we have highlighted the multimedia identity. In that case, what is actually there in this department, what is taught, I have tried to present all the information about the department. But the question may be that a banner or a poster is often enough for such information. What is the role of the website in that case? So the answer is, we can know all the information about the department through online website anytime from anywhere. There is no need to look for banners or posters. And in the case of creating banners, posters, they have to be printed out to promote them, which increases the cost. Such websites are very useful in that case. But there can be many such websites. In that case, why should we be different? As an answer to that question, we would like to say that there are many types of learning systems in learning management systems. For example, BLC is a learning management system of daffodil international university, Google classroom is a learning management system. Our website does not have many of the features that BLC has. Again, all the features that are available on our website are not available in BLC. In this case, it can be said that each website is good for its own separate work and users use it that way. According to the convenience of the users, if the combination of several websites is made in one medium, the competition can go a long way. Our website has departmental information as well as teachers' portfolios, students' portfolios, courses, blogs, events, all together. We do not need the help of any other website in creating portfolio. We can create

it through our own website. In the case of CV reference, no teacher has to take responsibility separately. If you share a portfolio link on a website, the student can share his portfolio along with his department, teacher, everything through a link. So we expect our website to be ahead in this kind of competition.

If we compare our proposed website with other learning management system websites then there are definitely some differences and it is a different learning management website. Our website is mainly about building department identity and students' portfolios within it. We only look at departmental identity websites and use different websites to create portfolios. Our website is basically a combination of both.

1.8 Hypothesis of my solution

Following are the hypotheses to solve the problems we identified in the build-up to this project. To save time and cost, this website will serve as a departmental identity. A person or a student who takes admission in the department has to visit the department physically to know about the department, about the work of the students of the department, about the course, etc. He used to waste a lot of time going to the department again, spending money, renting a car, eating food, he would get tired of doing all these things. But he doesn't have to do all these things, he can learn about the department sitting at home. We can inform people about our department through a website. A website will answer various questions about the department.

But what our project or website will do on a larger scale is portfolio creation. A student's portfolio is a very important thing for job sector. If the teachers have a check out in making that portfolio then it must be published as a good portfolio. We use other websites for portfolio creation. We will have the facility of making our own portfolio within the department website in this project. This will improve the quality of work. In making our own portfolios, any work we add to our portfolios as per our liking, there may be many errors which we do not catch. But if these are regularly checked by the teacher and given the points to correct them if they are wrong, then the works are not too faulty and the portfolio consists of good works.

In CVs we use references of teachers to verify the institutes where we drop the CV and they knock the teachers. In this case, many times teachers have to spend time apart from their busy schedule. It can become painful at times. We have provided mentor assign option in student login on our website. So that the student can create a portfolio by verifying his work through Mentor. When student shares the portfolio, the reference of the teacher is working with will automatically appear. By this time a student is getting a believable support from the whole department.

CHAPTER 2

LITERATURE REVIEW

Student management system is a departmental Web Application. This application is basically for all users, because it's online platform website. Basically it's a (LMS) learning management system.

2.1 Learning Management System (LMS)

A learning management system (LMS) is a software application or web-based technology used to plan, implement and evaluate a specific learning process. It is used for e-learning practices and, in its most common form, consists of two components: a server that performs the base functionality and a user interface that is managed by instructors, students, and administrators.

Typically, a learning management system provides an instructor with the means to create and deliver content, monitor student participation, and evaluate student performance. A learning management system can provide students with the ability to use interactive features such as threaded discussions, video conferencing, and discussion forums.

LMSs are often used by businesses of all sizes, national government agencies, local governments, traditional educational institutions, and online/e-learning-based institutions. Systems can improve traditional educational methods, while saving organizations time and money. An effective system will allow instructors and administrators to efficiently manage elements such as user registration, content, calendars, user access, communications, certifications, and notifications.

2.2 History and Definition of LMS

Learning management systems (LMS) provide teachers and students with an online classroom that powers the learning process. In online classroom environments, learning management systems (LMS) empower teachers and students in the learning process. A

standard LMS supports an inclusive learning environment for academic advancement with a mediated structure that promotes online peer-grouping, professional training, discussion, and communication among other LMS users. Nasser, Cherif, and Romanowski (2011) stated that LMS use provides online learners with consistent information regarding their performance. Using an LMS allows online learners to be independent. Learner engagement is sustained as online users use an LMS to monitor their progress.

Watson and Watson (2012) describe the adoption of computers throughout history as computer-based instruction (CBI), computer-assisted instruction (CAI), and computer-assisted learning (CAL), as general terms. These terms apply to computer application programs, teaching and design preparation. Terms refer to monitoring, approval, and distribution of materials.

An LMS has multiple online activities and acts as a framework to capture numerous levels of progressive learning. An LMS acts as a platform to distribute and monitor educational content. LMS functions include disseminating information specifically designed to capture student progress in meeting expectations. An LMS platform creates an environment for engagement and student achievement, allowing students to register for classes, track their grades, and check for updates and course announcements. Watson and Watson (2012) recommend that as school districts integrate the use of an LMS, they should have a functional requirement to use the LMS. They discuss LMS administrative management techniques, including enabling profile features, guidelines for following the curriculum, guidelines for managing assignments, discussion boards, writing resources, and updates from the instructor. LMS users gain access to materials and information disseminated by instructors in synchronous or asynchronous settings. An LMS provides a productive learning environment for users to integrate multiple components of the system application. In an educational setting, computer users have access to operations with unfamiliar terms, and many computer users in education may have access to applications with unfamiliar terms and acronyms that are confusing to understand. Thus, users may not understand which interpretations are appropriate to use; differentiating an LMS from similar technologies is fundamental.

2.3 Benefits of a learning management system

A learning management system provides a variety of benefits to users, regardless of the type of organization using it. For example, an LMS can save an organization time and money. Instead of students taking time out of their day to travel and sit through lessons or training, LMSes allow users to complete coursework at a time that works best for them. Additionally, costs can be reduced by eliminating the need to hire instructors, training days, training materials, travel expenses and locations.

Other benefits of learning management systems include:

- ✓ Ability to monitor user progress and performance.
- ✓ Enhanced eLearning accessibility without geographical limitations.
- ✓ Ability to personalize online training and learning experience.
- ✓ Enhanced eLearning accessibility without geographical limitations.
- ✓ Ability to update eLearning modules and activities easily and efficiently.
- ✓ Ability to easily deliver online training and learning materials effectively and ensure use of automation.

Finally, centralized learning is another major benefit offered by LMSes. It allows an organization to securely organize and store all big data in one location this allows instructors and administrators to more easily update and maintain learning materials. It also helps create effective training that is consistent across organizations. Additionally, most LMSs have advanced encryption features that help ensure data and content remain secure.

2.4 The importance of learning management system

In step with the hyper-connected and ever-evolving world, educational institutions have been able to stay on top of their rapidly changing needs by making Learning Management System (LMS) adoption common. LMS offers a streamlined and integrated e-learning platform for the convenience of students, instructors and administrators. For example,

1. Convenient and Efficient

One of the best features of a learning management system is that it becomes a centralized platform that contains all the course material required for a particular course. Having a single, well-managed database streamlines the learning experience for all students. Students can upload and assess assignments from one platform. This makes it convenient for instructors to be able to distribute resources to all students by uploading them to the LMS. Cloud-based LMS especially add this advantage since the data is accessible from anywhere.

2. Allows Greater Flexibility

One of the biggest ways the traditional classroom experience is changing is through the introduction of blended and hybrid learning. Blended learning allows students to take lectures in person and supplement their learning with study materials found in the LMS. Learning management system content can include readings, notes, recorded lectures, lesson plans, and more.

Hybrid learning, on the other hand, allows greater flexibility by allowing students to take classes in person or online and supplement them with course material in an LMS. Online classes can be taken directly from within the LMS. Based on their choice, students can join the classes of their choice. This flexibility makes it easier for students to maintain attendance and prevents any disruption to the course plan if the campus is closed for any reason.

3. Personalized Learning Pathways

An important consequence of the increased interest in e-learning platforms is the emphasis on personalized learning. Learning is not the same for everyone and different students learn in different ways. Personalized learning allows students to go through courses at their own pace.

4. Easy Assessment and Grading Tools

A key benefit of having a learning management system in education is the ease with which instructors can assess the performance of their students. Timed/untimed tests and quizzes can be administered from the LMS and their grading can be automated and simplified. Students can choose to take this assessment from anywhere.

5. Learning on the Go

Running your course in a learning management system means learning from anywhere, even on the go. Some of the best learning management systems come with mobile applications to make content more accessible.

Also a better understanding of the website is known through the eLearning system. For example, the information that had to go to the university campus can be known from anywhere using the internet through the website.



Figure 2.1 Learning on the go

6. Social Communication

Social communication works very well in e-learning systems. In the e-learning system, social interaction between teachers and students takes place in various ways. If a notice is issued, students can receive it from anywhere as a notification. Learn about different events. Learn about notifications, events, programs, classes, courses.

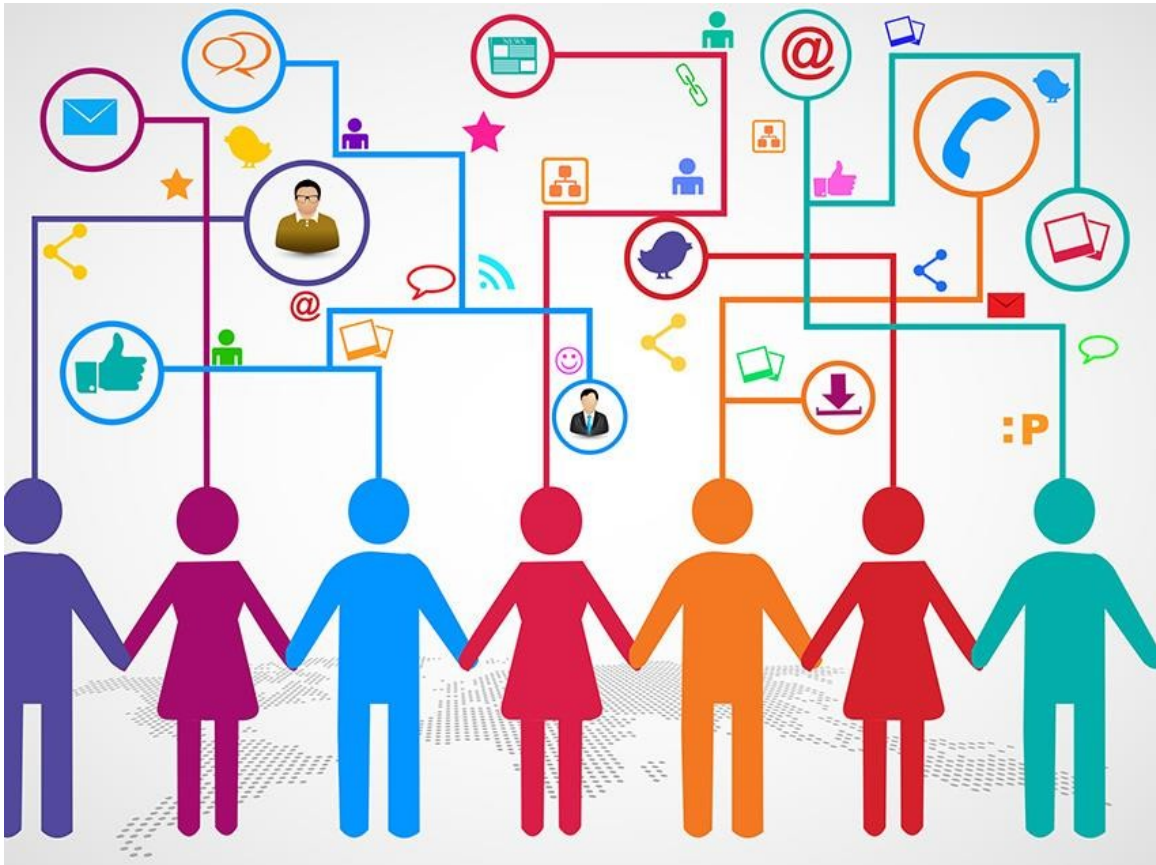


Figure 2.2 Web Communication

CHAPTER 3

USER RESEARCH

3.1 Target Users

This website is made for student management. Since it is based on a specific department, the users are the people belonging to the department. For example, department teachers and students. Besides, any person can use this website to know about the department. In the case of employment, various company can use it to know about the student's work. So the main target people are students, teachers and educational persons who are active in using the website.

3.2 User Persona

A user persona is a fact-based visual representation of a set of users that helps design teams envision, understand, and create relevant connections with target users. In the digital age, audiences are demanding user-oriented products. To respond to such needs, as a UX designer, one needs to know who the users are and what they like to give them a proper service. Even if our website addresses users from different backgrounds, there must be certain common points. User personas, also known as UX personas, are characters that will represent patterns covering these points.

A number of user personas are created based on who we define as the target users for our project.

Persona: 1

Arafat Hasan

Age: 19 years old

Occupation: Student

Weight: 78 kg

Arafat's story:

Arafat has completed the SSC exam and HSC exam and will now join the university. He

lives with his parents in Dhanmondi, Dhaka, he has a younger sister. He loves to eat and play computer games.

What challenges Arafat:

He is overweight for his age. But still he eats and drinks all the time and sits and plays computer games which increases his body weight. He does not like to walk at all. He gets tired after a short walk.

What Arafat needs?

Arafat needs to exercise regularly. Losing more body fat will make him more interested in his work. As he will get admission in the university, he can play games as well as gather information about the university and department of his choice.

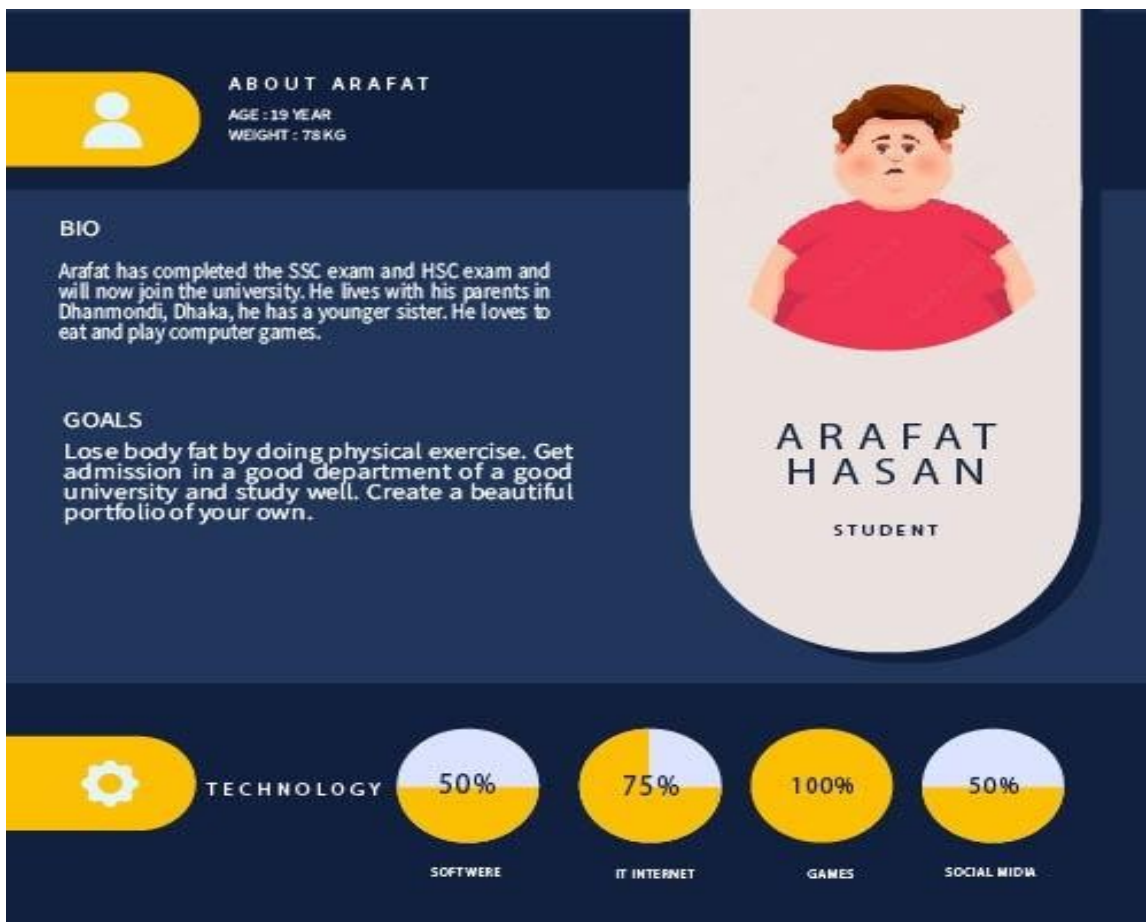


Figure 3.1: User persona

Persona: 2

Sadin Biswas

Age: 50 year's old

Occupation: Businessman

Sadin's story:

He lives in Savar with his two daughters and wife. He has been suffering from diabetes for the past 12 years. Your elder daughter is a seventh semester student of MCT department of Daffodil International University. Her younger daughter is in Class 10 at Savar Girls School. His wife is a house wife.

What challenges Sadin?

He cannot give time to wife and children for business work. His business has to be under pressure. There are also debilitating diseases like diabetes.

What Arafat needs?

He should reduce work pressure, give time to family and stay stress free. Spend time with children and keep track of them.

Persona: 3

Tori Noumi

Age: 20 year's old

Occupation: Students

Tori's Story:

Tari is the only daughter of her parents. He is now a six semester student of MCT department at Daffodil International University. She is very introverted. She is very proficient in her academic work.

What challenge Tori:

Since she is a student of MCT, she has been doing various creative works. But compiling those works doesn't make a portfolio.

What Tori needs:

Tori should create a portfolio by organizing the works and improving the portfolio by doing good works.

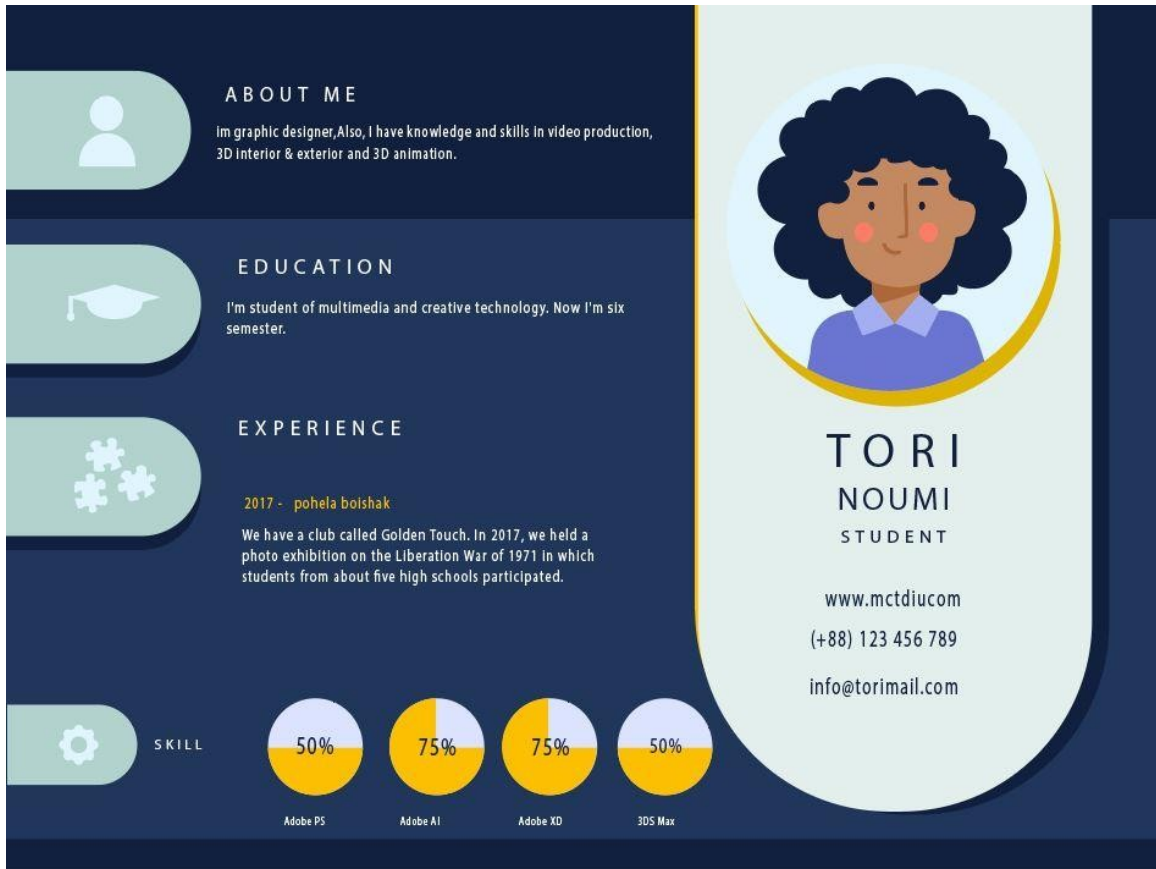


Figure 3.2: User persona 2

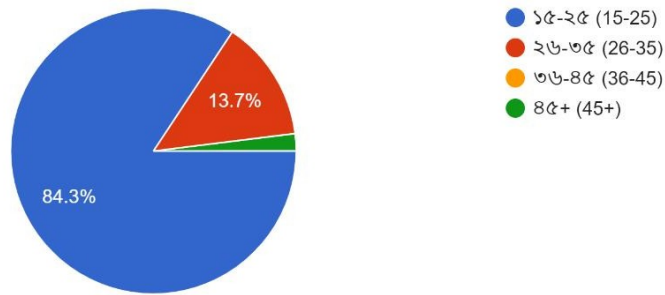
3.3 Survey Questions

Survey research is a unique way of collecting data from a large group. Advantages of surveys include larger populations and therefore a greater statistical power, the ability to collect large amounts of data, and the availability of validated models.

At the beginning of our project design and project creation, we conduct a google survey for users. In which about fifty one people participated and gave their opinion. Through Google survey we collected various information and used it in our design and project. The Google Survey data is given below-

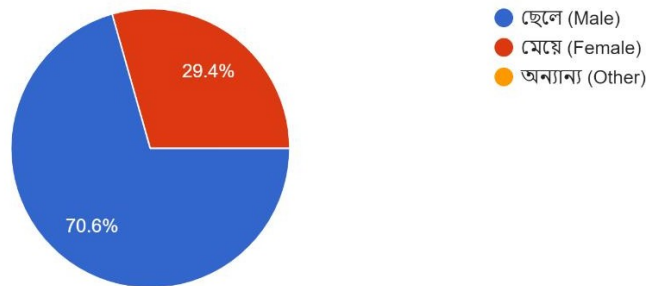
আপনার বয়স? (Your Age?)

51 responses



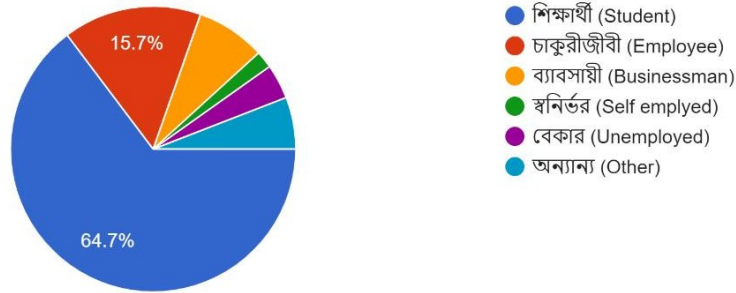
আপনার লিঙ্গ? (What is your gender?)

51 responses



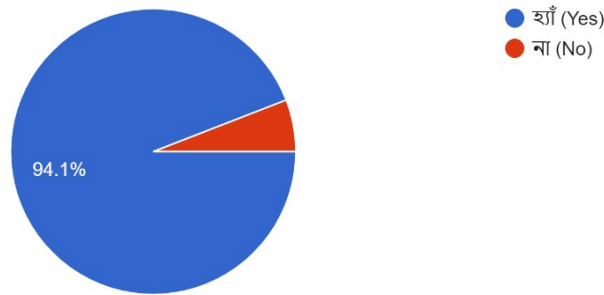
আপনার পেশা কি? (What is your Occupation?)

51 responses



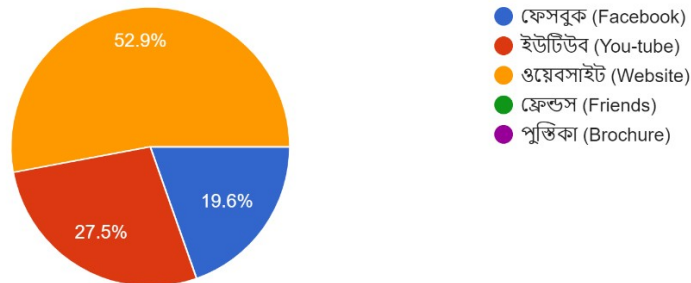
আপনি কি ইন্টারনেটে বিভিন্ন ওয়েবসাইট ব্যবহার করেন? (Do you use different websites on the Internet?)

51 responses



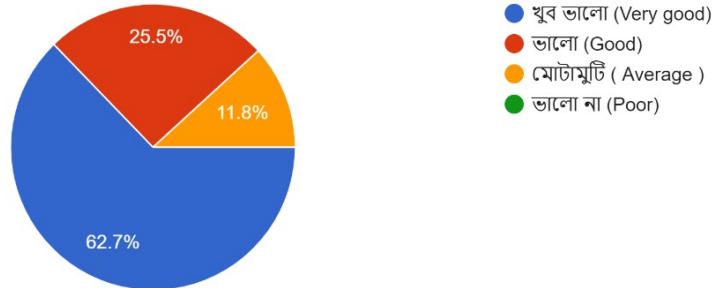
একটি এডুকেশনাল ডিপার্টমেন্ট সম্পর্কে জানার ক্ষেত্রে আপনি কোন ধরনের মাধ্যমকে সবচেয়ে উপযোগী মনে করেন? (What type of media do you find most ... in learning about an educational department?)

51 responses



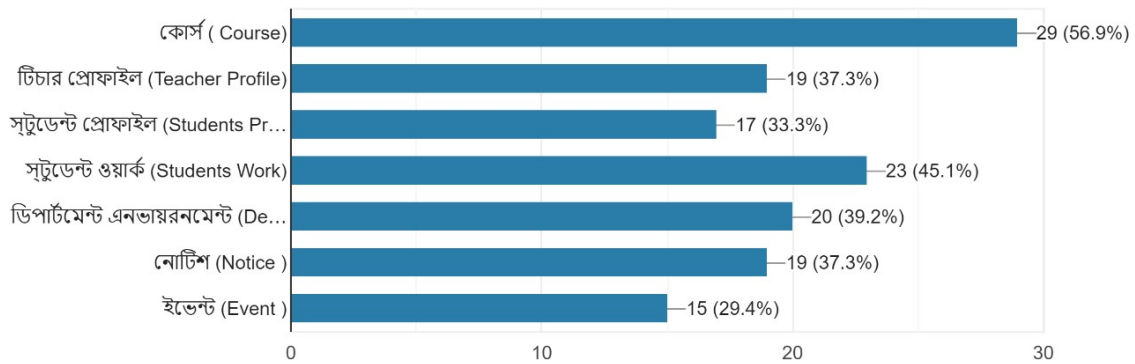
একটি এডুকেশনাল ডিপার্টমেন্টের ইনডিভিজুয়াল ওয়েবসাইট কতটুকু গুরুত্বপূর্ণ ভূমিকা রাখে বলে আপনি মনে করেন? (How important do you think an educational department's individual website is?)

51 responses



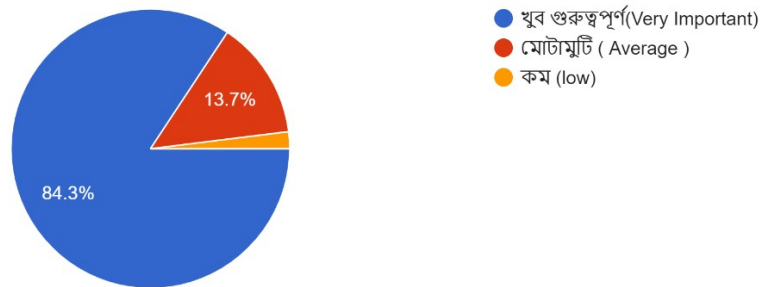
একটি এডুকেশনাল ডিপার্টমেন্ট ওয়েবসাইটে আপনি কি ধরনের তথ্য আশা করেন? (What kind of information do you expect on an educational department website?)

51 responses



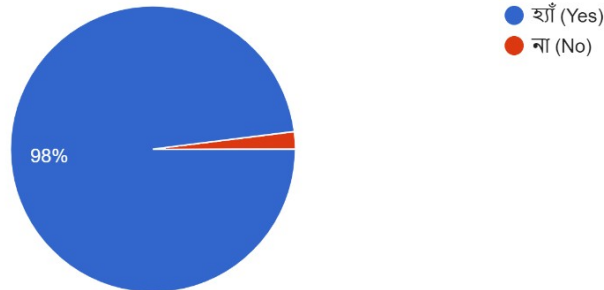
একজন শিক্ষার্থীর জন্য একটি ভালো পোর্টফোলিও থাকা কতটা গুরুত্বপূর্ণ বলে আপনি মনে করেন? (How important do you think it is for a student to have a good portfolio?)

51 responses



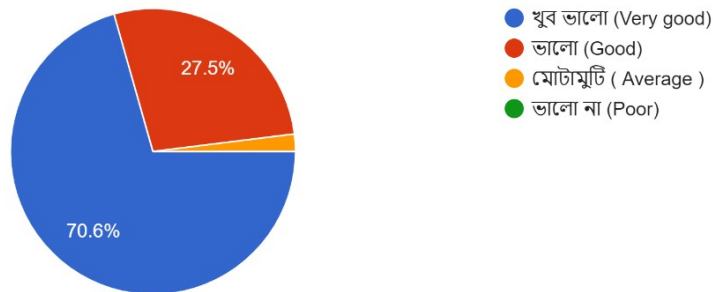
চাকরির ক্ষেত্রে একটি ভালো পোর্টফলিও গুরুত্বপূর্ণ কিনা? (Is a good portfolio important for employment?)

51 responses



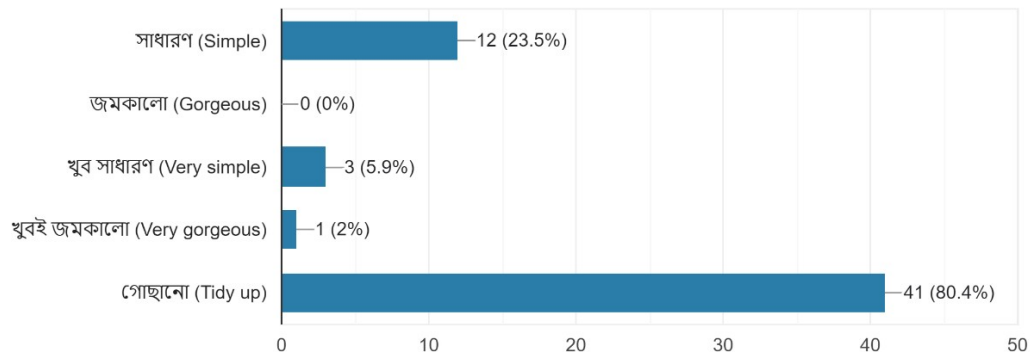
ডিপার্টমেন্ট ওয়েবসাইট এ একটি ছাত্রের পোর্টফোলিও তৈরীর সুযোগ থাকলে কতটুকু সুবিধাজনক হত বলে আপনার মনে হয়? (How convenient do you think it w...a student portfolio on the department website?)

51 responses



একটি এডুকেশনাল ওয়েবসাইটের ডিজাইন কেমন হওয়া উচিত বলে আপনি মনে করেন? (What do you think should be the design of an educational website?)

51 responses



3.4 User Analysis

3.4.1 User Psychology

The psychology of web design includes how color, space in a design, and even typeface can affect a viewer's mood. These elements come into play with the sensory elements of web design to give visitors a specific impression and feeling about your business and products. User psychology aims to understand the cognitive factors that influence how users interact with products. The end goal is to create products that users will love and are naturally easy to use. UX psychology plays a big role in a user's experience with an application. By understanding how our designs are perceived, we can make adjustments so that the apps we build are more effective in achieving user goals.

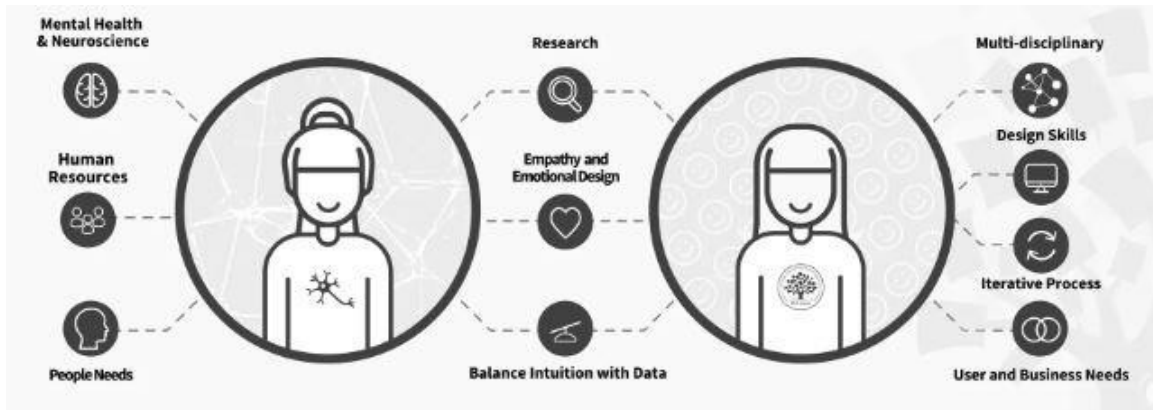


Figure 3.3: Psychology to UX Design

In UX, you're concerned with the emotional journey users take when interacting with a product, service or system. When conducting user interviews and usability tests, you'll be able to leverage your psychology background to identify how users feel when interacting with a product. Design psychology is a combination of neuroscience, cognitive psychology, social psychology, and human-computer interaction that approaches user experience design through the lens of human behavior. In terms of our website design, we have designed and built up the project keeping the above points in mind to determine the psychology of the users.

3.4.2 Geographical Psychology

Geographical Philosophy For an online platform I think it is useful to think globally rather than being specific to a country. And it will work through an online presence. An online presence can be defined by how easy it is to find a brand or company online. It is important to build brand reputation, increase brand awareness and provide visibility of products or services when users search for related keywords. Geographical psychology examines the connections between location and psychological phenomena, such as how and why personality traits, life satisfaction, and social behavior vary from place to place or cluster in specific areas. These differences may appear across hemispheres, regions, states, cities or neighborhoods. Each location has a psychologically diverse population. But simple differences between populations at individual locations can be informative.

3.4.3 Education/ Culture

Taking into account the culture of a population is essential to ensure a good design. Certain elements must be systematically taken into account because they will influence users' perception of a product.



Figure 3.4: Culture Influence Design.

By gaining insight into the values of target culture, you'll also understand how they perceive certain design elements (eg colors, symbols). There are many cultural dimensions that influence these perceptions, which in turn influence your users' decision making. And because the power culture holds in how a society interprets how they view different elements of design, culture has been known to influence design for decades. Culture has the power to influence both the tangible, i.e. physical aspects, and the intangible, i.e. software/digital aspects of design.

In addition to its intrinsic value, culture provides important social and economic benefits. Along with improved education and health, increased resilience, and opportunities to integrate with others, culture improves our quality of life and increases overall well-being for both individuals and communities.

3.5 Features List Creation

Website for MCT department

- MCT Introduction
- Career of MCT
- Mission and vision
- Programme goal
- Lab facilities
- Project resources
- Faculty
- Notices
- Teacher's registration. Teacher will approved by admin.
- Teachers can create their courses.
- Teachers can upload their individual blogs. Students can access all the details.
- Student registration. Student have to select their individual mentors. And, student will approved by his mentor.

- Student can create their personal profile.
- Student can upload their project and project details.
- Everyone can access all the work from frontend.
- There is a search option in frontend to find specific works from student's portfolio page.
- Students can use their profile link as their CV after uploading all their work.
- Student can create blogs as well. And, it will show up on blog sections and the specific students profile as well.
- In backend, student can contact with their teacher by email.
- There is a contact page. For any kinds of queries. And, it will deliver to admin directly.
- Admin can approve and delete any teachers and student Or, he can keep the profile as pending.
- And, a teacher can approve students and delete them as well if needed.

CHAPTER 4

SYSTEM DESIGN

4.1 Requirement Collection and Analysis

Requirements testing refers to program interfaces with other framework components that set up certain constraints. A software engineer sometimes expands the basic requirements into a recent prerequisite planning effort that licenses prerequisite testing. On the off chance that our project team falls short of gathering all the critical requirements for a structure or system, we face a huge problem. So, in such situations the prerequisites should be collected. An essential obligation of an extended group. Our extended waterfall display is used for progression. Highlight its exceptionally effective, original and easy to get since agreeing to our initiative.

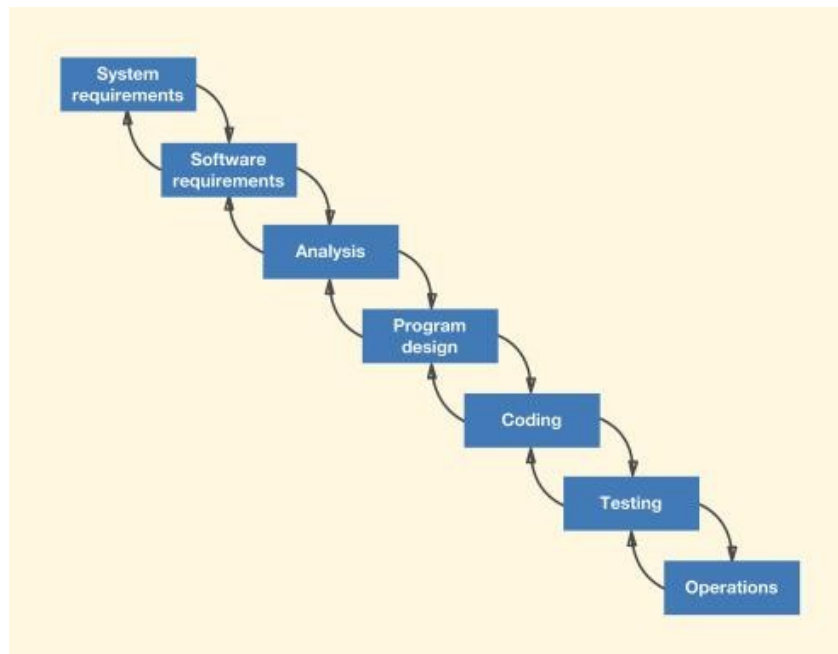


Figure 4.1 Waterfall Model

4.2 Use Case Diagram

A use case is a written description of how users will perform tasks on your website. It outlines, from a user's perspective, the behavior of a system when it responds to a request. Each use case is represented as a sequence of simple steps, starting with a user goal and ending when that goal is met. Use-case diagrams model the behavior of a system and help capture system requirements. Use-case diagrams describe the high-level functions and scope of a system. These diagrams identify the interactions between the system and its actors.

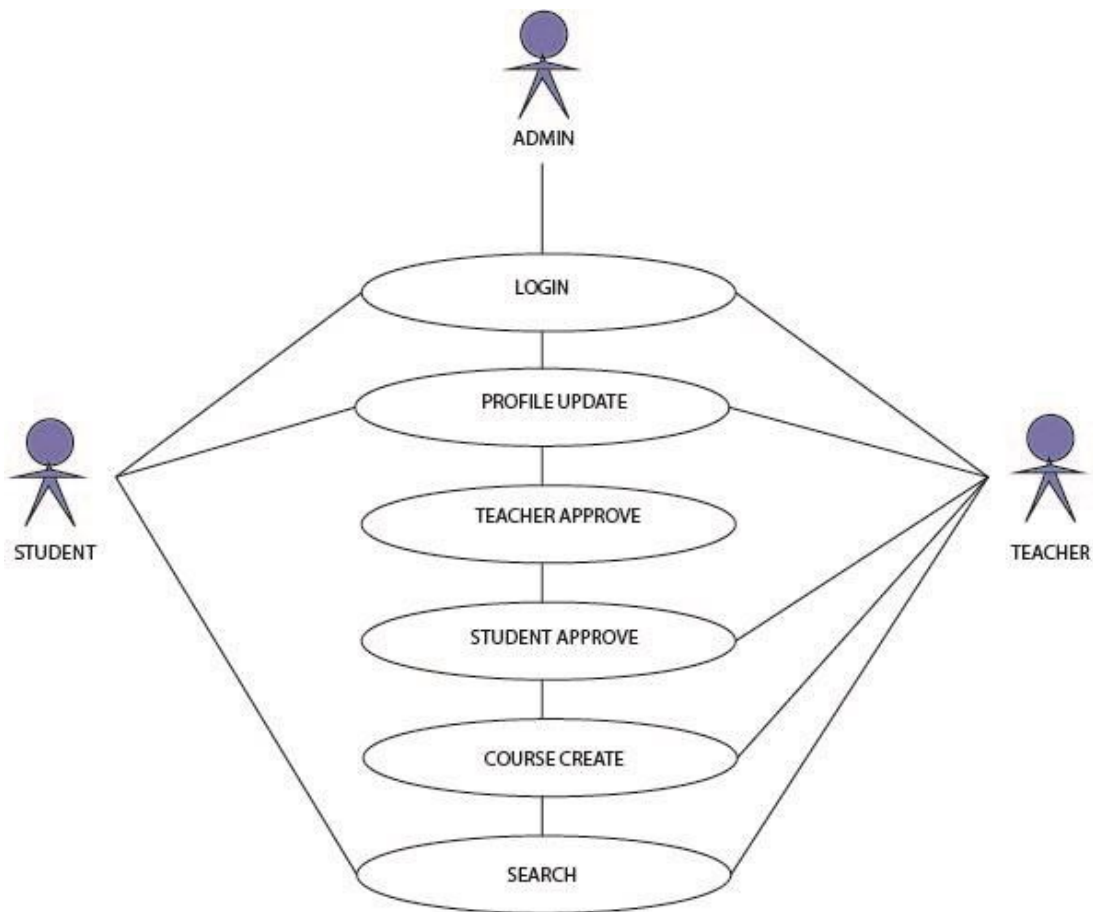


Figure 4.2: Use Case Diagram for registered user

We can divide the users of our website into two groups, 1. Registered user and 2. Unregistered user. Registered users can login. After login they can create their profile. Can convert profile to portfolio. Like they can customize their profile with different tasks, block writing.

Unregistered users can browse the website and get contact information.

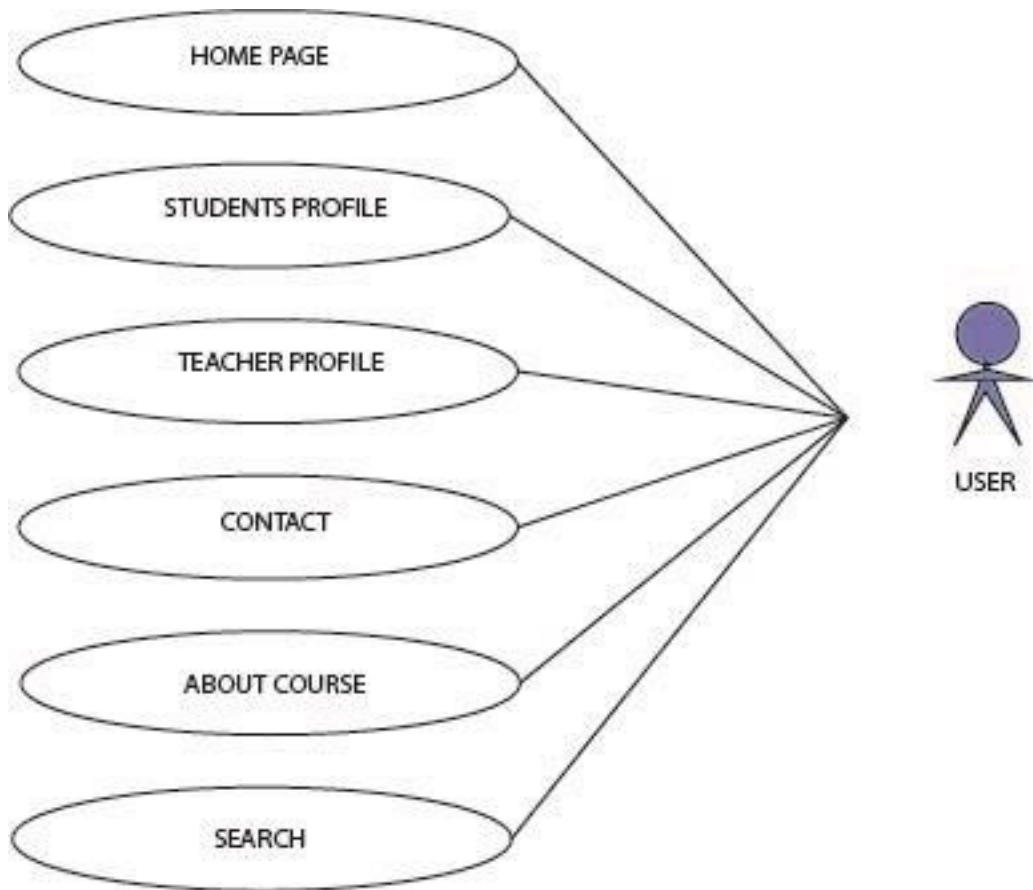


Figure 4.3: Use Case Diagram for unregistered user

The above use case diagram is for unregistered users. They can see the website home page, contact, student profile, teachers profile, everything. These users can be any person who can use the website.

4.3 Activity Diagram

Activity diagrams are another important behavioral diagram in UML diagrams for describing the dynamic aspects of a system. Activity diagrams are essentially an enhanced version of flow charts that model the flow from one activity to another. An activity diagram shows business and software processes as a progression of actions. These actions can be carried out by humans, software components or computers. Activity diagrams are used to describe business processes and use cases as well as document the implementation of system processes.

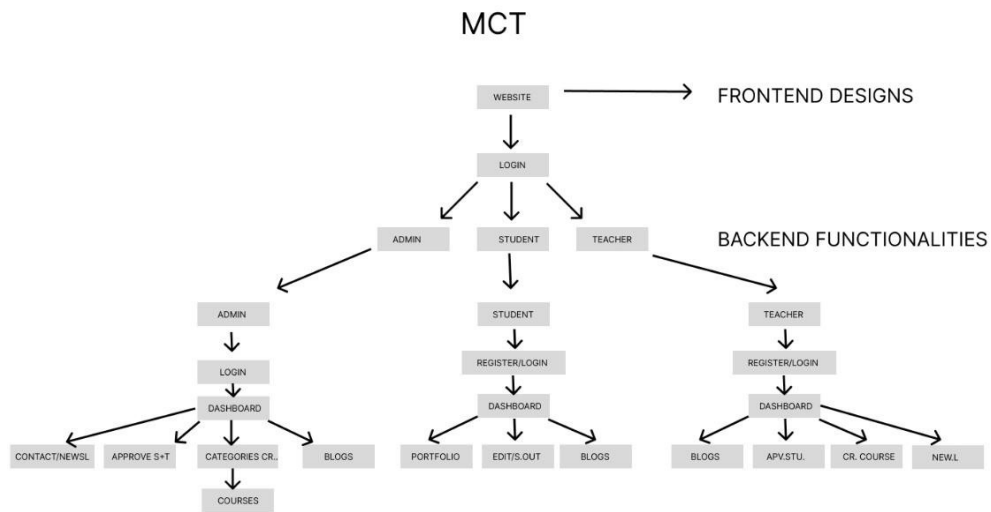


Figure 4.4: Integrate Activity Diagram

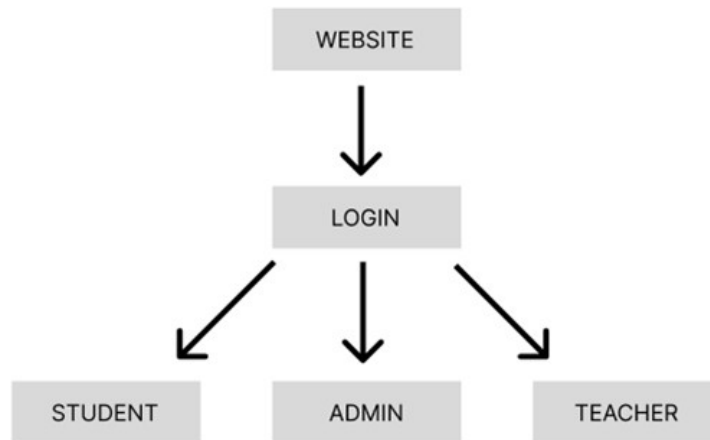


Figure 4.5: Activity Diagram for registered user

This website is a department -centered. This is the Maine user of the website, which is their first state activity diagram. When you enter the web site, the users will have three panels. The first panel admin is the second teacher third Student.

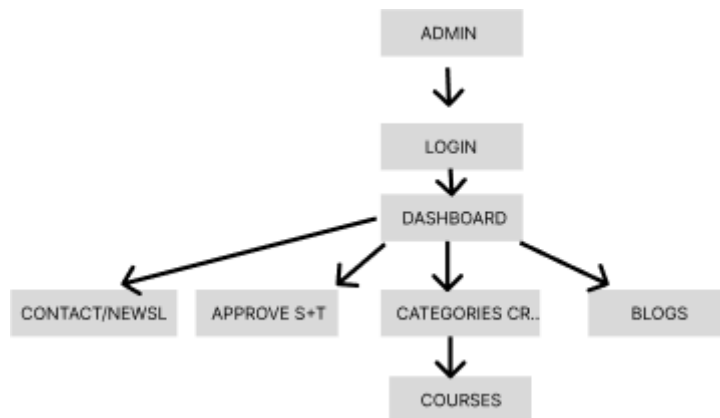


Figure 4.6: Activity Diagram for Admin

We have tried to show a flow of proper work of admin panel from the above activity diagram. An instruction on how the admin of this website will work. Admin login will have a separate dash board. Admin can create courses, approve teachers and also manage all website tasks.

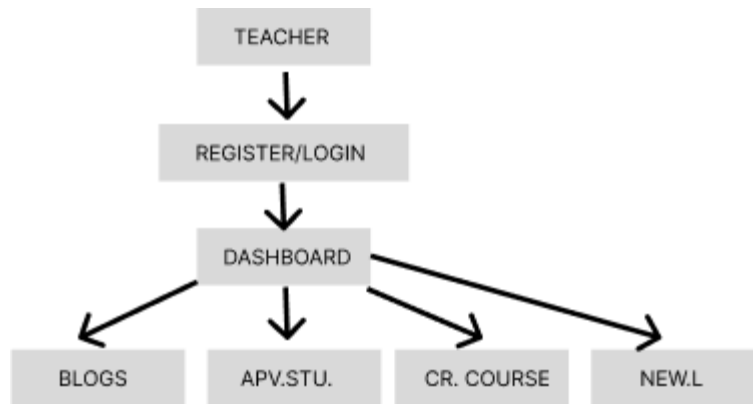


Figure 4.7: Activity Diagram for Teacher

The activity diagram above is the teachers work sequence. If the teacher registers on the website, the request for his approval will be sent to the admin panel, if the admin approves, a teacher profile will be created. The work of the teacher in the teacher panel can check the approval request of the students, update the personal profile, makes announcements on various topics.

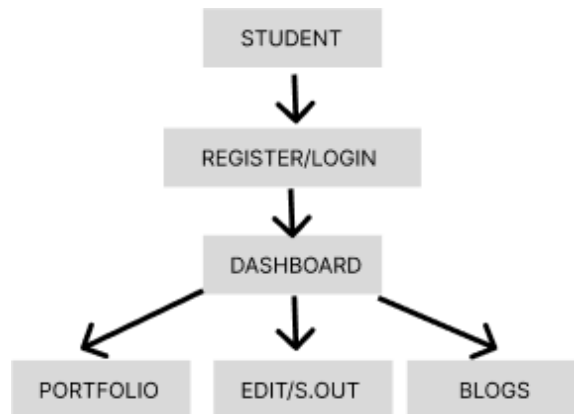


Figure 4.8: Activity Diagram for Student

Here is a workflow of students through activity diagram. In case of login to the web site, a request notification will be given to the teacher for student approval. At this time, the login student will set up his mentor. Then after logging in, the student's approval request will go to the specified mentor. If Mentor or Teacher approves, student will get his profile, create portfolio, write blog, and edit them.

CHAPTER 5

MY CONTRIBUTIONS

5.1 Concept

Ever since I was a student in the Multimedia and Creative Technology Department, I have been thinking that it is very important for all of us to have a personal portfolio and everyone makes one. From there I thought a little differently and thought that we would have a portfolio and that it would be great if we could build our department identity through it. I think it's great that our department has a personal website where all our students have the opportunity to create personal portfolios.

5.2 Website build up

We have used Visual Studio software for our website build up. Coding is done in HTML, CSS, JAVASCRIPT, BOOTSTRAP, PHP language. PHP is one of the most popular programming languages for server-side web development. We used a PHP Framework Called Laravel. It's one of the popular frameworks in PHP to develop a site. We used laravel for backend development and all the CRUD operations we need.

5.2.1 HTML

HTML implies hypertext markup language that is utilized to form electronic records which are shown on the www. Each and each page includes a development of relationships with various pages which are called hyperlinks. It may well be made a difference by headways, for occurrence, Cascading Fashion Sheets (CSS) and scripting vernaculars, for occurrence, JavaScript. [6]

```

78      data-max-num-pages= 2" data-next-page= 2" >
79      <div class="edgt-cl-inner clearfix">
80
81          </div>
82      </div>
83  </div>
84  </div>
85  </div>
86  </div>
87  </section>
88  </div>
89  <div class="edgt-sidebar-holder edgt-grid-col-3 edgt-grid-col-pull-9 edgt-sidebar-left">
90  <aside class="edgt-sidebar">
91  <div class="widget widget_text">
92  <div class="edgt-widget-title-holder">
93  <h4 class="edgt-widget-title">Our Course Categories</h4>
94  </div>
95  </div>
96  <div class="widget widget_nav_menu">
97  <div class="menu-elements-menu-container">
98  <ul id="menu-elements-menu" class="menu">
99  <li id="menu-item-1125">
100  class="menu-item menu-item-type-custom menu-item-object-custom current-menu-ancestor current-menu-parent menu-item-has-children menu-item-1125">
101  <a href="{{ route('front.course.index') }}">All Course</a>
102
103  </li>
104  @foreach ($categories as $category)
105  <li id="menu-item-1125">
106  <li class="menu-item menu-item-type-custom menu-item-object-custom current-menu-ancestor current-menu-parent menu-item-has-children menu-item-1125">
107  <a style="display:block;line-height:40px;" href="{{ route('front.course.category', $category->id) }}">{{ $category->name }}</a>
108
109  </li></li>
110  @endforeach
111  </ul>
112  </div>
113  </div>
114  </aside>
115  </div>
116  </div>
117  </div>
118  </div>
119  </div>
120  @endsection
121

```

Figure 5.1: HTML coding

5.2.2 CSS

The full meaning of CSS is cascading style sheets. I used CSS to design the whole website. Basically, css is used to create an html tag into our desired designs. like the color, padding, margin, text style and etc things of design things.

To design something I call an HTML tag or class into our CSS file and write code for that specific class or tags to style anything into our document file. [7]

5.2.3 Bootstrap

Bootstrap is a commonly known framework for web developers. It's basically for the front-end design. Here we can find all the important coding structures that are already pre maid. ad, what we are doing is just copying some of the codes and using it into our website to make a whole site. [8] In Bootstrap there are lots of pre-made coding structures already built. Thats why, we need to copy some relevant codes or sections and modify it using our own custom css to make the website look like our own designs.

5.2.4 Javascript

JavaScript is a high-level, interpreted programming language used to create interactive web pages and web-based applications. It was first introduced in the mid-1990s as a way to add dynamic and interactive elements to static HTML pages. [9]

JavaScript is commonly used for client-side scripting, which means that the code runs in a web browser and can modify the contents of a web page dynamically, in response to user actions and other events. For example, JavaScript can be used to add interactivity to forms, create animations and special effects, and implement features like drop-down menus and pop-up windows.

JavaScript can also be used on the server-side, using frameworks like Node.js, which allows developers to write server-side code using the same language they use on the client-side. JavaScript is a widely used programming language, with a large community of developers and a wealth of resources available online. It is also used in many other contexts beyond the web, such as desktop and mobile applications, game development, and server-side applications.

On my project I use some javascript codes to create and customize some of the plugins i used on the website.

5.2.5 PHP

PHP is one of the most popular programming languages for server-side web development. It is used in many frameworks and CSMs like WordPress, Laravel, Symfony and others that are behind a large part of the Internet. Visual Studio is a powerful IDE, but its focus is not aligned with certain languages, PHP being one of them. Over time, more languages like Python and eventually PHP found their way into Visual Studio. A Prague-based company called DEVSENSE has developed an extension for Visual Studio called PHP Tools that has been available in the Visual Studio ecosystem for over a decade. PHP Tools for Visual Studio has been a paid extension since its inception, offering a free trial. Now, that has changed. DEVSENSE is releasing a large part of their offering as a free extension, leaving some features as paid. It allows PHP developers to work in Visual Studio and take advantage of all the great things available. [10]

```
254     'Asset types',
255     'Asset types',
256     'manage_options',
257     'gpfbc-asset-types', // slug
258     'gpf_booking_calendar_asset_types'
259 );
260 }
261
262 add_action('admin_menu', 'gpf_booking_calendar_top_menu');
263 add_action('admin_menu', 'gpf_booking_calendar_assets_menu');
264
265 function gpf_booking_calendar_activate()
266 {
267     global $wpdb;
268
269     $table_name = $wpdb->prefix . '_gpfbc_assets';
270     $charset_collate = $wpdb->get_charset_collate();
271
272     $sql = "CREATE TABLE $table_name (
273         id mediumint(9) NOT NULL AUTO_INCREMENT,
274         name varchar(30) NOT NULL,
275         released varchar(25) NOT NULL,
276         asset_type_id int(11) NOT NULL,
277         PRIMARY KEY (id)
278     ) $charset_collate;";
279
280     require_once( ABSPATH . 'wp-admin/includes/upgrade.php' );
281     dbDelta( $sql );
282
283     $table_name = $wpdb->prefix . '_gpfbc_bookings';
284     $sql = "CREATE TABLE $table_name (
285         id mediumint(9) NOT NULL AUTO_INCREMENT,
286         customer varchar(100) NOT NULL,
```

Figure 5.2: Sample of visual studio code

5.2.6 Laravel

Laravel is a free, open-source PHP web application framework used for web development. It was created by Taylor Otwell in 2011 and has since grown to become one of the most popular PHP frameworks.

Laravel provides developers with a set of tools and features to help them build web applications quickly and efficiently. Some of its key features include a powerful routing system, an expressive query builder, an elegant syntax, a robust authentication system, and built-in support for tasks like database migrations, unit testing, and caching. Laravel also

has a large and active community of developers, which means that there are many third-party packages and libraries available to extend its functionality. The Laravel ecosystem includes a wide range of tools and resources, including documentation, tutorials, and online communities where developers can share ideas and help each other out. [11]

Overall, Laravel is a powerful and flexible web application framework that can help 560 developers build robust and scalable web applications with ease.

Mainly I used laravel on this project for most of the backend operations. because, it's more user friendly to use than raw PHP codes.

5.2.7 Database

As the database of my site I used MySQL. A database is a structured collection of data that is organized and stored in a way that allows for efficient retrieval, management, and manipulation of the data. Databases are used to store and manage data in a wide range of applications and industries, including finance, healthcare, retail, and many others. A database typically consists of one or more tables, each of which contains rows and columns of data. The columns in a table represent the various attributes or properties of the data, while the rows represent individual records or instances of that data. The data in a database is often stored in a format that allows it to be easily queried and analyzed using specialized software called a database management system (DBMS). [12]

There are several different types of databases, including relational databases, NoSQL databases, and graph databases, each of which is designed to handle different types of data and different use cases. Relational databases, for example, are the most common type of database and use tables with a defined schema to store data, while NoSQL databases are designed to handle unstructured or semi-structured data that does not fit well into a traditional table-based structure.

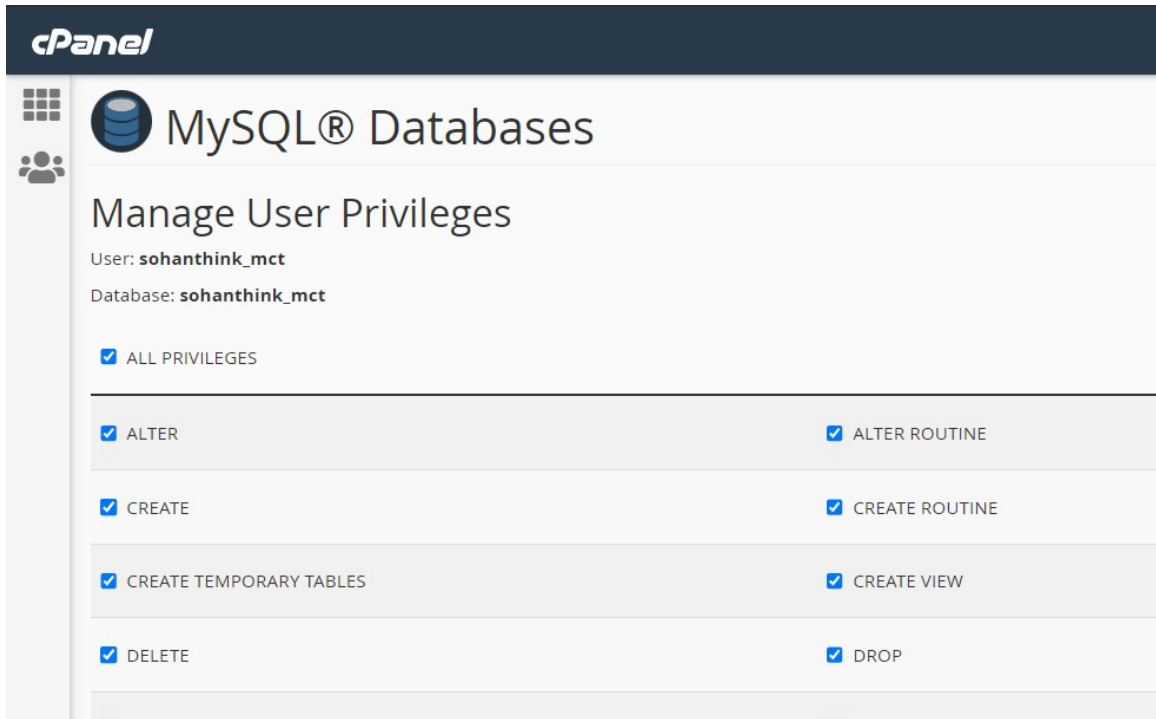


Figure 5.3: Databases

5.3 Functionalities

The project titled “Research and development of education website and its usability” has a management system built with required functionalities. That one is something like a student management system. And there I built three dashboard including Admin Dashboard, Student dashboard and teachers’ dashboard. Every dashboard has different functionalities to manage things.

5.3.1 Input Messages

When someone enters the wrong password or email then it will show this following message. This will happen in every single form and input box.

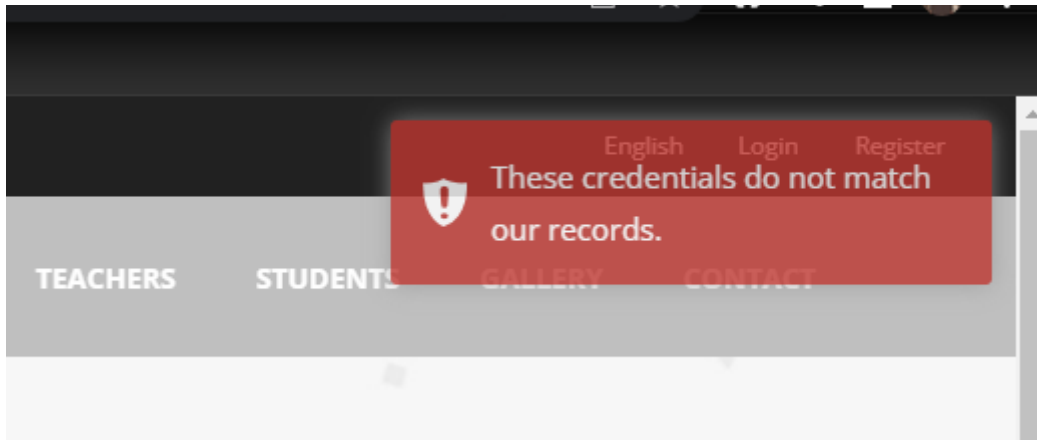


Figure 5.4: input messages

5.3.2 Newsletter Subscription Messages

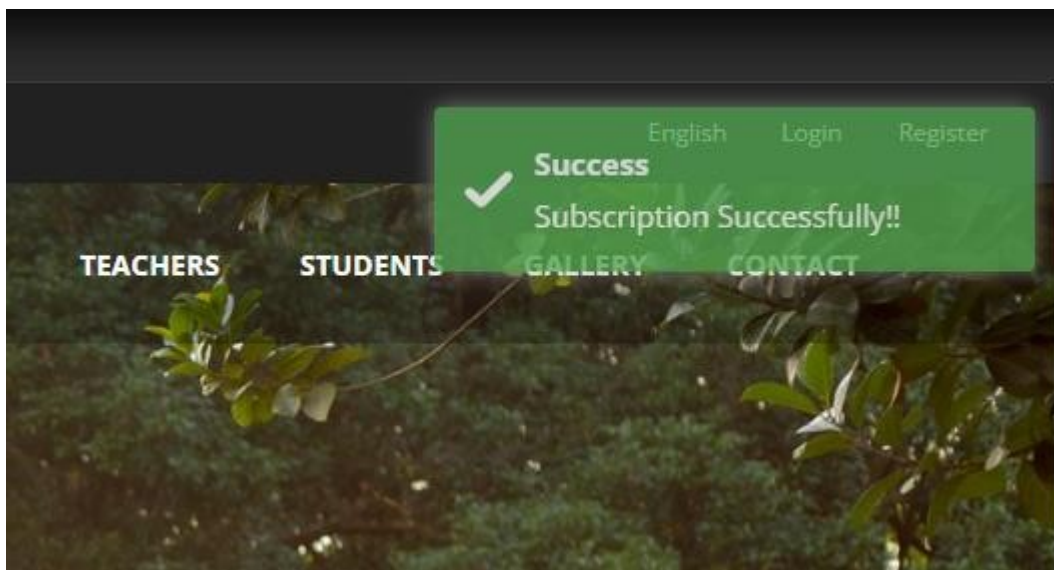


Figure 5.5: Subscription messages

When someone enters their name , email and phone number to subscribe to the newsletter then it will show the success message that you subscribed successfully.

5.3.3 Course Dropdown

Our Course Categories

> All Course

UI Design

3D Animation

Game Development

Web Engineering

Mathematics - 1&2

Bangladesh Studies

3D Environment Design



Figure 5.6: Course dropdown

Here this dropdown is a specific button. When someone clicks on that button then it will expand on these specific categories.

5.3.4 Teachers Creation



Figure 5.7: Teachers creation

When a teacher registers an account then it will directly appear here on that front end of the website.

5.3.5 Students Portfolio

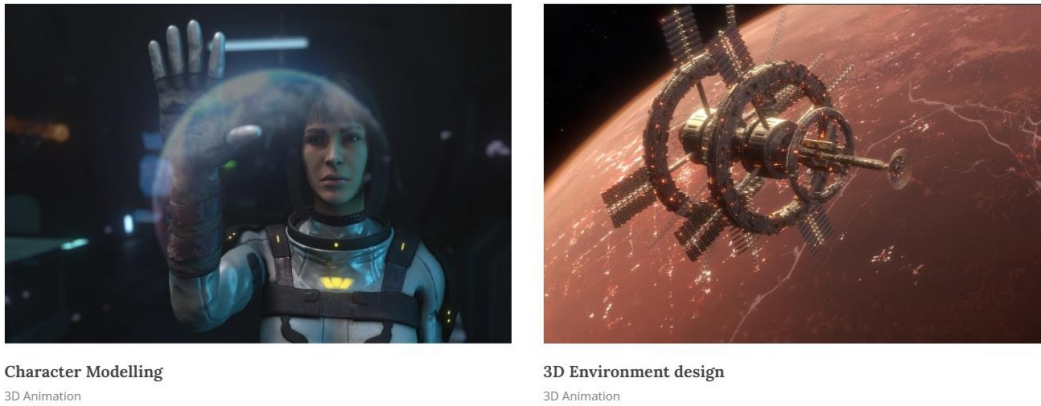


Figure 5.8: student work

When a student uploads their work on their profile then it will appear on the main gallery page automatically.

5.3.6 Admin Control Panel

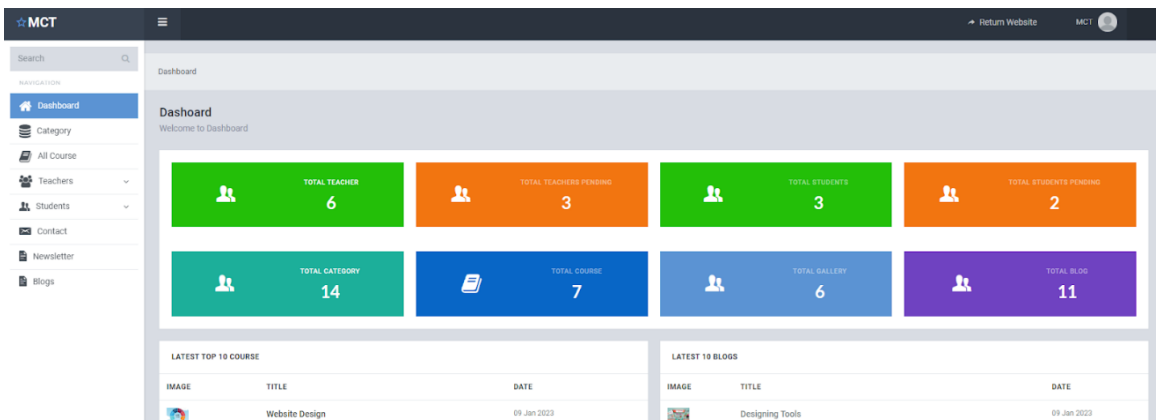


Figure 5.9: Admin control panel

After logging as an admin on the website, At first what comes in is the average overview of the functionality and enrolled students, teachers, category, courses and etc things.

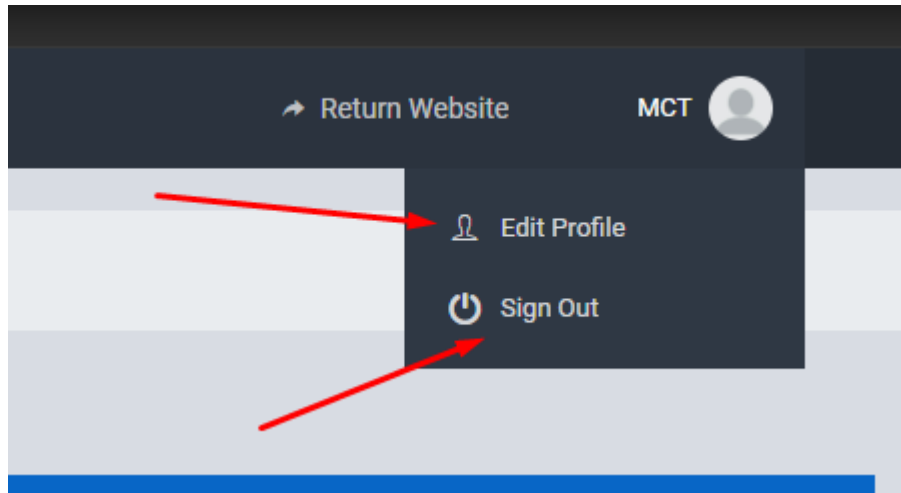


Figure 5.10: profile and option to sign out

There is an option to edit the whole profile and option to sign out from the panel. When someone clicks on that edit option then he will get all the options to update his account informations like edit his name, upload pictures and etc etc things.

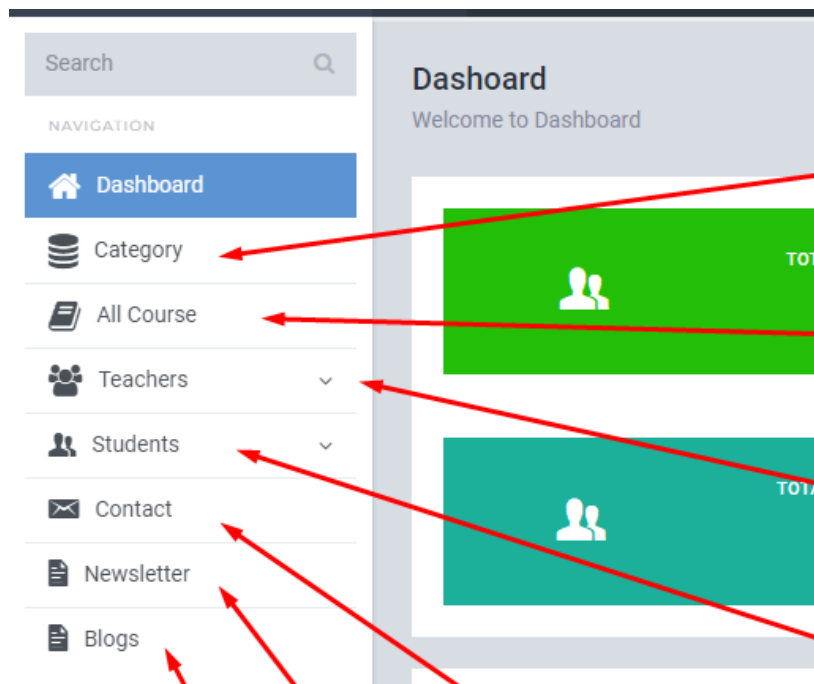


Figure 5.11: Dashboard

Also there are some other options to manage all of those things. Into that category option we can create categories for the website courses and after then courses means to create courses into those specific categories.

SL	NAME	GENDER	STATUS	ACTION
1	salah	Male	pending	✖ ✔
2	mizanur rahman	Male	pending	✖ ✔
3	test2	Male	pending	✖ ✔

Figure 5.12: specific categories

When a specific student or teacher registers then it will show on the pending section and when someone then it will show on the active dropdown section.

SL	NAME	EMAIL	PHONE	ACTION
1	Drita	y0l9ne64@icloud.com	89957732156	✖ ✔
2	Bonny Steen	bonny.steen@gmail.com	06-25764704	✖ ✔
3	Drita	4y868hf@gmail.com	84946134532	✖ ✔
4	Drita	c5gz5csw@hotmail.com	89901554274	✖ ✔
5	Drita	tiobb1g@yahoo.com	83652449781	✖ ✔
6	sadia	sadia@gmail.com	11111111111	✖ ✔
7	Mehedi Molla	mollameehed@gmail.com	+8801581835842	✖ ✔
8	Muhammad Sohan mollah	sohan40-576@diu.edu.bd	+8801746776448	✖ ✔

Figure 5.13: specific categories 2

On the contact button, here we can see all the contact messages people sent from the website.

On that contact section there are options to delete the specific message or view the whole message by clicking on that eye button.











PHONE	ACTION
86957752156	 
06-25764704	 
84946134532	 
86991554274	 
83652449781	 

Figure 5.14: delete the specific message

On the blog section here we can see all the blogs that people have created and also have the option to create blogs as admin.

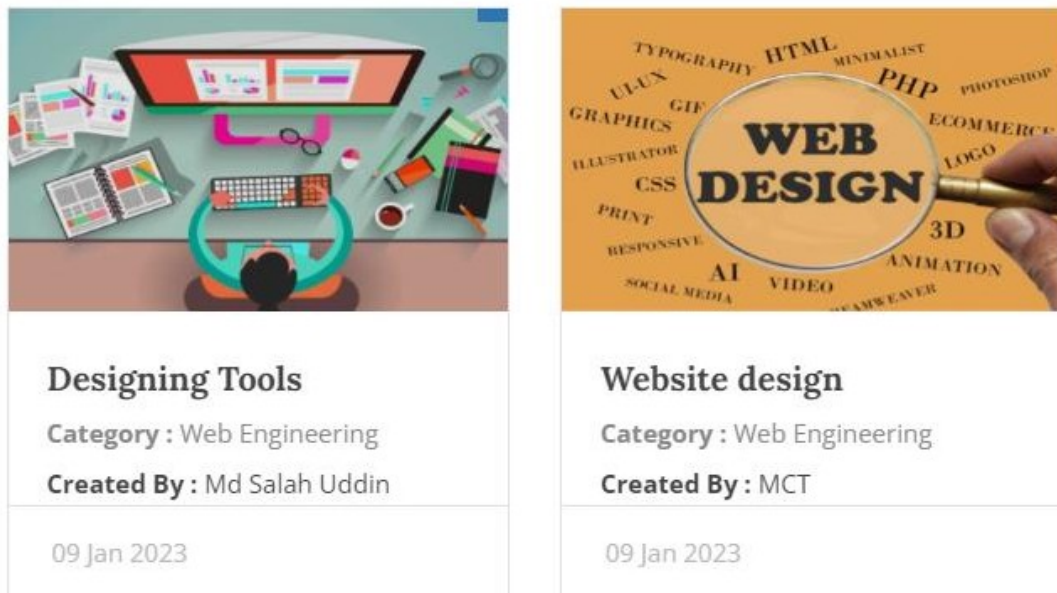


Figure 5.15: Tools

When someone created a specific blog then it will be shown to the front end directly and it will automatically show who has created that blog. Also, it will show the information like the categories. Like, when someone is creating a specific blog then he needs to select the category.

5.3.7 Teacher Control Panel

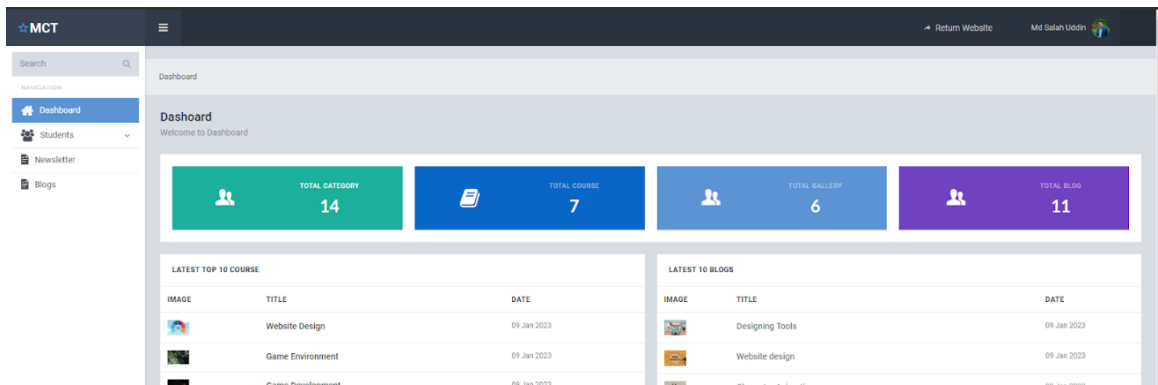


Figure 5.16: Control panel

After successfully login to the teachers control panel he will show the following options. Also he will get all the options shown on the following images to control.

5.3.8 Student Control Panel

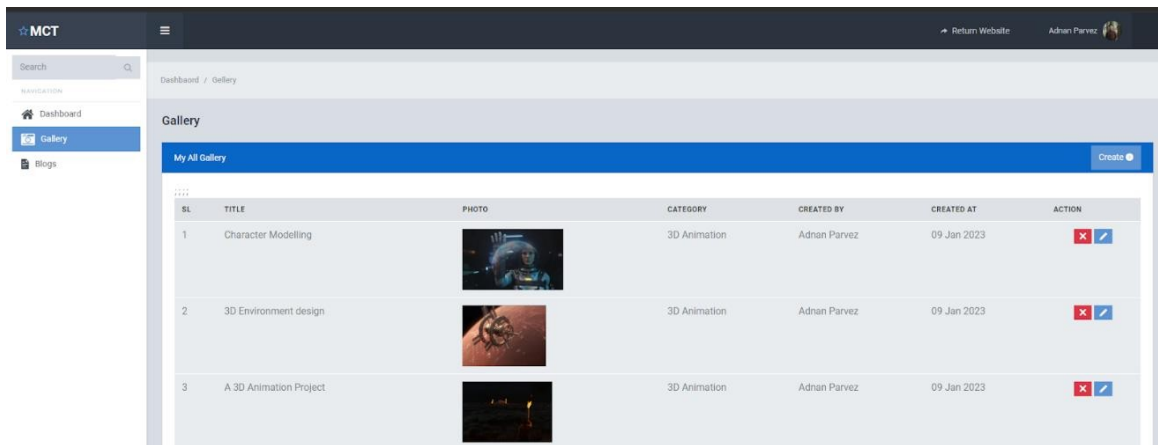


Figure 5.17: Student Control panel

After successfully login to the student control panel he will get the options to upload his works easily. He will get the option to create his gallery and it will automatically show on his profile.

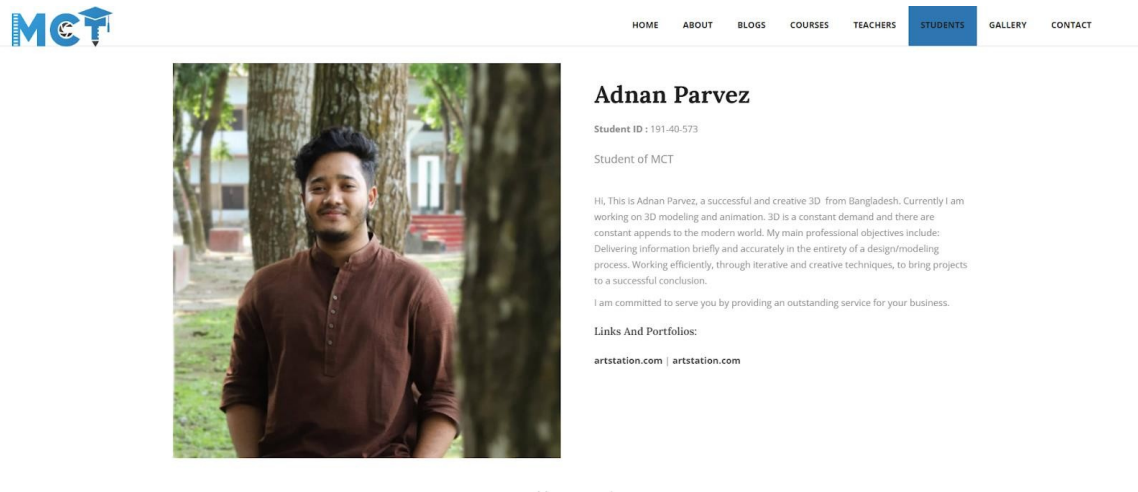


Figure 5.18: Student profile

That is how a student's Profile will look like on the front end. Here this details page will show his university ID and description he added from his admin panel. Also he can add His required portfolio links as well.

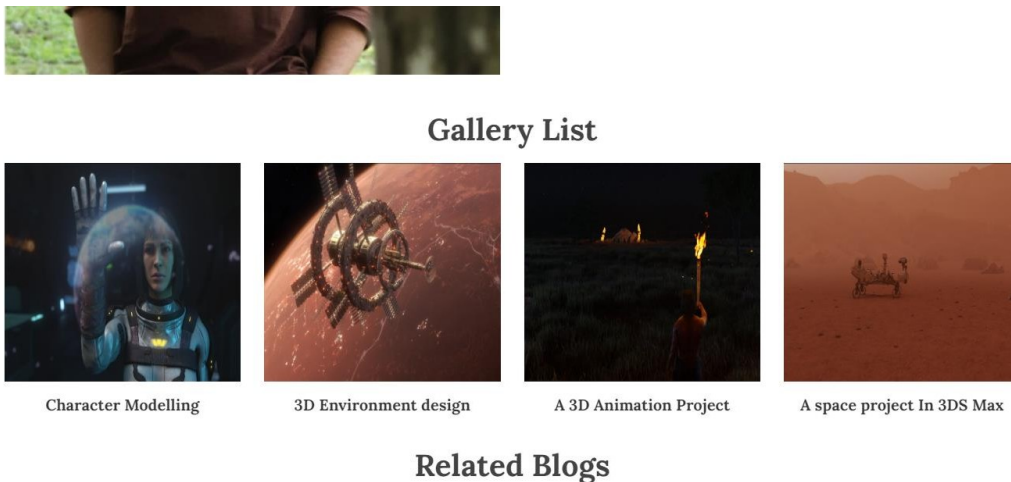


Figure 5.19: Student profile

That is how his gallery will look. When a student uploads any portfolio from his dashboard then it will be listed automatically here on his profile description. Also, this one will also be shown on the gallery page from the website.

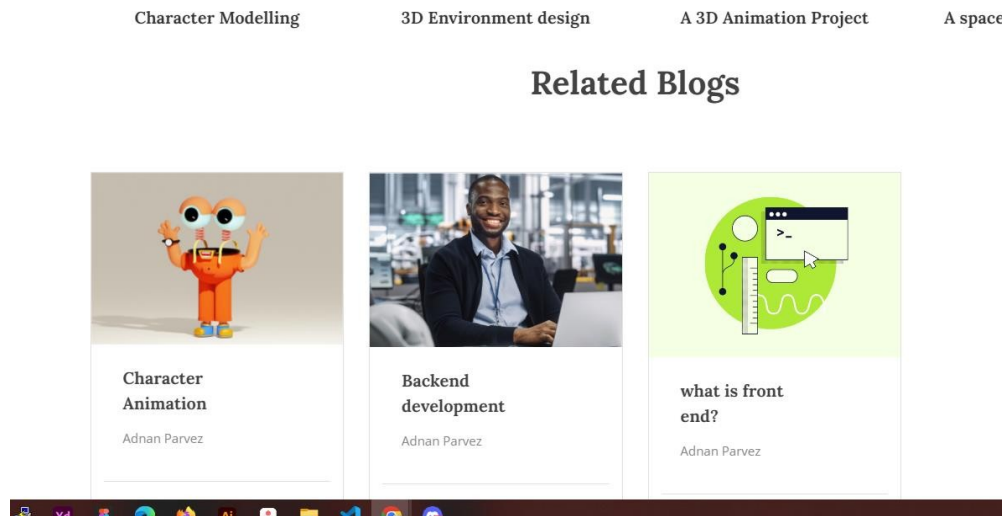


Figure 5.20: Student profile

There will be a portion on the student details page called related blogs. Here, this page will show all the blogs he created as a student.

5.3.9 Students Portfolio

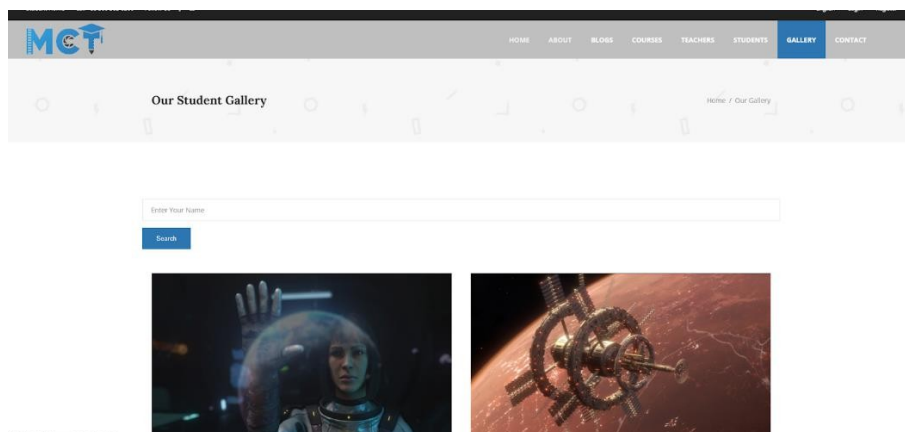


Figure 5.21: Student portfolio

This page will show all the works created by students. When someone uploads his portfolio then it will show his profile and it will also be listed on this gallery page as well.

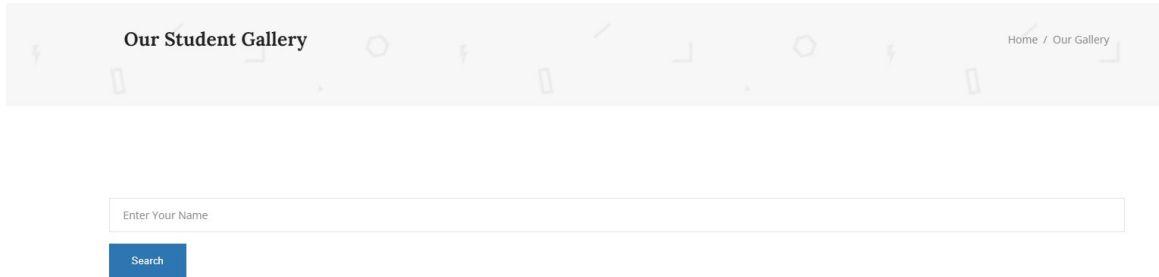


Figure 5.22: Search option

There will be search options to find out related works of the students. This will help to find out related works for a job. When a company needs any people then he will come to this page and search on that page to find out his required people.

CHAPTER 6

FINAL CONSEQUENCE

After all the struggle and hard work we were able to complete our project. We have developed a website that will work for the MCT department. All the facilities that we have put in this website will be very helpful for the users. A student user can create his portfolio on this website. Any user can easily use it and learn various things about the department at home.

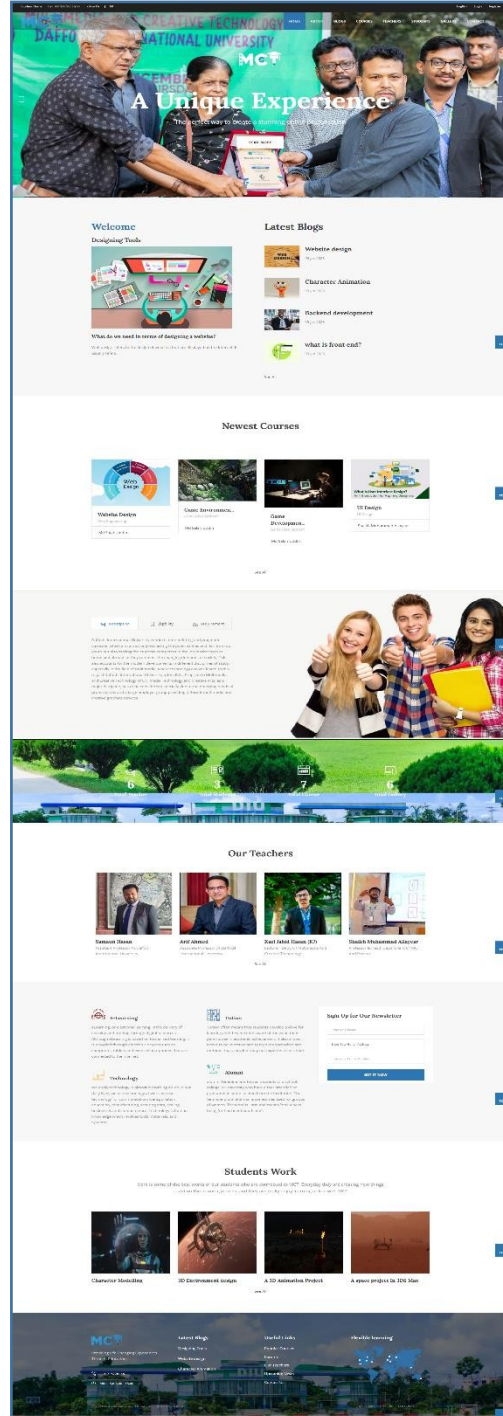


Figure 6.1: website home page

The home page gives a small idea of the entire website. From the home page it is understood what the details are inside the website. User can also visit each page as per their choice to learn about all these, student user and teacher user can update their profile by login. Those who are not registered users can contact the contact page to know anything about the department

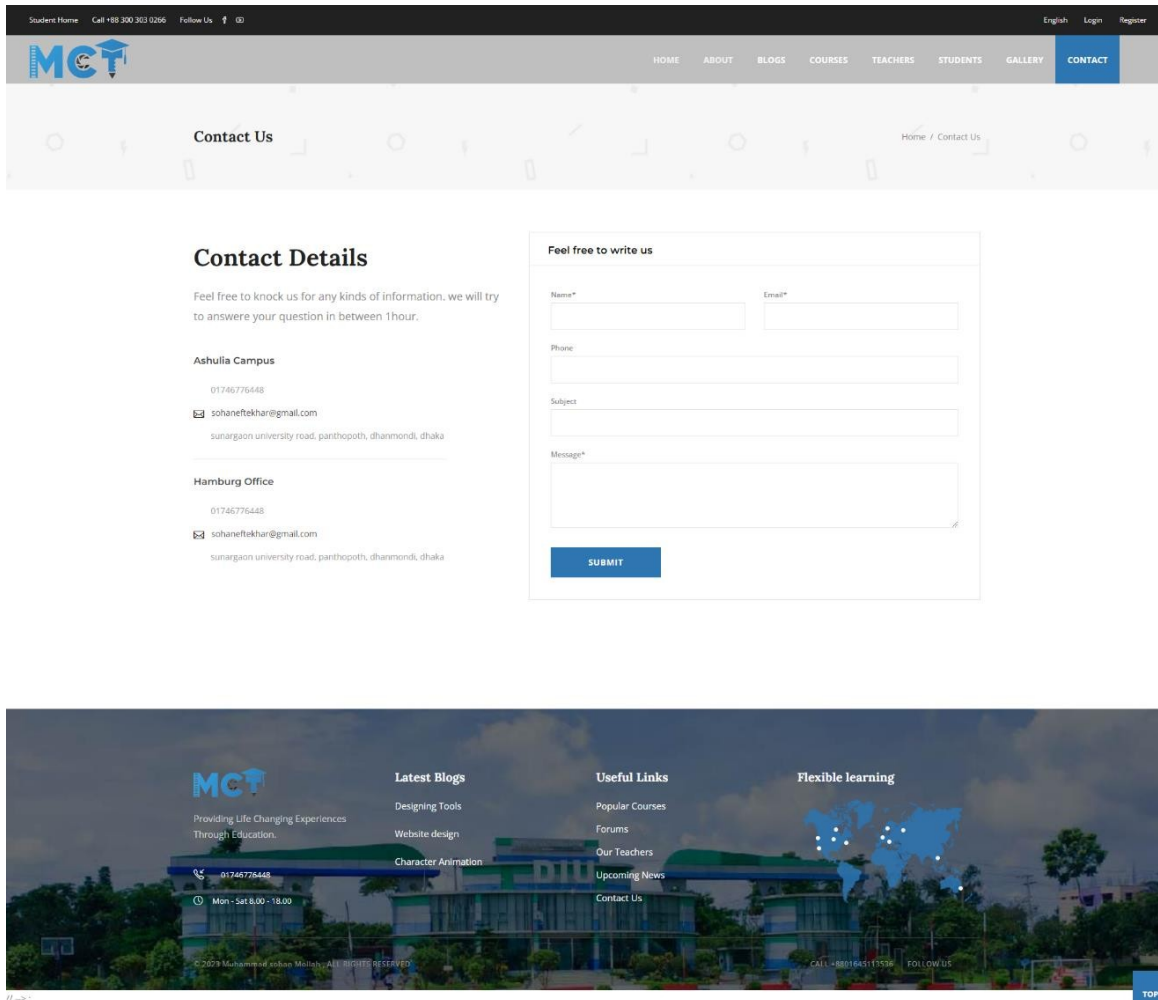


Figure 6.2: website contact page

6.1 Implementation and Testing

We execute the extend that how the affiliations are begun, kept up, conclusion and what

prerequisites anticipated. Analyze diverse social settings in which affiliation may be happen structure of social associations. Front-end development is called client-side development for creating HTML, CSS, Bootstrap, for a web application. So a user can clearly observe and interface with them. The test structure associated with this is front-end enhancement to reliably change the front-end wrap of a position thus demanding the developer to constantly consider how the field is progressing.

The effort concluded by presenting several types of clarifying test data. Clarification for test use, test data, conclusion honest results obtained. Test methods or test components are included in a test execution system that shows which structures to use to initialize which can be a type of superscript.

6.2 Sustainability Plan

We have measures to maintain our claims. We carefully plan our site so that it serves its purpose indefinitely without a significant negative impact on our users. To introduce the specific department to the whole world by creating these websites and student portfolios which are globally accepted online.

6.3 Design Evaluation

UI UX evaluation is the process of evaluating the usability, functionality and ease of use of an interface. This is an important step in the design process, as it can help ensure that the user experience is positive and meets the needs of the target audience. User experience evaluation means measuring the user's ability to learn and use the product to reach his goals. This phase is key to creating products and services that best match user expectations.

6.4 Scope for Further Developments

The global market for LMS software is expected to reach \$7.57 billion by 2026. Additionally, eLearning is trusted by a host of Fortune 500 companies who have witnessed the effectiveness of an LMS first hand. In the future, our thoughts can be used for online support structures with huge scope. There is without a question, not numerous information

estimated users we are able to revive. In the future we may take the website towards further development. In that case we can add many more features to the website. In that case, the organizations will be more updated then the portfolios will be useful for providing direct jobs. Here we can take the big things like university admission online through the website. We will add more selections and workspaces for the user. In future we are able to include different records including electives. This is capable of approaching strategies for users who want to go ahead with the expansion.

CONCLUSION

Our project is based on learning management system. Learning management systems are websites that offer a unique and best platform to manage learning resources and content. It helps organizations, teachers and students to collaborate and manage all the resources used in the learning process. This system helps the institution to maintain student information. It can be easily accessed by the manager and can be kept safe for a long time without any changes. An LMS can support or inhibit active engagement, meaningful connections between course components, easy communication and constructive feedback for faculty to make course requirements easier or more difficult, provide open feedback, and use course materials, together adjacent to each other. We have seriously introduced portfolio in our learning management system i.e. our projects. An eLearning portfolio is one of the most important marketing tools at disposal. An e-learning portfolio acts as a virtual showcase of your achievements, talents, skills and experience

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RESEARCH AND DEVELOPMENT OF EDUCATION WEBSITES AND IT'S USABILITY BY MUHAMMAD SOHAN MOLLAH ID: 191-40-576 [This Report Presented in Partial Fulfillment of the Requirements for the Degree of Bachelor of Science](#) in Multimedia and Creative Technology [Supervised By](#) Mr. Md Salah Uddin [Assistant Professor & Head \(In-Charge\)](#) Department of MCT Daffodil International University [DAFFODIL INTERNATIONAL UNIVERSITY DHAKA, BANGLADESH FEBRUARY 2023](#) i [APPROVAL This Project titled](#) "Research and development of education website and its usability", [submitted by](#) Muhammad Sohan Mollah [to the Department of Multimedia and Creative Technology, Daffodil International University, has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of B.Sc. in Multimedia and Creative Technology and approved as to its style and contents. The presentation has been held on](#) 27 February 2023. 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Supervised by:](#) Mr. Md Salah Uddin [Assistant Professor & Head \(In-Charge\) Department of MCT Daffodil International University Submitted by:](#) Muhammad Sohan Mollah ID: 191-40-576 [Department of MCT Daffodil International University](#) iii [ACKNOWLEDGEMENT First I express my heartiest thanks and gratefulness to almighty God for His divine blessing makes us possible to complete the final year project successfully. I am really grateful and wish our profound indebtedness to](#) Mr. Md Salah Uddin, [Assistant Professor & Head \(In-Charge\), of Multimedia and Creative Technology Department of Daffodil International University, Dhaka. Deep Knowledge & keen interest of my supervisor in the field of "Website Creation" to carry out this project. His endless patience, scholarly guidance, continual encouragement, constant and energetic supervision, constructive criticism, valuable advice, reading many inferior draft and correcting them at all stage have made it possible to complete this project. I would like to express my heartiest gratitude](#) Dr. Shaikh Muhammad, [Professor of, Department of MCT, for his kind help to finish our project and also to other faculty member and the staff of MCT department of Daffodil International University. I would like to thank my entire course mate in Daffodil International University, who took part in this discuss while completing the course work. Finally, I must acknowledge with due respect the constant support and patients of my parents.](#) iv [ABSTRACT](#) We are doing this project to present an educational institute as an online base. Because now we live in an online presence world, and online presence is very important. So we have built up our project with that important. Online portfolio showing is required for various remote jobs and permanent jobs. Our project has a portfolio creation part. It allows students to share portfolios from their department and teacher references. Apart from this, student teacher communication, introduction of the department to the world etc. will be on our project. v [TABLE OF CONTENTS](#) [CONTENTS](#) Approval [Board of examiners Declaration Acknowledgements Abstract](#) [CHAPTER CHAPTER 1 : CASE STUDY 1.1 Case Study Overview 1.2 Problem Identification 1.3 Motivation 1.4 Objectives 1.5 Project Timeline \(Gantt chart\): 1.6 Related Work And Research 1.7 Competitive Analysis 1.8 Hypothesis of our solution CHAPTER 2 : LITERATURE REVIEW 2.1 Learning Management System \(LMS\) 2.2 History and Definition of LMS 2.3 Benefits of a learning management system ©Daffodil International University PAGE ii iii iv v 1-6 1-1-2 2 3 3-4 4-5 5-6 7-12 7 7-8 9 vi 2.4 The Importance of learning management system CHAPTER 3 : USER RESEARCH 3.1 Target Users 3.2 User Persona 3.3 Survey Questions 3.4 User Analysis 3.4.1 User Psychology 3.4.2 Geographical Psychology 3.4.3 Education/ Culture 3.5 Features List Creation CHAPTER 4 : SYSTEM DESIGN 4.1 Requirement Collection and Analysis 4.2 Use Case Diagram 4.3 Activity Diagram CHAPTER 5 : PROCESS \(MY CONTRIBUTIONS\) 5.1 Concept 5.2 Website build up 5.2.1 HTML 5.2.2 CSS 5.2.3 Bootstrap 5.2.4 JavaScript 9-12 13-24 13 13-16 17-20 21 21 22 22-23 23-24 25-31 25 26-28 28-31 32-47 32 32-33 33 33 34 vii 5.2.5 PHP 5.2.6 Laravel 5.2.7 Database 5.3 Functionalities 5.3.1 Input Messages 5.3.2 Newsletter Subscription Messages 5.3.3 Course Dropdown 5.3.4 Teachers Creation 5.3.5 Students Portfolio 5.3.6 Admin Control Panel 5.3.7 Teacher Control Panel 5.3.8 Student Control Panel 5.3.9 Students Portfolio CHAPTER 6 : FINAL CONSEQUENCE 6.1 Implementation and Testing 6.2 Sustainability Plan 6.3 Design Evaluation 6.4 Scope for Further Developments CONCLUSION REFERENCES 34-35 35-36 36-37 37 37-38 38 38-39 39 40 40-44 44 44-46 46-47 48-51 49 50 50 50-51 52 53 viii LIST OF TABLE & FIGURES TABLE Table-1.1 Project Timeline \(Gantt chart\) FIGURE Figure 2.1 Learning on the go Figure 2.2 Web Communication Figure 3.1: User persona Figure 3.2 : User persona 2 Figure 3.3 : Psychology to UX Design Figure 3.4: Culture Influence Design. Figure 4.1 Waterfall Model Figure 4.2: Use Case Diagram for registered user Figure 4.3: Use Case Diagram for unregistered user Figure 4.4: Integrate Activity Diagram Figure 4.5: Activity Diagram for registered user Figure 4.6: Activity Diagram for Admin Figure 4.7: Activity Diagram for Teacher Figure 4.8: Activity Diagram for Student Figure 5.1: HTML coding Figure 5.2: Sample of visual studio code Figure 5.3 : Databases Figure 5.4: Input messages Figure 5.5: Subscription messages Figure 5.6: Course dropdown Figure 5.7: Teachers creation Figure 5.8: student work Figure 5.9: Admin control panel Figure 5.10: profile and option to sign out Figure 5.11: Dashboard ©Daffodil International University PAGE NO 3 PAGE NO 11 12 14 16 21 22 25 26 27 28 29 29 30 31 33 35 37 38 38 39 39 40 40 41 41 ix Figure 5.12: specific categories Figure 5.13: specific categories 2 Figure 5.14: delete the specific message Figure 5.15: Tools Figure 5.16: Control panel Figure 5.17: Student Control panel Figure 5.18](#)

: Student [profile Figure 5.19](#): Student [profile Figure 5.20](#): Student profile [Figure 5.22](#): Search option [Figure 6.1](#): website home page [Figure 6.2](#): website contact page 42 42 43 43 44 44 45 45 46 47 48 49 x CHAPTER 1 CASE STUDY 1.1 Case Study Overview This project (UI/UX Design Concept of Education Websites and its Usability) can be used as a specific department's website. Because, this website has functionality to create accounts for both teachers and students. And student and teachers can edit their profile to their own content and descriptions. There will be a super admin who will manage everything and approve teacher accounts. And, when the student registration for creating an account then the teachers can approve their request to create their accounts. And super admin will approve teachers account. Also students have functionality to upload their portfolio works what other student can view. Also they can upload their works on the website and submit this link as their assignment.

1.2 Problem Identification We are often asked by many people which department you are studying in, what is taught in this department, what is its future, then there are many people who cannot be understood with a few words. Then it becomes a problem. Then it seems that it would be better if the answers to all the questions could be given together. Again, if you want to know about the department, you have to come to the department, see and then know. It is a joyous thing to come and see, knowingly being admitted. But at times it is a waste of time and at times tiring. Also portfolio is a very important subject for students in our department. In that case we have to take help from other websites. Many times teachers have to provide refer ences in our CVs. In that case, after dropping that CV in an institute, teachers from that institute call or knock to know about the student. Teachers are often so busy that they can't pick up the phone and can't or don't have time to talk about a student . In order to know how well a student can do in a subject, they have to follow them personally, in that case, not all students can be guided equally. In that case, it is not clear who is doing well, who is doing medium, who is not doing well. So we are working on this project as a collective solution to these problems. In addition, when each unused item is outlined there are different resistors. We also faced various difficulties and challenges. During our initiative (Domain Information) development and testing sessions, we ran into various obstacles and problems to make the Internet application secure and simple.

1.3 Motivation Internet is nothing without web applications or web pages. To interact with internet we must have to go with some process. And then comes World Wide Web where all the websites is stored and running. So when we want to switch from analog database to digital database then we have to create web pages and upload that into internet so that people can use this. ? Reduce time and cost. ? User friendly to manage the students and their works. ? Important announcements goes easy to publish. ? It's online every time. Can be login anytime and manage things easily.

1.4 Objectives - Concepts about the department. - Introduction to the Department. - Portfolio creation. - Student Teacher Bonding. - Department Information Exchange.

1.5 Project Timeline (Gantt chart): Table-1.1: Gantt chart of "UI/UX Design Concept of Education Websites and its Usability" working process timeline.

1.6 Related Work and Research Our project is a learning management system. [There are many types of learning management](#) systems. For example, BLC is a massive learning management system for Daffodil International University. Google Classroom is a very common learning management system. [Blended Learning Center \(BLC\) is Daffodil International University's](#) digital teaching [and learning hub](#). The platform aims [to effectively connect teachers and students](#) so that [teachers](#) can [track](#) the progress of individual students and facilitate their learning better. BLC has played a huge role as our online learning center during the Corona Pandemic. Our regular classes, assignments, quizzes, exams, everything is through BLC. Blended Learning Center (BLC) acts as a virtual classroom after all. What was practically not possible was done online. Similarly in google classroom we can see our class rooms. We can do signed assignments in the classroom and get lectures. But we cannot make our own portfolio on these websites. We need another portfolio maker website for portfolio creation. We want to create a project combining all these things that will have our courses like BLC and google classroom and what work is coming out of the courses. Good works can be used as their own portfolio. And that portfolio will be created on the same website. So I am going to recharge all these things and do the work related to the project. I think our project will be the beginning of a new genre of work.

1.7 Competitive Analysis Nowadays the rate of competition is very high in any work we have to compete and stay ahead. And that competition has to be through good deeds. The competitive discussion regarding our project is as follows, We are build-up a website about our department. Our department is Multimedia and Creative Technology. In creating a website with the Multimedia Creative Technology Department, first we have highlighted the multimedia identity. In that case, what is actually there in this department, what is taught, I have tried to present all the information about the department. But the question may be that a banner or a poster is often enough for such information. What is the role of the website in that case? So the answer is, we can know all the information about the department through online website anytime from anywhere. There is no need to look for banners or posters. And in the case of creating banners, posters, they have to be printed out to promote them, which increases the cost. Such websites are very useful in that case. But there can be many such websites. In that case, why should we be different? As an answer to that question, we would like to say that there are many [types of learning systems in learning management](#) systems. For example, BLC is a learning management system of daffodil international university, Google classroom is a learning management system. Our website does not have many of the features that BLC has. Again, all the features that are available on our website are not available in BLC. In this case, it can be said that each website is good for its own separate work and users use it that way.

According to the convenience of the users, if the combination of several websites is made in one medium, the competition can go a long way. Our website has departmental information as well as teachers' portfolios, students' portfolios, courses, blogs, events, all together. We do not need the help of any other website in creating portfolio. We can create it through our own website. In the case of CV reference, no teacher has to take responsibility separately. If you share a portfolio link on a website,

the student can share his portfolio along with his department, teacher, everything through a link. So we expect our website to be ahead in this kind of competition. If we compare our proposed website with other learning management system websites then there are definitely some differences and it is a different learning management website. Our website is mainly about building department identity and students' portfolios within it. We only look at departmental identity websites and use different websites to create portfolios. Our website is basically a combination of both.

1.8 Hypothesis of my solution Following are the hypotheses to solve the problems we identified in the build-up to this project. To save time and cost, this website will serve as a departmental identity. A person or a student who takes admission in the department has to visit the department physically to know about the department, about the work of the students of the department, about the course, etc. He used to waste a lot of time going to the department again, spending money, renting a car, eating food, he would get tired of doing all these things. But he doesn't have to do all these things, he can learn about the department sitting at home. We can inform people about our department through a website. A website will answer various questions about the department. But what our project or website will do on a larger scale is portfolio creation. A student's portfolio is a very important thing for job sector. If the teachers have a check out in making that portfolio then it must be published as a good portfolio. We use other websites for portfolio creation. We will have the facility of making our own portfolio within the department website in this project. This will improve the quality of work. In making our own portfolios, any work we add to our portfolios as per our liking, there may be many errors which we do not catch. But if these are regularly checked by the teacher and given the points to correct them if they are wrong, then the works are not too faulty and the portfolio consists of good works. In CVs we use references of teachers to verify the institutes where we drop the CV and they knock the teachers. In this case, many times teachers have to spend time apart from their busy schedule. It can become painful at times. We have provided mentor assign option in student login on our website. So that the student can create a portfolio by verifying his work through Mentor. When student shares the portfolio, the reference of the teacher is working with will automatically appear. By this time a student is getting a believable support from the whole department.

CHAPTER 2 LITERATURE REVIEW Student management system is a departmental Web Application. This application is basically for all users, because it's online platform website. Basically it's a (LMS) learning management system.

2.1 Learning Management System (LMS) A learning management system (LMS) is a software application or web-based technology used to plan, implement and evaluate a specific learning process. It is used for e-learning practices and, in its most common form, consists of two components: a server that performs the base functionality and a user interface that is managed by instructors, students, and administrators. Typically, a learning management system provides an instructor with the means to create and deliver content, monitor student participation, and evaluate student performance. A learning management system can provide students with the ability to use interactive features such as threaded discussions, video conferencing, and discussion forums. LMSs are often used by businesses of all sizes, national government agencies, local governments, traditional educational institutions, and online/e-learning-based institutions. Systems can improve traditional educational methods, while saving organizations time and money. An effective system will allow instructors and administrators to efficiently manage elements such as user registration, content, calendars, user access, communications, certifications, and notifications.

2.2 History and Definition of LMS Learning management systems (LMS) provide teachers and students with an online classroom that powers the learning process. In online classroom environments, learning management systems (LMS) empower teachers and students in the learning process. A standard LMS supports an inclusive learning environment for academic advancement with a mediated structure that promotes online peer-grouping, professional training, discussion, and communication among other LMS users. Nasser, Cherif, and Romanowski (2011) stated that LMS use provides online learners with consistent information regarding their performance. Using an LMS allows online learners to be independent. Learner engagement is sustained as online users use an LMS to monitor their progress. Watson and Watson (2012) describe the adoption of computers throughout history as computer-based instruction (CBI), computer-assisted instruction (CAI), and computer-assisted learning (CAL), as general terms. These terms apply to computer application programs, teaching and design preparation. Terms refer to monitoring, approval, and distribution of materials. An LMS has multiple online activities and acts as a framework to capture numerous levels of progressive learning. An LMS acts as a platform to distribute and monitor educational content. LMS functions include disseminating information specifically designed to capture student progress in meeting expectations. An LMS platform creates an environment for engagement and student achievement, allowing students to register for classes, track their grades, and check for updates and course announcements. Watson and Watson (2012) recommend that as school districts integrate the use of an LMS, they should have a functional requirement to use the LMS. They discuss LMS administrative management techniques, including enabling profile features, guidelines for following the curriculum, guidelines for managing assignments, discussion boards, writing resources, and updates from the instructor. LMS users gain access to materials and information disseminated by instructors in synchronous or asynchronous settings. An LMS provides a productive learning environment for users to integrate multiple components of the system application. In an educational setting, computer users have access to operations with unfamiliar terms, and many computer users in education may have access to applications with unfamiliar terms and acronyms that are confusing to understand. Thus, users may not understand which interpretations are appropriate to use; differentiating an LMS from similar technologies is fundamental.

2.3 Benefits of a learning management system A learning management system provides a variety of benefits to users, regardless of the type of organization using it. For example, an LMS can save an organization time and money. Instead of students taking time out of their day to travel and sit through lessons or training, LMSes allow users to complete coursework at

time that works best for them. Additionally, costs can be reduced by eliminating the need to hire instructors, training days, training materials, travel expenses and locations. Other benefits of learning management systems include: ? Ability to monitor user progress and performance. ? Enhanced eLearning accessibility without geographical limitations. ? Ability to personalize online training and learning experience. ? Enhanced eLearning accessibility without geographical limitations. ? Ability to update eLearning modules and activities easily and efficiently. ? Ability to easily deliver online training and learning materials effectively and ensure use of automation. Finally, centralized learning is another major benefit offered by LMSes. It allows an organization to securely organize and store all big data in one location this allows instructors and administrators to more easily update and maintain learning materials. It also helps create effective training that is consistent across organizations. Additionally, most LMSs have advanced encryption features that help ensure data and content remain secure.

2.4 The importance of learning management system In step with the hyper-connected and ever-evolving world, educational institutions have been able to stay on top of their rapidly changing needs by making Learning Management System (LMS) adoption common. LMS offers a streamlined and integrated e-learning platform for the convenience of students, instructors and administrators. For example, 1. Convenient and Efficient One of the best features of a learning management system is that it becomes a centralized platform that contains all the course material required for a particular course. Having a single, well-managed database streamlines the learning experience for all students. Students can upload and assess assignments from one platform. This makes it convenient for instructors to be able to distribute resources to all students by uploading them to the LMS. Cloud-based LMS especially add this advantage since the data is accessible from anywhere. 2. Allows Greater Flexibility One of the biggest ways the traditional classroom experience is changing is through the introduction of blended and hybrid learning. Blended learning allows students to take lectures in person and supplement their learning with study materials found in the LMS. Learning management system content can include readings, notes, recorded lectures, lesson plans, and more. Hybrid learning, on the other hand, allows greater flexibility by allowing students to take classes in person or online and supplement them with course material in an LMS. Online classes can be taken directly from within the LMS. Based on their choice, students can join the classes of their choice. This flexibility makes it easier for students to maintain attendance and prevents any disruption to the course plan if the campus is closed for any reason. 3. Personalized Learning Pathways An important consequence of the increased interest in e-learning platforms is the emphasis on personalized learning. Learning is not the same for everyone and different students learn in different ways. Personalized learning allows students to go through courses at their own pace. 4. Easy Assessment and Grading Tools A key benefit of having a learning management system in education is the ease with which instructors can assess the performance of their students. Timed/untimed tests and quizzes can be administered from the LMS and their grading can be automated and simplified. Students can choose to take this assessment from anywhere. 5. Learning on the Go Running your course in a learning management system means learning from anywhere, even on the go. Some of the best learning management systems come with mobile applications to make content more accessible. Also a better understanding of the website is known through the eLearning system. For example, the information that had to go to the university campus can be known from anywhere using the internet through the website. Figure 2.1 Learning on the go 6. Social Communication Social communication works very well in e-learning systems. In the e-learning system, social interaction between teachers and students takes place in various ways. If a notice is issued, students can receive it from anywhere as a notification. Learn about different events. Learn about notifications, events, programs, classes, courses. Figure 2.2 Web Communication CHAPTER 3 USER RESEARCH 3.1 Target Users This website is made for student management. Since it is based on a specific department, the users are the people belonging to the department. For example, department teachers and students. Besides, any person can use this website to know about the department. In the case of employment, various company can use it to know about the student's work. So the main target people are students, teachers and educational persons who are active in using the website. 3.2 User Persona A user persona is a fact-based visual representation of a set of users that helps design teams envision, understand, and create relevant connections with target users. In the digital age, audiences are demanding user-oriented products. To respond to such needs, as a UX designer, one needs to know who the users are and what they like to give them a proper service. Even if our website addresses users from different backgrounds, there must be certain common points. User personas, also known as UX personas, are characters that will represent patterns covering these points. A number of user personas are created based on who we define as the target users for our project. Persona: 1 Arafat Hasan Age: 19 years old Occupation: Student Weight: 78 kg Arafat's story: Arafat has completed the SSC exam and HSC exam and will now join the university. He lives with his parents in Dhanmondi, Dhaka, he has a younger sister. He loves to eat and play computer games. What challenges Arafat: He is overweight for his age. But still he eats and drinks all the time and sits and plays computer games which increases his body weight. He does not like to walk at all. He gets tired after a short walk. What Arafat needs? Arafat needs to exercise regularly. Losing more body fat will make him more interested in his work. As he will get admission in the university, he can play games as well as gather information about the university and department of his choice. Figure 3.1: User persona Persona: 2 Sadin Biswas Age: 50 year's old Occupation: Businessman Sadin's story: He lives in Savar with his two daughters and wife. He has been suffering from diabetes for the past 12 years. Your elder daughter is a seventh semester student of MCT department of Daffodil International University. Her younger daughter is in Class 10 at Savar Girls School. His wife is a house wife. What challenges Sadin? He cannot give time to wife and children for business work. His business has to be under pressure. There are also debilitating diseases like diabetes. What Arafat needs? He should reduce work pressure, give time to family and stay stress free. Spend time with children and keep track of them. Persona: 3

Tori Noumi Age: 20 year's old Occupation: Students Tori's Story: Tari is the only daughter of her parents. He is now a six semester student of MCT department at Daffodil International University. She is very introverted. She is very proficient in her academic work. What challenge Tori: Since she is a student of MCT, she has been doing various creative works. But compiling those works doesn't make a portfolio. What Tori needs: Tori should create a portfolio by organizing the works and improving the portfolio by doing good works. Figure 3.2: User persona 2 3.3 Survey Questions Survey research is a unique way of collecting data [from a large group. Advantages of surveys include larger populations and therefore a greater statistical power, the ability to collect large amounts of data, and the availability of validated models.](#) At the beginning of our project design and project creation, we conduct a google survey for users. In which about fifty one people participated and gave their opinion. Through Google survey we collected various information and used it in our design and project. The Google Survey data is given below- 3.4 User Analysis 3.4.1 User Psychology [The psychology of web design includes how color, space in a design, and even typeface can affect a viewer's mood. These elements come into play with the sensory elements of web design to give](#) visitors a specific impression and feeling about your business and products. User psychology aims to understand the cognitive factors that influence how users interact with products. The end goal is to create products that users will love and are naturally easy to use. [UX psychology plays a big role in a user's experience with an application. By understanding how our designs are perceived, we can make adjustments so that the apps we build are more effective in achieving user goals.](#) Figure 3.3: Psychology to UX Design In UX, you're concerned with the emotional journey users take [when interacting with a product, service or system. When conducting user interviews and usability tests, you'll be able to leverage your psychology background to identify how users feel when interacting with a product. Design psychology is a combination of neuroscience, cognitive psychology, social psychology, and human-computer interaction that approaches user experience design through the lens of human behavior.](#) In terms of our website design, we have designed and built up the project keeping the above points in mind to determine the psychology of the users. 3.4.2 Geographical Psychology Geographical Philosophy For an online platform I think it is useful to think globally rather than being specific to a country. And it will work through an [online presence. An online presence can be defined by how easy it is to find a brand or company online. It is important to build brand reputation, increase brand awareness and provide visibility of products or services when users search for related keywords. Geographical psychology examines the connections between location and psychological phenomena, such as how and why personality traits, life satisfaction, and social behavior vary from place to place or cluster in specific areas. These differences may appear across hemispheres, regions, states, cities or neighborhoods. Each location has a psychologically diverse population. But simple differences between populations at individual locations can be](#) informative. 3.4.3 Education/ Culture Taking into account the culture of a population is essential to ensure a good design. Certain elements must be systematically taken into account because they will influence users' perception of a product. Figure 3.4: [Culture Influence Design. By gaining insight into the values of target culture, you'll also understand how they perceive certain design elements \(eg colors, symbols\). There are many cultural dimensions that influence these perceptions, which in turn influence your users' decision making. And because the power culture holds in how a society interprets how they view different elements of design, culture has been known to influence design for decades. Culture has the power to influence both the tangible, i.e. physical aspects, and the intangible, i.e. software/digital aspects of design. In addition to its intrinsic value, culture provides important social and economic benefits. Along with improved education and health, increased resilience, and opportunities to integrate with others, culture improves our quality of life and increases overall well-being for both individuals and communities.](#) 3.5 Features List Creation Website for MCT department · MCT Introduction · Career of MCT · Mission and vision · Programme goal · Lab facilities · Project resources · Faculty · Notices · Teacher's registration. Teacher will approved by admin. · Teachers can create their courses. · Teachers can upload their individual blogs. Students can access all the details. · Student registration. Student have to select their individual mentors. And, student will approved by his mentor. · Student can create their personal profile. · Student can upload their project and project details. · Everyone can access all the work from frontend. · There is a search option in frontend to find specific works from student's portfolio page. · Students can use their profile link as their CV after uploading all their work. · Student can create blogs as well. And, it will show up on blog sections and the specific students profile as well. · In backend, student can contact with their teacher by email. · There is a contact page. For any kinds of queries. And, it will deliver to admin directly. · Admin can approve and delete any teachers and student Or, he can keep the profile as pending. · And, a teacher can approve students and delete them as well if needed. CHAPTER 4 SYSTEM DESIGN 4.1 Requirement Collection and Analysis Requirements testing refers to program interfaces with other framework components that set up certain constraints. A software engineer sometimes expands the basic requirements into a recent prerequisite planning effort that licenses prerequisite testing. On the off chance that our project team falls short of gathering all the critical requirements for a structure or system, we face a huge problem. So, in such situations the prerequisites should be collected. An essential obligation of an extended group. Our extended waterfall display is used for progression. Highlight its exceptionally effective, original and easy to get since agreeing to our initiative. Figure 4.1 Waterfall Model 4.2 [Use Case Diagram A use case is a written description of how users will perform tasks on your website. It outlines, from a user's perspective, the behavior of a system when it responds to a request. Each use case is represented as a sequence of simple steps, starting with a user goal and ending when that goal is met. Use-case diagrams model the behavior of a system and help capture system requirements Use-case diagrams describe the high-level functions and scope of a system. These diagrams identify the interactions between the system and its actors.](#) Figure 4.2: [Use Case Diagram](#) for registered user We can divide the users of our website into two groups, 1. Registered

user and 2. Unregistered user. Registered users can login. After login they can create their profile. Can convert profile to portfolio. Like they can customize their profile with different tasks, block writing. Unregistered users can browse the website and get contact information. Figure 4.3: [Use Case Diagram for unregistered user](#) The above [use case diagram](#) is [for unregistered](#) users. They can see the website home page, contact, student profile, teachers profile, everything. These users can be any person who can use the website. 4.3 [Activity Diagram Activity diagrams are another important behavioral diagram in UML diagrams](#) for describing [the dynamic aspects of a system](#). Activity diagrams are essentially [an enhanced version of flow charts that model the flow from one activity to another](#). [An activity diagram shows business and software processes as a progression of actions. These actions can be carried out by humans, software components or computers. Activity diagrams are used to describe business processes and use cases as well as document the implementation of system processes.](#) Figure 4.4: Integrate Activity Diagram Figure 4.5: Activity Diagram for registered user This website is a department -centered. This is the Maine user of the website, which is their first state activity diagram. When you enter the web site, the users will have three panels. The first panel admin is the second teacher third Student. Figure 4.6: Activity Diagram for Admin We have tried to show a flow of proper work of admin panel from the above activity diagram. An instruction on how the admin of this website will work. Admin login will have a separate dash board. Admin can create courses, approve teachers and also manage all website tasks. Figure 4.7: Activity Diagram for Teacher The activity diagram above is the teachers work sequence. If the teacher registers on the website, the request for his approval will be sent to the admin panel, if the admin approves, a teacher profile will be created. The work of the teacher in the teacher panel can check the approval request of the students, update the personal profile, makes announcements on various topics. Figure 4.8: Activity Diagram for Student Here is a workflow of students through activity diagram. In case of login to the web site, a request notification will be given to the teacher for student approval. At this time, the login student will set up his mentor. Then after logging in, the student's approval request will go to the specified mentor. If Mentor or Teacher approves, student will get his profile, create portfolio, write blog, and edit them. CHAPTER 5 MY CONTRIBUTIONS 5.1 Concept Ever since I was a student in the Multimedia and Creative Technology Department, I have been thinking that it is very important for all of us to have a personal portfolio and everyone makes one. From there I thought a little differently and thought that we would have a portfolio and that it would be great if we could build our department identity through it. I think it's great that our department has a personal website where all our students have the opportunity to create personal portfolios. 5.2 Website build up We have used Visual Studio software for our website build up. Coding is done in HTML, CSS, JAVASCRIPT, BOOTSTRAP, PHP language. [PHP is one of the most popular programming languages for server-side web development](#). We [used](#) a PHP Framework Called Laravel. It's one of the popular frameworks in PHP to develop a site. We used laravel for backend development and all the CRUD operations we need. 5.2.1 HTML HTML implies hypertext markup language that is utilized to form electronic records which are shown on the www. Each and each page includes a development of relationships with various pages which are called hyperlinks. It may well be made a difference by headways, for occurrence, Cascading Fashion Sheets (CSS) and scripting vernaculars, for occurrence, JavaScript. [6] Figure 5.1: HTML coding 5.2.2 CSS The full meaning of CSS is cascading style sheets. I used CSS to design the whole website. Basically, css is used to create an html tag into our desired designs. like the color, padding, margin, text style and etc things of design things. To design something I call an HTML tag or class into our CSS file and write code for that specific class or tags to style anything into our document file. [7] 5.2.3 Bootstrap Bootstrap is a commonly known framework for web developers. It's basically for the front- end design. Here we can find all the important coding structures that are already pre maid. ad, what we are doing is just copying some of the codes and using it into our website to make a whole site. [8] In Bootstrap there are lots of pre-made coding structures already built. Thats why, we need to copy some relevant codes or sections and modify it using our own custom css to make the website look like our own designs. 5.2.4 Javascript [JavaScript is a high-level, interpreted programming language used](#) to create interactive web pages and web-based applications. It was first introduced in the mid-1990s as a way to add dynamic and interactive elements to static HTML pages. [9] JavaScript is commonly used for client-side scripting, which means that the code runs in a web browser and can modify the contents of a web page dynamically, in response to user actions and other events. For example, JavaScript can be used to add interactivity to forms, create animations and special effects, and implement features like drop-down menus and pop-up windows. JavaScript can also be used on the server-side, using frameworks like [Node.js](#), which [allows developers to write server-side code using](#) the same language they use on the client- side. JavaScript [is a widely used programming language, with a large community of developers](#) and a wealth of resources available online. It is also used in many other contexts beyond the web, such as desktop and mobile applications, game development, and server-side applications. On my project I use some javascript codes to create and customize some of the plugins i used on the website. 5.2.5 PHP [PHP is one of the most popular programming languages for server-side web development](#). It is [used in many frameworks and CSMs like WordPress, Laravel, Symfony and others](#) that [are behind a large part of the Internet](#). [Visual Studio is a powerful IDE, but its focus](#) is not aligned [with](#) certain [languages, PHP being one of them](#). Over [time, more languages](#) like Python and eventually PHP found their way into Visual Studio. [A Prague-based company called DEVSENSE has developed an extension](#) for Visual Studio [called PHP Tools](#) that [has been available in the Visual Studio ecosystem for over a decade](#). [PHP Tools for Visual Studio](#) has been [a paid extension](#) since its inception, [offering a free trial. Now, that has changed. DEVSENSE is releasing a large part of their offering as a free extension, leaving some features as paid](#). It [allows PHP developers to work in Visual Studio and take advantage of all the great things available](#). [10] Figure 5.2: Sample of visual studio code 5.2.6 Laravel [Laravel is a free, open-source PHP web application framework used for web](#)

development. It was created by Taylor Otwell in 2011 and has since grown to become one of the most popular PHP frameworks. Laravel provides developers with a set of tools and features to help them build web applications quickly and efficiently. Some of its key features include a powerful routing system, an expressive query builder, an elegant syntax, a robust authentication system, and built-in support for tasks like database migrations, unit testing, and caching. Laravel also has a large and active community of developers, which means that there are many third-party packages and libraries available to extend its functionality. The Laravel ecosystem includes a wide range of tools and resources, including documentation, tutorials, and online communities where developers can share ideas and help each other out. [11] Overall, Laravel is a powerful and flexible web application framework that can help 560 developers build robust and scalable web applications with ease. Mainly I used laravel on this project for most of the backend operations. because, it's more user friendly to use than raw PHP codes.

5.2.7 Database As the database of my site I used MySQL. A database is a structured collection of data that is organized and stored in a way that allows for efficient retrieval, management, and manipulation of the data. Databases are used to store and manage data in a wide range of applications and industries, including finance, healthcare, retail, and many others. A database typically consists of one or more tables, each of which contains rows and columns of data. The columns in a table represent the various attributes or properties of the data, while the rows represent individual records or instances of that data. The data in a database is often stored in a format that allows it to be easily queried and analyzed using specialized software called a database management system (DBMS). [12] There are several different types of databases, including relational databases, NoSQL databases, and graph databases, each of which is designed to handle different types of data and different use cases. Relational databases, for example, are the most common type of database and use tables with a defined schema to store data, while NoSQL databases are designed to handle unstructured or semi-structured data that does not fit well into a traditional table-based structure.

Figure 5.3: Databases 5.3 Functionalities The project titled "Research and development of education website and its usability" has a management system built with required functionalities. That one is something like a student management system. And there I built three dashboard including Admin Dashboard, Student dashboard and teachers' dashboard. Every dashboard has different functionalities to manage things.

5.3.1 Input Messages When someone enters the wrong password or email then it will show this following message. This will happen in every single form and input box. Figure 5.4: input messages

5.3.2 Newsletter Subscription Messages Figure 5.5: Subscription messages When someone enters their name, email and phone number to subscribe to the newsletter then it will show the success message that you subscribed successfully.

5.3.3 Course Dropdown Figure 5.6: Course dropdown Here this dropdown is a specific button. When someone clicks on that button then it will expand on these specific categories.

5.3.4 Teachers Creation Figure 5.7: Teachers creation When a teacher registers an account then it will directly appear here on that front end of the website.

5.3.5 Students Portfolio Figure 5.8: student work When a student uploads their work on their profile then it will appear on the main gallery page automatically.

5.3.6 Admin Control Panel Figure 5.9: Admin control panel After logging as an admin on the website, At first what comes in is the average overview of the functionality and enrolled students, teachers, category, courses and etc things. Figure 5.10: profile and option to sign out There is an option to edit the whole profile and option to sign out from the panel. When someone clicks on that edit option then he will get all the options to update his account informations like edit his name, upload pictures and etc etc things. Figure 5.11: Dashboard Also there are some other options to manage all of those things. Into that category option we can create categories for the website courses and after then courses means to create courses into those specific categories. Figure 5.12: specific categories When a specific student or teacher registers then it will show on the pending section and when someone then it will show on the active dropdown section. Figure 5.13: specific categories 2 On the contact button, here we can see all the contact messages people sent from the website. On that contact section there are options to delete the specific message or view the whole message by clicking on that eye button. Figure 5.14: delete the specific message On the blog section here we can see all the blogs that people have created and also have the option to create blogs as admin. Figure 5.15: Tools When someone created a specific blog then it will be shown to the front end directly and it will automatically show who has created that blog. Also, it will show the information like the categories. Like, when someone is creating a specific blog then he needs to select the category.

5.3.7 Teacher Control Panel Figure 5.16: Control panel After successfully login to the teachers control panel he will show the following options. Also he will get all the options shown on the following images to control.

5.3.8 Student Control Panel Figure 5.17: Student Control panel After successfully login to the student control panel he will get the options to upload his works easily. He will get the option to create his gallery and it will automatically show on his profile. Figure 5.18: Student profile That is how a student's Profile will look like on the front end. Here this details page will show his university ID and description he added from his admin panel. Also he can add His required portfolio links as well. Figure 5.19: Student profile That is how his gallery will look. When a student uploads any portfolio from his dashboard then it will be listed automatically here on his profile description. Also, this one will also be shown on the gallery page from the website. Figure 5.20: Student profile There will be a portion on the student details page called related blogs. Here, this page will show all the blogs he created as a student.

5.3.9 Students Portfolio Figure 5.21: Student portfolio This page will show all the works created by students. When someone uploads his portfolio then it will show his profile and it will also be listed on this gallery page as well. Figure 5.22: Search option There will be search options to find out related works of the students. This will help to find out related works for a job. When a company needs any people then he will come to this page and search on that page to find out his required people.

CHAPTER 6 FINAL CONSEQUENCE After all the struggle and hard work we were able to complete our project. We have developed a website that will work for the MCT department. All the facilities that we

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