# **School Management System**

#### $\mathbf{BY}$

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This Report Presented in Partial Fulfillment of the Requirements for the Degree of Masters of Science in Computer Science and Engineering

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DAFFODIL INTERNATIONAL UNIVERSITY DHAKA, BANGLADESH DECEMBER 2019

#### APPROVAL

This Project/Thesis titled "School Management System", submitted by Md. Jahid Hasan, 1D. No: 172-25-590 to the Department of Computer Science and Engineering, Daffodil International University has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of M.Sc. in Computer Science and Engineering and approved as to its style and contents. The presentation has been held on 06-12-2019.

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# DECLARATION I hereby declare that, this project has been done by us under the supervision of TANVII-SIDDIQUE, ASSISTANT TEACHER, Department of CSE Duffodil International University. I also declare that neither this project nor any part of this project has bee submitted elsewhere for award of any degree or diploma. Supervised by: Shah Md. Tanvir Siddique Assistant Professor Department of CSE Daffodil International University Submitted by: said (Md. Jahid Hasan) ID: -172-25-590 Department of CSE Daffodil International University @Daffodi International University

#### **ACKNOWLEDGEMENT**

First I express our heartiest thanks and gratefulness to almighty God for His divine blessing makes me possible to complete the final year project/internship successfully.

I really grateful and wish my profound our indebtedness to **Shah Md. Tanvir Siddique**, **Assistant Professor**, Department of CSE at Daffodil International University, Dhaka. Deep Knowledge & keen interest of our supervisor in the field of "*Field name*" 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 to Shah Md. Tanvir Siddique & Prof. Dr.Syed Akhter Hossain Head, Department of CSE, for his kind help to finish my project and also to other faculty member and the staff of CSE department of Daffodil International University.

I would like to thank our 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**

School management system is a software which is very helpful for the students, teachers, guardians, visitors & School authorities also. In the current system all the activities are done manually. Its very time consuming & costly. My school management system deals with the various activities related school, students, teachers, authorities & guardians. In this software it has Superadmin& under his authority everybody will control such as student, teachers, guardians, staffs etc. Overall School Management System website is a project to help the students as well as the teachers & staff to maintain the school in the best way possible.

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#### **CHAPTER 1**

#### INTRODUCTION

#### 1.1 Introduction

School Management System is a software which will be help to handle the whole activities of schools. Here you can add multiple school or college or university in one platform. SMS & Emails is the most powerful facilities nowadays. It provides many facilities such as stored all data of school. For example, tuition fee, exam, assignment, guardian feedback etc. It can generate many kinds of reports which are required by the management during working purpose.

#### 1.2 Motivation of work

In the case of reality of Bangladesh education system, still in village schools are working in old process like paper work or hand written. When people are going to comfortable with software then their work will be getting very easy because nowadays everyone has a smartphone so that they can easily browse this software from any web browser & on the other hand academic support person can easily store students, teachers, guardians all that information easily. It can save money & less time.

# 1.3 Objectives of the software

- 1. Everyone can operate it via computer/smartphone/tabs with the help of internet.
- 2. Student Information.
- 3. Parent Access. ...
- 4. Teacher Information. .
- 5. Artificial Intelligence Integration. ...
- 6. Communication Facilities (Voice Messaging, E-mail, Chats, etc) ...
- 7. Attendance & Timetable Management.
- 8. Payment Details

## 1.4Expected Outcome

This project is to develop that will be used in School activities like admit students, submit assignments, online exams, result publish, guardian feedback etc. I want make sure that all the person can get any kind of information regarding school. Students can view their result, attendance mark sheet no etc. On the other hand, guardian can get every information about his/her child. My plan was to make a tool so that the software can control multiple school & multiple school can connect to one server. And superadmin has the supreme power to handle all of the system.

#### 1.5 Report Layout

#### **Chapter 1: Introduction**

In this chapter I have discussed about the motivation, objectives and the expected outcome of the project.

#### **Chapter 2: Background**

I discuss about the background circumstances of my project. I will talk about the related work, comparison to other candidate systems, the scope of the problem and challenges of the project.

#### **Chapter 3: Requirement Specification**

This chapter is all about the requirements like business process modeling, the requirement collection and analysis, the use case model of the project and their description, the logical relational database model and the design requirements.

#### **Chapter 4: Design Specification**

In this chapter all the designs of the project. Front-end design, back-end design, interaction design and UX and the implementation requirements.

# **Chapter 5: Implementation and Testing**

This chapter contains the implementation of database, front-end designs, interactions and the test results of the project.

# **Chapter 6: Conclusion and Future Scope**

I will discuss about the conclusion and the scope for further developments which pretty much derive about the project.

#### **CHAPTER 2**

#### **BACKGROUND**

#### 2.1 Introduction

I have designed interactive software which can be operated in many devices through internet. In here teacher can attach assignment & students can view & submit the assignment. Not only students can see the exam mark, here guardian can also view & share their feedback and there is an option where students result can send directly to guardian contact no & email. They can view their attendance, payment due also.

#### 2.2 Related work

There is a lot of project is available nowadays. Most of the schools are now buy education erp so that they can store their school all information in software. My project are much similar like others but there is a big difference from others. In here you can add multiple school at a time. Schools and academic institutes are extensively using technology to nurture young talent and make every day functioning of the school a breeze. Essentially, a school management system involves student management, teacher management, and parent. It stores the database in an efficient manner, it student's performance, fees, exams, celebrations etc. happen with a gentle touch.

# 2.3 Comparative Studies

Such applications often offer many features that help to enhance the performance of schools with minimum efforts. School Management software does it by avoiding the manual paper works and automation of many academic and administrative activities. Now let us take a look at why institutes need to implement it.. My project are much similar like others but there is a big difference from others. In here you can add multiple school at a time.

# 2.4 Scope of the Problem

Only, people who are accustomed to regular use of smartphones or computers can operate this software. Extensive modules and features make it difficult for a user to utilize the application. With huge flow in traffic the application is prone to performance issues. Few companies market their products at extravagant price, which are not affordable by growing organizations. Absence of proper internet-network makes it difficult for a user to access information, which is a significant disadvantage. The risk of data mishandling might be bothersome; but all these drawbacks can be evaded by choosing proper, cost-efficient and best software that best benefits an organization.

# 2.5 Challenges

- Teacher has to define marks part by part.
- Secured database.
- There are no privacy level when it comes to posting or submitting assignments, exam mark.
- Internet Connectivity.
- Training & Monitoring.
- Data Migration.

#### **CHAPTER 3**

#### REQUIREMENT SPECIFICATION

# 3.1Business Process Modeling

Business process modeling (BPM) in systems engineering is the activity of representing processes of an enterprise, so that the current process may be analyzed or improved. BPM is typically performed by business analysts, who provide expertise in the modeling discipline; by subject matter experts, who have specialized knowledge of the processes being modeled; or more commonly by a team comprising both. Alternatively, the process model can be derived directly from events' logs using process mining tools. Redesigning a process and implementing it is not a speedy enterprise. It can take months and occasionally years, depending on the extent of the process and sub-processes, how many people and systems are involved and how much of it needs to be redesigned. I used a UML Use Case Model as a business process model.

# 3.2 Requirement Collection & Analysis

There are some basic requirements collected during implementation of the software and also in the data collection. Here are some given below

- Maintain Records
- Manage Student Attendance.
- Track Student Performance.
- Schedule Timetable.
- Fee Collection.
- Improve Communication.
- Library Management.
- Transport System.
- Hostel System.
- Account System.
- Add Multiple School.

# 3.3 Use Case Modeling and Description

A use-case diagram is the simplified and graphical representation of how system works. It has been said before that "Use case diagrams are the blueprints for your system.

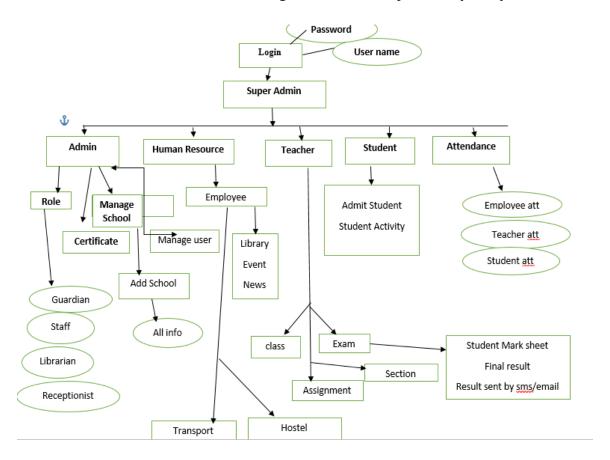


Figure 3.1: Use Case Model Diagram

# 3.3.1 Use Case Description

Table 3.1: Use case description of registration

Use Case	Login	
Primary Actor	Teacher, Student, Guardian, Staff	
Secondary Actor	Null	
Pre-condition	Null	
Scenario	<ul> <li>Enter valid full name</li> <li>Enter unique username</li> <li>Enter valid university id</li> <li>Enter valid email address</li> <li>Enter password minimum of 6 character</li> <li>Select a role</li> </ul>	
Post-condition	<ul><li>Registration successfully or failed</li><li>Edit profile</li></ul>	

Table 3.2: Use case description of profile setting

Use Case	Profile setting	
Primary Actor	Teacher, Student	
Secondary Actor	Null	
Pre-condition	Login	
Scenario	<ul> <li>Update profile photo</li> <li>Additional personal information</li> <li>Update skill/working field</li> </ul>	

Post-condition	•	Updated successfully or failed
	•	View profile

Table 3.3: Use case description of post assignment

Use Case	Create Assignment	
Primary Actor	Teacher	
Secondary Actor	Null	
Pre-condition	Login as a teacher	
Scenario	<ul> <li>Enter School Name</li> <li>Enter course name</li> <li>Enter section</li> <li>Enter Grade</li> <li>Enter course password</li> </ul>	
Post-condition	<ul> <li>Assignment created successfully or failed</li> <li>Attach file</li> <li>Edit file</li> <li>Delete file</li> </ul>	

Table 3.4: Use case description of submit assignment

Use Case	Submit assignment
Primary Actor	Student
Secondary Actor	Null
Pre-condition	Login, enrolled

Scenario	<ul> <li>Enter assignment title</li> <li>Enter assignments files</li> <li>Enter detail</li> </ul>
Post-condition	<ul> <li>Assignment created successfully or failed</li> <li>View assignment</li> <li>Ask questions</li> <li>Give answers</li> </ul>
Post-condition	<ul> <li>Assignment created successfully or failed</li> <li>View assignment</li> <li>Ask questions</li> <li>Give answers</li> <li>Justify answers</li> </ul>

Table 3.5: Use case description of marks

Use Case	Marks
Primary Actor	Teacher
Secondary Actor	Null
Pre-condition	Login, enrolled as a course creator
Scenario	<ul><li>Enter questions' evaluation mark</li><li>Enter defends' evaluation mark</li></ul>
Post-condition	<ul><li>View student's marks</li><li>View average marks of individual students</li></ul>

# 3.4 Logical Data Model

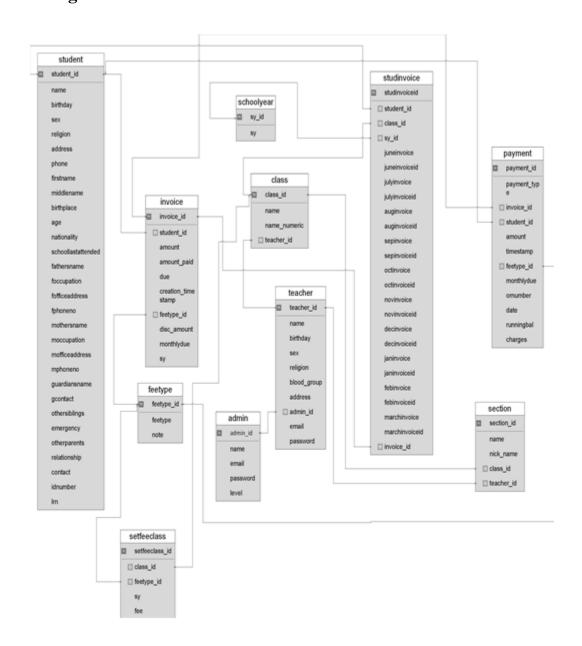


Figure 3.2: Logical Data Model

## 3.5 Design Requirements

#### 3.5.1 Functional Requirement for Student

- Student should be able to login the system.
- Student can upload their assignment.
- Student can view their result & exam mark.
- Student can select their transport route.
- Student can book a seat on hostel.

### 3.5.2Functional Requirement for Teacher

- Teacher should be able to login the system.
- Teacher can create course, section, upload exam mark, upload assignment, student attendance download.

#### 3.5.3Functional Requirement for Guardian.

- Guardian should be able to login the system.
- Create parent relationship with student.
- Can view their child activities.

#### 3.5.4 Functional Requirement for Super Admin.

- Staff should be able to login the system.
- Can Upload school activities in website.
- Can set Role permission for employee.
- Can view student, teacher & employee attendance.
- Can add multiple school.

#### **CHAPTER 4**

# **DESIGN SPECIFICATION**

# 4.1 Front-end Design

Front-end design is the representation of a software. This is the way of interaction way between the users and the servers. Front-end design is known as a client-side development. In the most aspect of a software development the most important part is to design the front-end. I created a simple front-end design for the users to co-operate with the software easily.

Here is some front-end design of our software given below.

#### **4.1.1 How to Start GMSMS**

For login to admin panel please follow the next steps:

- 1. Run the project path from any web browser like (http://www.yourdomain.com/).
- 2. Then you will see the following Login Screen.
- 3. Enter your username (superadmin) and password (123456).
- 4. Then Click to "Log in" Button.



Figure 4.1: Login

#### 4.1.2 Lost/Reset Password

For Lost password & recover password please follow the next steps:

- 1. From login screen please click **Lost Password**.
- 2. Then you will see another Screen.
- 3. Enter your user email & Then Click to "Send" Button.

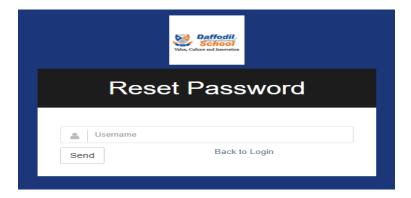


Figure 4.2: Reset Password

#### 4.1.3 Dashboard

For view dashboard statistics please follow the next steps:

- 1. Run the project path from any web browser like (http://www.yourdomain.com/).
- 2. Then you will see the following Login Screen.
- 3. Enter your username (superadmin) and password (123456).
- 4. Then Click to **Log in** Button.



Figure 4.3: Dashboard.

# 4.1.4 Settings (Admin Only)

#### 1. University Settings

For University Setting please follow the next steps:

- 1. Login to **System Admin** Panel.
- 2. Select **University Setting** sub menu under **Setting** menu from left side bar.
- 3. Fill up all required fields as per expected value/data. Then Click to **Update** Button.

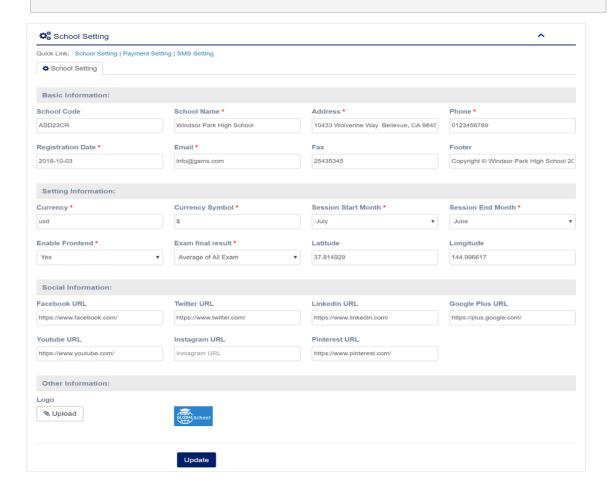


Figure 4.4: Settings

#### 4.1.5 Administrator

#### System Administrator

User Role (ACL) (Super Admin Only)

For manage User Role please follow the next steps:

- 1. Login to **System Admin** Panel.
- 2. Select **User Role** sub menu under **Administrator** menu from left side bar.
- 3. To add/create new **User Role**click**Add Role** tab.
- 4. To edit **User Role**, Click **Edit** button in the User Role list.
- 5. To Delete **User Role**, Click **Delete** button in the User Role list.



Figure 4.5: System Administrator.

# 4.1.6 Payment Settings

- 1. Login to **System Admin** Panel.
- 2. Select **Payment Setting** sub menu under **Setting** menu from left side bar.
- 3. Fill up all required fields as per expected value/data. Then Click to **Update** Button.

# 4.1.7 SMS Settings

For SMS Setting please follow the next steps:

- 1. Login to **System Admin** Panel.
- 2. Select **SMS Setting** sub menu under **Setting** menu from left side bar.
- 3. Fill up all required fields as per expected value/data. Then Click to **Update** Button.

# 4.1.8 Role Permission Setting (ACL) (Super Admin Only)

For manage Role Permission please follow the next steps:

- 1. Login to **System Admin** Panel.
- 2. Select **Role Permission** sub menu under **Administrator** menu from left side bar.
- 3. To setting **Role Permission** click **Role Permission Setting** button in the User Role list.
- 4. Then check as per your expectation permission from the **Edit Role Permission** form
- 5. After check all expected checkbox click **Update Role Permission** button.

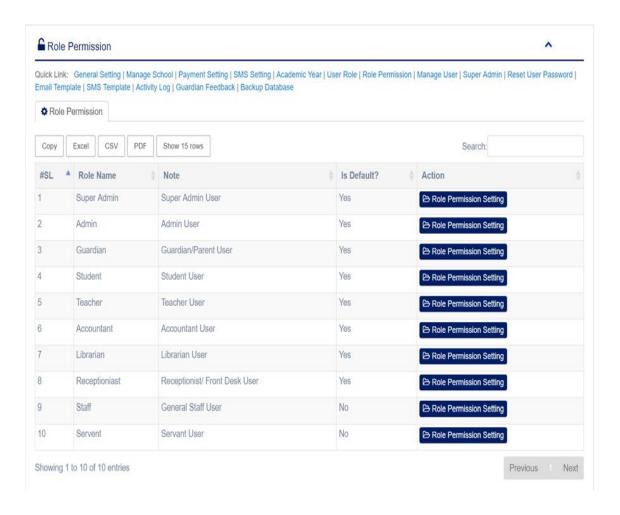


Figure 4.6: User Role Permission.

## 4.1.9 Manage Email Template

For manage Email Template please follow the next steps:

- 1. Login to **System Admin** Panel.
- 2. Select **Email Template** sub menu under **Administrator** menu from left side bar.
- 3. To add/create new **Email Template** click **Add Email Template** tab.
- 4. To edit **Email Template**, Click **Edit** button in the Email Template list.
- 5. To Delete Email Template, Click Delete button in the Email Template list.



Figure 4.7Manage Email Template

# 4.1.10 Manage SMS Template

For manage SMS Template please follow the next steps:

- 1. Login to **System Admin** Panel.
- 2. Select **SMS Template** sub menu under **Administrator** menu from left side bar.
- 3. To add/create new **SMS Template** click **Add SMS Template** tab.
- 4. To edit SMS Template, Click Edit button in the SMS Template list.
- 5. To Delete **SMS Template**, Click **Delete** button in the SMS Template list.

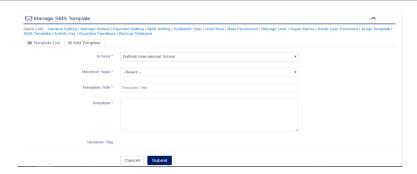


Figure 4.8: Manage SMS Template

# 4.1.11 Manage Activity Log

For manage User Activity Log please follow the next steps:

- 1. Login to **System Admin** Panel.
- 2. Select **Activity Log** sub menu under **Administrator** menu from left side bar.
- 3. To Delete Activity Log Click Delete button in the Activity Log list.

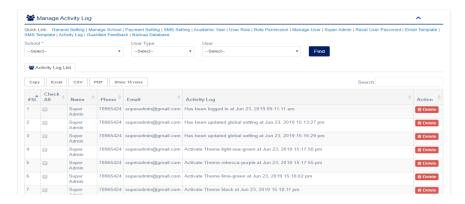


Figure 4.9 Manage Activity Log

## 4.1.12 Manage Guardian Feedback

For manage Guardian Feedback please follow the next steps:

- 1. Login to **System Admin** Panel.
- 2. Select **Publish Guardian Feedback** sub menu under **Administrator** menu from left side bar.
- 3. To Delete **Guardian Feedback** Click **Delete** button in the Guardian Feedback list.
- 4. To Publish/unpublished **Guardian Feedback** Click **Publish Now/ Unpublished Now** button in the Guardian Feedback list.



Figure 4.10 Guardian Feedback

# **4.1.13 Backup Database**

For Backup Database please follow the next steps:

- 1. Login to **System Admin** Panel.
- 2. Select **Backup** sub menu under **Administrator** menu from left side bar.
- 3. Then select **User Type & User** and fill up **Password & Confirm Password** Field with expected value.
- 4. Then click **Update** button to reset user password.



Figure 4.11: Database Backup

# 4.1.14 Employees

For Manage Employee please follow the next steps:

- 1. Login to **System Admin** Panel.
- 2. Select **Manage Employee** sub menu under **Human Resource** menu from left side bar.
- 3. To Add/Create new **Employee** click **Add Employee** tab.
- 4. To Edit **Employee** Click **Edit** button in the Employee list.
- 5. To Delete **Employee**, Click **Delete** button in the Employee List.

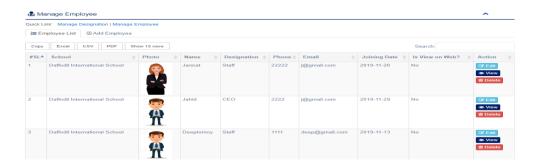


Figure 4.12:Employees

#### **4.1.15** Teachers

- 1. Login to **System Admin** Panel.
- 2. Select **Teacher** menu from left side bar.
- 3. To Add/Create new **Teacher** click **Add Teacher** tab.
- 4. To Edit **Teacher** Click **Edit** button in the Teacher list.
- 5. To Delete **Teacher**, Click **Delete** button in the Teacher List.



Figure 4.13: Teacher

# **4.1.16 Classes**

For Manage Classes please follow the next steps:

- 1. Login to **System Admin** Panel.
- 2. Select Class menu from left side bar.
- 3. To Add/Create new Class click Add Class tab.
- 4. To Edit Class Click Edit button in the Class list.
- 5. To Delete Class, Click **Delete** button in the Class List.

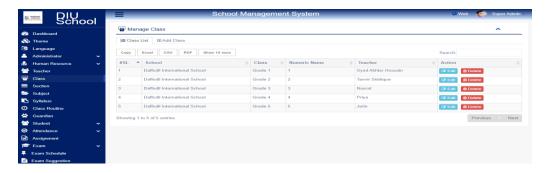


Figure 4.14: Class

#### **4.1.17 Section**

For Manage Section please follow the next steps:

- 1. Login to **System Admin** Panel.
- 2. Select **Class** sub menu under **Section** main menu from left side bar.
- 3. To Add/Create new **Section** click **Add Section** tab. To Edit **Section** Click **Edit** button in the Section list.
- 4. To Delete **Section**, Click **Delete** button in the Section List.



Figure 4.15: Section

# **4.1.18 Subject**

For Manage Subject please follow the next steps:

- 1. Login to **System Admin** Panel.
- 2. Select **Class** sub menu under **Subject** main menu from left side bar.
- 3. To Add/Create new **Subject** Click **Add Subject** tab. To Edit **Subject** Click **Edit** button in the Subject list.

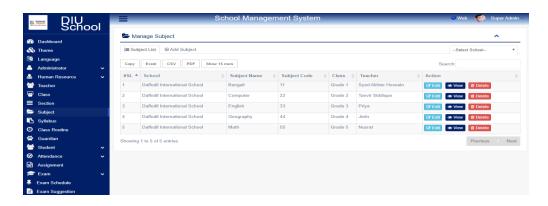


Figure 4.16: Subject

# **4.1.19 Syllabus**

For Manage Syllabus please follow the next steps:

- 1. Login to **System Admin** Panel.
- 2. Select Class sub menu under Syllabus main menu from left side bar.
- 3. To Add/Create new Syllabus click Add Syllabus tab.
- 4. To Delete Syllabus, Click Delete button in the Syllabus List.

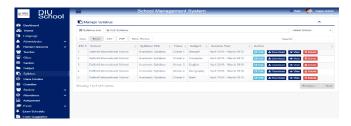


Figure 4.17: Syllabus

#### 4.1.20 Class Routine

- 1. Login to **System Admin** Panel.
- 2. Select Class sub menu under Class Routine main menu from left side bar.
- 3. To Add/Create new Class Routine click Add Class Routine tab.
- 4. To Edit Class Routine Click Edit button in the Class Routine list.
- 5. To Delete Class Routine, Click Delete button in the Class Routine List.



Figure 4.18: Class Routine

#### 4.1.21 Guardian

For Manage Guardian please follow the next steps:

- 1. Login to **System Admin** Panel.
- 2. Select Guardian main menu from left side bar.
- 3. To Add/Create new Guardian click Add Guardian tab.
- 4. To Edit Guardian Click Edit button in the Guardian list.
- 5. To Delete Guardian Click Delete button in the Guardian List.



Figure 4.19: Guardian

#### **4.1.22 Student**

#### a. Manage Student

For Manage Student please follow the next steps:

- 1. Login to **System Admin** Panel.
- 2. Select **Student** sub menu under **Student** main menu from left side bar.
- 3. To Add/Create new **Student** click **Add Student** tab.
- 4. To Edit Student Click Edit button in the Student list.
- 5. To Delete **Student**, Click **Delete** button in the Student List.



Figure 4.20: Student

#### b. Admit Student

For Admit Student please follow the next steps:

- 1. Login to **System Admin** Panel.
- 2. Select Admit Student sub menu under Student main menu from left side bar.
- 3. To Add/Create new Student Please fill up the form and click submit button.

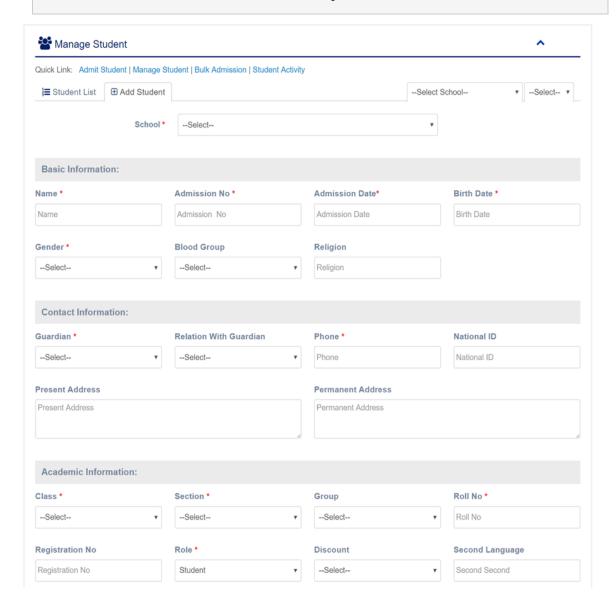


Figure 4.21: admit student

## 4.1.23 Attendance

### a. Student Attendance

For Student Attendance please follow the next steps:

- 1. Login to **System Admin** Panel.
- 2. Select **Student Attendance** sub menu under **Attendance** main menu from left side bar.
- 3. Then choose Class, Section & Date Then Click Find button to get student list.
- 4. To Manage Student Attendance, check for Present All or Late All or Absent All



Figure 4.22: Student attendance

#### b. Teacher Attendance

- 1. Login to **System Admin** Panel.
- 2. Select **Teacher Attendance** sub menu under **Attendance** main menu from left side bar.
- 3. Then choose **Date** and click **Find** button to get Teacher list
- 4. To Manage **Teacher Attendance**, check for Present All or Late All or Absent All.

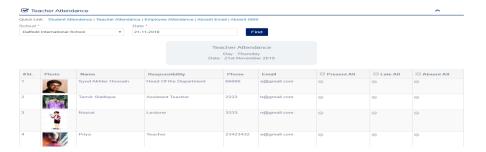


Figure 4.23: Teacher attendance

### c. Employee Attendance

For Employee Attendance please follow the next steps:

- 1. Login to **System Admin** Panel.
- 2. Select **Employee Attendance** sub menu under **Attendance** main menu from left side bar.
- 3. Then choose **Date** and click **Find** button to get Employee list
- 4. To Manage **Employee Attendance**, check for Present All or Late All or Absent All

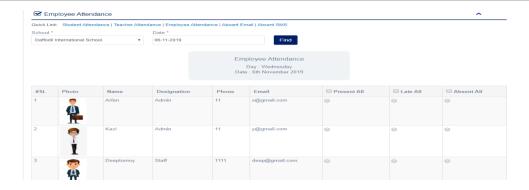


Figure 4.24: Employee attendance.

# 4.1.24 Assignment

- 1. Login to **System Admin** Panel.
- 2. Select Class sub menu under Assignment main menu from left side bar.
- 3. To Add/Create new **Assignment** click **Add Assignment** tab.
- 4. To Edit **Assignment** Click **Edit** button in the Assignment list.
- 5. To Delete **Assignment**, Click **Delete** button in the Assignment List.

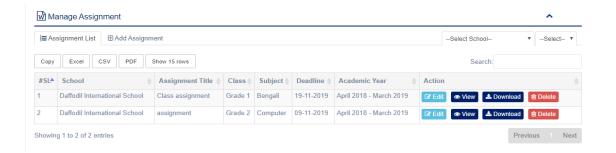


Figure 4.25: Assignment

#### 4.1.25 Exam

#### a. Exam Grade

For Manage Exam Grade please follow the next steps:

- 1. Login to **System Admin** Panel.
- 2. Select **Exam Grade** sub menu under **Exam** main menu from left side bar.
- 3. To Add/Create new **Exam Grade** click **Add Exam Grade** tab.
- 4. To Edit Exam Grade Click Edit button in the Exam Grade list.
- 5. To Delete Exam Grade, Click Delete button in the Exam Grade List.

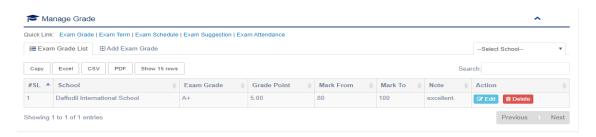


Figure 4.26: Exam Grade

#### **b.** Exam Final Result

For Manage Exam Final Result Sheet please follow the next steps:

- 1. Login to **System Admin** Panel.
- 2. Select **Exam Final Result** sub menu under **Exam Mark** main menu from left side bar.
- 3. To Manage Exam Final Result select (University), Class, Section.
- 4. Then click **Find** button to get Student list. Fill up the form with correct data/value and click **Submit.**



Figure 4.27: Exam Final Result

#### c. Student Mark Sheet

For Manage Student Mark Sheet please follow the next steps:

- 1. Login to **System Admin** Panel.
- 2. Select Student Mark Sheet sub menu under Mark main menu from left side bar.
- 3. To Manage Mark Sheet select (University), Exam, Class, Section & Student.
- 4. Then click **Find** button to get Student Subject list.
- 5. Fill up the form with correct data/value and click **Submit.**



Figure 4.28: Student Mark Sheet

## 4.1.26 Generate Certificate

For Generate Certificate please follow the next steps:

- 1. Login to **System Admin** Panel.
- 2. Select **Generate Certificate** sub menu under **Certificate** main menu from left side bar.
- 3. To **Generate Certificate**, select class and certificate type and then click find.
- 4. Then click **Generate** button to **Generate** student specific Certificate.



Figure 4.29: Certificate

## **4.1.27** Library

## a. Manage Book

For Manage Mark please follow the next steps:

- 1. Login to **System Admin** Panel.
- 2. Select Book sub menu under Library main menu from left side bar.
- 3. To Add/Create new **Book** click Add Book tab.
- 4. To Edit **Book** Click Edit button in the **Book** list.
- 5. To Delete Book Click Delete button in the Book List.

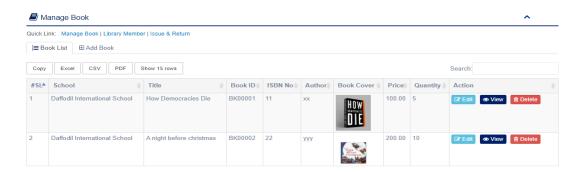


Figure 4.30: Library stock

## b. Library Member

For Manage Library Member please follow the next steps:

- 1. Login to **System Admin** Panel.
- 2. Select Library Member sub menu under Library main menu from left side bar.
- 3. To Add New Library Member, click Non Member List tab.
- 4. Then click **Add Library Member** button to get add **Library Member**.
- 5. To Delete Library Member, click delete button from Member List tab.



Figure 4.31: Library Member

## c. Issue & Return

For Manage Issue & Return please follow the next steps:

- 1. Login to **System Admin** Panel.
- 2. Select **Issue & Return** sub menu under **Library** main menu from left side bar.
- 3. To Issue new **Book** click **New Issue** tab.
- 4. To Return Book Click Return This button in the Issue List.

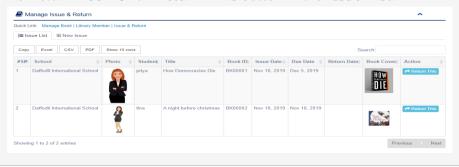


Figure 4.32: Issue & return

# 4.1.28 Transport

## a. Manage Vehicle

For Manage Vehicle please follow the next steps:

- 1. Login to **System Admin** Panel.
- 2. Select Manage Vehicle sub menu under Transport main menu from left side bar.
- 3. To Add/Create new **Vehicle** click **Add Vehicle** tab. To Edit **Vehicle** Click Edit Button **Vehicle list.**
- 4. To Delete Vehicle, Click Delete button in the Vehicle List.

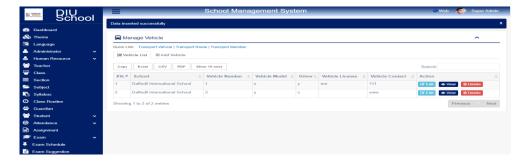


Figure 4.33: Manage Vehicle

### **b.** Transport Route

For Manage Transport Route please follow the next steps:

- 1. Login to **System Admin** Panel.
- 2. Select **Transport Route** sub menu under **Transport** main menu from left side bar.
- 3. To Add/Create new **Transport Route** Click **Add Transport Route** tab.
- 4. To Edit Transport Route Click Edit button in the Transport Route list.
- 5. To Delete **Transport Route** Click Delete button in the **Transport Route** List.



Figure 4.34: Transport Route

## c. Transport Member

For Manage Transport Member please follow the next steps:

- 1. Login to **System Admin** Panel.
- 2. Select **Transport member** sub menu under **Transport** main menu from left side bar.
- 3. To add member, **Select Route** Click **Add to Transport** tab.
- 4. To Delete **Transport Member** Click Delete button in the **Transport Member**List.

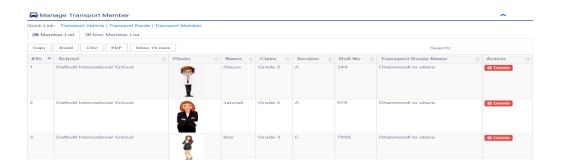


Figure 4.35: Transport member

## **4.1.29 Hostel**

## a. Manage Hostel

For Manage Hostel please follow the next steps:

- 1. Login to **System Admin** Panel.
- 2. Select Manage Hostel sub menu under Hostel main menu from left side bar.
- 3. To Add/Create new **Hostel** click **Add Hostel** tab.
- 4. To Edit **Hostel** Click Edit button in the **Hostel** list.
- 5. To Delete **Hostel**, Click Delete button in the **Hostel** List.

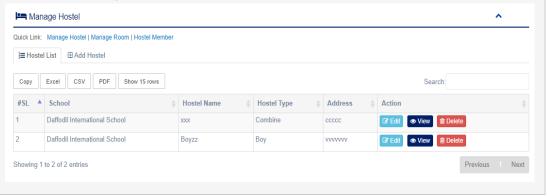


Figure 4.36: Hostel Type

## b. Manage Room

For Manage Room please follow the next steps:

- 1. Login to **System Admin** Panel.
- 2. Select Manage Room sub menu under Transport main menu from left side bar.
- 3. To Add/Create new **Room** click **Add Room** tab.
- 4. To Edit **Room** Click Edit button in the **Room** list.
- 5. To Delete **Room** Click Delete button in the **Room** List.



Figure 4.37: Room

#### c. Hostel Member

For Manage Hostel Member please follow the next steps:

- 1. Login to **System Admin** Panel.
- 2. Select **Hostel Member** sub menu under **Hostel** main menu from left side bar.
- 3. To Add New Hostel Member, click Non Member List tab.
- 4. Then click **Add Hostel** button to get add **Hostel Member**.
- 5. To Delete **Hostel Member**, click delete button from **Member List** tab.



Figure 4.38: Members of hostel.

## **4.1.30** Message

- 1. Login to **System Admin** Panel.
- 2. Select **Message** main menu from left side bar & Click **Compose** button to write new message.
- 3. Click **Inbox** button to see incoming message & Click **Send** button to see outgoing message.
- 4. Click **Draft** button to see Drafts message & Click **Trash** button to see Trashed message.

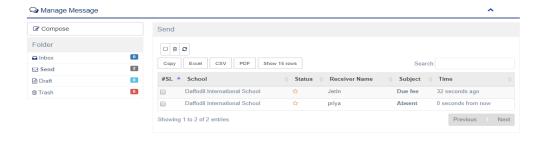


Figure 4.39: Message

## 4.1.31 Mail & SMS

## a. Manage General Email

For Manage Email please follow the next steps:

- 1. Login to **System Admin** Panel.
- 2. Select **Email** sub menu under **Mail & SMS** main menu from left side bar.
- 3. To send new **Email** Click **Send Email** tab.
- 4. To View **Email** Click View button in the **Email** list.
- 5. To Delete Email Click Delete button in the Email List.



Figure 4.40: Email

## **b.** Manage General SMS

- 1. Login to **System Admin** Panel.
- 2. Select SMS sub menu under Mail & SMS main menu from left side bar.
- 3. To send new **SMS** click **Send SMS** tab.
- 4. To Delete SMS, Click Delete button in the SMS List.
- 5. You are done with **Manage SMS** feature.



Figure 4.41: SMS

## 4.1.32 Announcement

## **Manage Notice**

For Manage Notice please follow the next steps:

- 1. Login to **System Admin** Panel.
- 2. Select **Notice** sub menu under **Announcement** main menu from left side bar.
- 3. To Add/Create new **Notice** click **Add Notice** tab.
- 4. To View **Notice** Click View button in the **Notice** list.
- 5. To Edit Notice Click Edit button in the Notice list.
- 6. To Delete Notice Click Delete button in the Notice List.

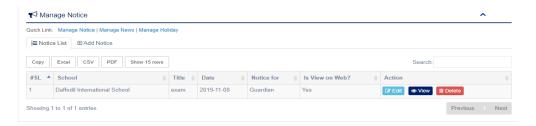


Figure 4.42: Notice

# **4.1.33 Payroll**

### Manage Salary Grade

- 1. Login to **System Admin** Panel.
- 2. Select Salary Grade sub menu under Payroll main menu from left side bar.
- 3. To Add/Create new **Salary Grade** click Add Salary Grade tab.
- 4. To Edit Salary Grade Click Edit button in the Salary Grade list.
- 5. To Delete Salary Grade Click Delete button in the Salary Grade List.
- 6. You are done with **Manage Salary Grade** feature.

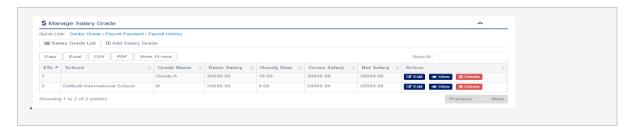


Figure 4.43: Salary Grade

# 4.2 Back-end Design

The best part of a software happened in the back-end. It is the most crucial part of a software. The whole system depends on it. Usually back-end refers server side. In back-end there are many factor consists like the scripting languages or the server side language, automated framework, database management, security, authentication, authorization, data parsing, data validating, data backups and so on. I developed "School Management System" using codeigniter PHP framework, HTML, CSS which is a server side framework, in here all the logical thing and the hosting site provide us the MySQL database for saving the data information and the work flow of the software. In hosting we got a neat cPanel which has the all the access panel organized.

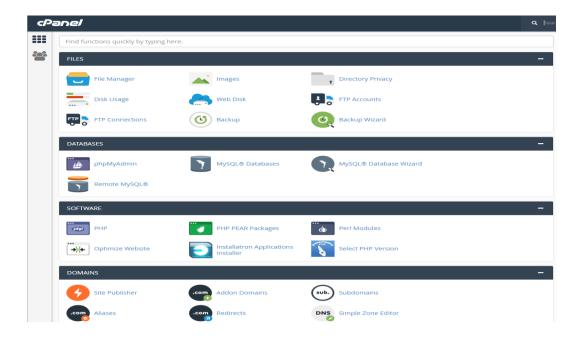


Figure 4.45: Cpanel

In the File Manager section all the written code files and the files comes with the PHP framework exists and the files of user will upload those also be uploaded in here

The system of relational database based on PHP conventional Database.

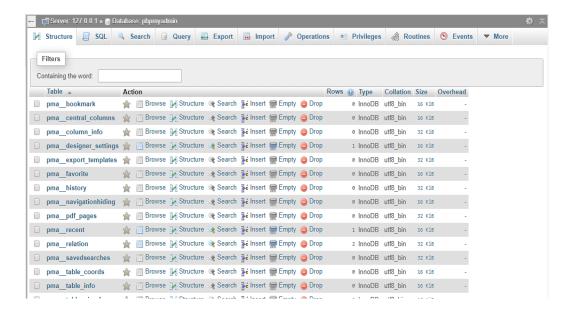


Figure 4.46: Database tables in phpMyadmin

# 4.3 Interaction Design and UX

I designed this web software using php framework. That help me to design a better visual for the users and it is also responsive in many formats. "The process of enhancing user satisfaction with a product by improving the usability, accessibility, and pleasure provided in the interaction with the product. Designers focus on creating engaging web interfaces with logical and thought out behaviors and actions. Successful interactive design uses technology and principles of good communication to create desired user experiences"

# **4.4 Implementation of Requirements**

- The design needed to implement in web programming language PHP MVC framework.
- Preferred Database is MySQL.
- Hosting platform have to Linux based server.
- Schedule wise backup from server (Both source code and Database).
- Failed log in needed to store in database.
- SQL injection needed to protect with string escaping.
- Form validation needed using java-script before server site validation.
- CROS-SITE-SCRIPTING needed to verify.
- Unauthorized attach needed to prevent with maximum attach limit.
- Invalid data input should display error message.
- For specific design jquery needed to be implemented.
- In front end design bootstrap framework is needed.

### CHAPTER 5

#### IMPLEMENTATION AND TESTING

## **5.1 Implementation of Database**

### After login Super Admin have to do following things

- 1. General/Diu Setting from Left Menu->Administrator->General Setting
- 2. Create School from Left Menu->Administrator->Manage University
- 3. Set user Role/Type wise access permission from Left Menu->Administrator->Role Permission(ACL) -> Role Permission Setting
- 4. Create Designation from Left Menu->Human Resource->Designation
- 5. Create Salary Grade from Left Menu->Payroll->Salary Grade
- 6. Create Employee with Role Admin for the Specific University from Left Menu->Human Resource->Employee
- 7. After create employee with admin role then set Role Permission for the Admin of the specific University
- 8. Then University Admin can do everything for his/her University

## Step by Step Data Input Process: -

For smooth use of the software please follow the following data input process. These process will make your software organized to data manipulation. You must follow these data input sequence.

- 1. Login to System using default super admin user credentials: Email: superadmin Password: 123456
- 2. Set your Brand General/Global Setting from Left Menu->Administrator->General Setting
- 3. Create **University** as per your need/requirements. **Left Menu->Administrator->Manage University**
- 4. Create **Academic Year** as per your University requirements. **Left Menu->Administrator->Academic Year**
- 5. Manage/Create **SMS Setting** data for sending SMS. **Left Menu->Administrator->SMS Setting {For Super Admin}**
- Manage/CreateSMS Setting data for sending SMS. Left Menu->Setting->SMS Setting {Except Super Admin}

- 7. Manage/Create **Payment Setting** data for manage online payment. **Left Menu->Administrator->Payment Setting {For Super Admin}**
- 8. Manage/Create **SMS Setting** data for manage online payment. **Left Menu->Setting->Payment Setting {Except Super Admin}**
- 9. Create/Input **Designation** data for Manage Employee. **Left Menu->Human Resource->Designation**
- 10. Create/Input **Salary Grade** data for Manage Payroll/Employee. **Left Menu-** >**Payroll-**>**Salary Grade**
- 11. Create/Input **Employees** data as per your University requirements and for create University admin. **Left Menu->Human Resources->Employees**
- 12. Update each User Type **Role Permission** as per your University requirements. **Left Menu->Administrator->Role Permission->Role Permission Setting**
- 13. Create/Input **Teachers** data as per your University requirements. **Left Menu- >Teacher**
- 14. Create/Input Class data as per your University requirements. Left Menu->Class
- 15. Create/Input **Section** data as per your Class & University requirements. **Left Menu-Section->Class**
- 16. Create/Input **Subject** data as per your Class & University requirements. **Left Menu-Subject->Class**
- 17. Create/Input **Syllabus** data as per your Class & University requirements. **Left Menu->Syllabus->Class**
- 18. Create/Input Class Routine data as per your Class & University requirements. Left Menu->Class Routine->Class
- 19. Create/Input **Discount** data as per your University requirements. **Left Menu->Accounting->Discount**
- 20. Create/Input Guardian data before input Student data. Left Menu->Guardian
- 21. Create/Input Student data. Left Menu->Student->Student Class
- 22. Manage Student/Teacher/Employee Attendance. Left Menu->Attendance->Student Attendance/ Teacher Attendance/ Employee Attendance
- 23. Create/Input Assignment data for student. Left Menu->Assignment {Class Wise}
- 24. Create/Input **Exam Grade** data as per University requirements. **Left Menu-** >**Exam-**>**Exam Grade**
- 25. Create/Input **Exam Term** data as per University requirements. **Left Menu->Exam->Exam Term**
- 26. Create/Input Exam Schedule data. Left Menu->Exam Schedule->Class
- 27. Create/Input Exam Suggestion data. Left Menu->Exam Suggestion->Class
- 28. Create/Input Exam Attendance data. Left Menu->Exam Attendance
- 29. Manage Exam Mark data. Left Menu->Exam Mark->Manage Mark
- 30. Manage Exam Term Result data. Left Menu->Exam Mark->Exam Term Result
- 31. Manage **Exam Final Result** data. **Left Menu->Exam Mark->Exam Final Result**© Daffodil International University

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- 32. Manage Exam Merit List data. Left Menu->Exam Mark->Exam Merit List
- 33. Manage Exam Mark Sheet data. Left Menu->Exam Mark->Student Mark Sheet
- 34. Manage Student Result Card data. Left Menu->Exam Mark->Student Result Card
- 35. Process **Student Promotion** to the next class after process all above data. **Left Menu->Promotion**
- 36. Create/Input Certificate Type data. Left Menu->Certificate->Certificate Type
- 37. Generate **Certificate** for a student. **Left Menu->Generate Certificate** Then filter and Generate a Certificate and print
- 38. Create/Input/Process **Salary Payment** data for Employee/Teacher. **Left Menu-** >**Payroll-**>**Salary Payment** Then filter employee/teacher and put payment
- 39. Create/Input **Fee Type** data for Manage class wise Student Fee. **Left Menu-** >**Accounting->Fee Type**
- 40. Create/Input **Fee Type** data for Manage class wise Student Fee. **Left Menu-** >**Accounting->Fee Type**
- 41. Create/Input data for collect student fee. **Left Menu->Accounting->Fee Collection**[Admission Fee/ Monthly Tution Fee/ Hostel Fee/ Transport Fee etc]
- 42. Create/Input **Expenditure Head** data for Manage Expenditure. **Left Menu-** >**Accounting->Expenditure Head/Expenditure**
- 43. Create/Input **Invoice** data for manage/collect all kinds of Payment from student. **Left Menu->Accounting->Create Invoice**
- 44. After Create/Input Employee/ Teacher/ Guardian & Student data please activate them to login. Left Menu->Administrator->Manage User, Then filter User and activate them
- 45. For Manage Frontend Website Basic Info. Please fill out all data in University information Left Menu->Administrator->manage University {For super admin}
- 46. For Manage Frontend Website Basic Info. Please fill out all data in University Information Left Menu->Administrator->manage University {Except super admin}
- 47. For Manage Frontend Slider data. **Please input/manage Slider Left Menu->Frontend->Manage Slider**
- 48. For Manage Frontend Welcome/About data. **Please update Left Menu->Frontend->Frontend About**
- 49. For Manage Frontend Events data. Please manage events Left Menu->Events
- 50. For Manage Frontend News data. **Please manage news Left Menu-> Announcement ->Manage News**
- 51. For Manage Frontend Notice data. **Please manage Notice Left Menu-> Announcement ->Manage Notice**

- 52. For Manage Frontend Holiday data. **Please manage Holiday Left Menu-> Announcement ->Manage Holiday**
- 53. For Manage Frontend Gallery data. Please manage Gallery Left Menu-> Media Gallery -> Manage Gallery and Image
- 54. You are done with main feature.

## 5.2 Implementation of Front-end Design

It's very difficult to make a simple UI design for the users, I try make as simple as possible. Nowadays, there are many devices like smart mobile, tablets, desktop, 4k desktop etc. I make my website responsive so that user can visit from different devices with a marginable scale of the website and easily interact. We make interface relative and standard with the help of HTML, CSS, JavaScript and JQuery technologies.

There are some factors of implementing the front-end design are given below

- There will be Five types of users like Admin, Teacher, Staff, Guardian and Student
- Every types of user must be registered by filling up the required information fields.
- User can login using their registered email and password.
- User can reset password by filling up the form of forget password.
- For updating user profile, user must enter the password for the security purpose.

## **5.3 Implementation of Interactions**

Here to make This system (School Management System) I've implemented responsive UI for better user experience. In the cases make things easy i use icon, text link and button. The system design of our web software is user friendly. Everyone Admin, Staff, Guardian, teachers and students will need to create profile for the access.

# **5.4 Testing Implementation**

Testing implementation is process of testing upcoming implementation of a system, where tester or system architect will see cases and specification, is it implementable or have limitations.

Table 5.1: Test case evaluation

Test Case	<b>Test Input</b>	Expected outcome	Obtained outcome	Pass / fail	Tested on
1. Login	Login via various devices such as tablet, pc ,cell phones	Successfully login	Successfully login	Pass	2-11-19
2. Registration	Empty first name, last name, password	Show restriction to Fill all the fields	Fields must be filled by data	Pass	2-11-19
3. Password	Incorrect password or empty field	Warn the incorrect password or field is empty	Show warning	Pass	2-11-19
4. Profile settings	View profile, Update profile	Show and update profile information	Show and update information successfully	Pass	2-11-19
5. Course enroll	Input password	Enrolled under course	Course enrolled successfully	Pass	2-11-19
6. Submit assignment	Input file	Added file into assignment	File added successfully	Pass	2-11-19
7. Ask question & give answers	Fill form of ask question, click button for give answers	show asked questions and show answers	Viewed in the respective assignments questions and answers	Pass	2-11-19
8. Marks	Give marks to	Show the given	Viewed in the	Pass	2-11-19

	the students between 1-10	marks	respective assignments		
9. Marks Evaluation	All marks of students of the respective assignments	Show the individual students calculated marks	Calculated average marks and single mark viewed	Pass	2-11-19
10. Create post	Input course title	Course has been created	Course created successfully	Pass	2-11-19
11. Logout	Click logout button	Logout from the account	Logged out successfully	Pass	2-11-19

# **5.5 Test Results and Reports**

Test report is very important and it is needed to know that the system is ready/ not ready for implementation? It is a document that records data obtained from an evaluation experiment. We need to run through many types of testing. There are many types of testing:

- Functionality, Regression&Security
- Performance &Scalability
- Usability&System interoperability
- Localization&Disaster recovery
- Installation/ upgrade.

If the system passes through all these types of testing it is finally ready to launch

So at the end I can carry out the results as the benefits of usability testing.

- Good Quality of application.
- System is easier to use.
- Application is more readily accepted by users.
- Easy to use for the new users.
- Better UI for interaction.

## **CHAPTER 6**

## **CONCLUSION AND FUTURE SCOPE**

## **6.1 Discussion and Conclusion**

- Capable of storing school resources.
- Easily to track the students & course relation they have taken.
- System can use local & Server also where other school can connect to Server.
- Relationship between student & Guardian.

# **6.2**Scope for Further Developments

- System features will be upgraded day by day for its better use.
- System will implement new UI if needed for good looks.
- AI Integration.
- Android application.
- Entire system more interactive & provide statistics data.
- Will implement notification system.

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## **APPENDIX**

## **Project Reflection:**

From Fall-2018 semester i had started the journey to make a system, where admin, staff, teachers, Guardians and students can communicate easily from anywhere and it will save valuable times as well. I followed the model to implement and monitor our system, with the all hard work and spending a lot of time finally i was able to reach my goal at last. The project "School Management System" will be very helpful for all of us to communicate. The students will be more active about their study and going to improve their critical level of thinking. Students will learn things with almost proper knowing. Guardians can view their child's activity. You can add multiple school via this system. So I believe that our "School Management System" will be a positive and effective thing for everyone. And I will be continuously upgrading my system for user friendly.

## **PLAGIARISM**

