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Project Title

Web Based Solution For Limited Phone Memory Storage

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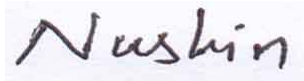
A project submitted in partial fulfillment of the requirement for the degree of
Bachelor of Science in Software Engineering

Department of Software Engineering
DAFFODIL INTERNATIONAL UNIVERSITY

Spring– 2019

DECLARATION

I hereby declare that I have taken this project under the supervision of **Md Habibur Rahman, Lecturer, Department of Software Engineering, Daffodil International University**. I also declare that neither this project nor any part of this has been submitted elsewhere for award of any degree.



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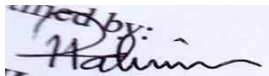
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Acknowledgement

I have given efforts as much as I can in this project. However, it would not have been possible without the kind support and help of many individuals and my University. I would like to extend my sincere thanks to all of them.

I am highly indebted to my supervisor **Md. Habibur Rahman** for his guidance and constant supervision as well as for providing necessary information regarding the project & also for his support in completing the project.

I would like to express my gratitude towards my parents. My thanks and appreciations also go to my classmates in developing the project and people who have willingly helped me out with their abilities.

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Chapter 1

Introduction

1.1 Project Overview

In this modern era we use computers in every work. Everything is becoming computer based. Everywhere we go, everything we do computer became the first source. It made our work easy, and swift. Today we have computers with large computing power and almost every business is going totake the advantages of using those technologies.

Therefore my project is a web based solution of shortage memory of any smart phone. The project will help those people who has limited storage on their phone. They can transfer files directly on their home PC from outdoor. So that they can free their phone storage whenever needed.

1.2 Project Purpose

The project will help those people who has limited storage on their phone. They can transfer files directly on their home PC from outdoor. So that they can free their phone storage whenever needed.

We have google drive, iCloud also to solve that problem. But it is not, our documents go to their server. And that's not safe. So I tried to find the solution of this problem.

1.2.1 Background

Now-a-days everyone is using smart phones, and these phones don't have enough memory. I notice that, people who like to travel and take photos is facing a lot of problem at the time of theirjourney. Thousands of peopleare being suffering, but there is not any solution. So considering that, I have brainstormedand thinking that this solution is going to solve their problems.

1.2.2 Benefits & Beneficiaries

Basically this project is for personal use. This project will be helpful for people when they are out of their home and need to free up their phone storage. As smart phones have fixed memory storage, these fills up very soon. So using this project one can free up the phone.

1.2.3 Goals

The main goal of the project is to secure one's documents. The project will help those people who has limited storage on their phone. They can transfer files directly on their home PC from outdoor. So that they can free their phone storage whenever needed. And the process is very secured because the documents are not going on google or anywhere else. It's storing directly on our own PC.

1.3 Stakeholders

There are two types of stakeholders. And they are :-

1. For Own use
2. Family members

Own: The system is actually built for one's own use. Only he or she can know the path of their personal computer.

Family members: Family members can know the path. So that they can also transfer files when they needed.

1.4 Proposed System Model

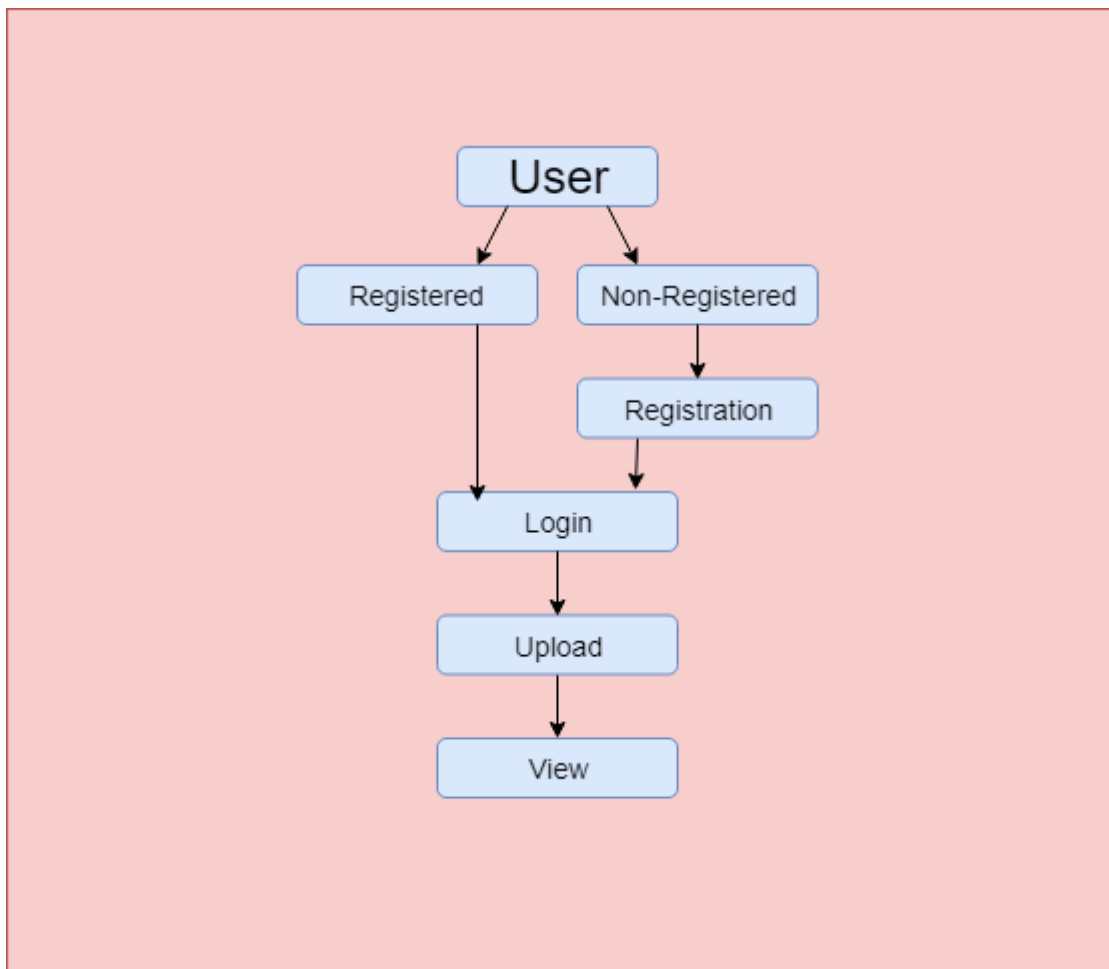


Figure 1.4: Proposed System Model

1.5 Project Schedule

We need to prepare a scheduling plan to complete the project on time. It also refers to makecommunication with what task need to get done within timeframe.

1.5.1 Gantt chart

Gantt chart is mainly a production control tools. It remained us to complete our assigned tasks within a certain period of time. For developing software, it is mostly used. Now I will show aGantt chart for our project.

Activities		W1	W2	W3	W4
Planning	1.Idea 2.Proposal Planning 3.Problem Definition				
Requirements	1.Requirement Specification				
Implementation	1.Necessary Codes 2.Router setup				
Testing	1.Test the project				
Scheduled Time					

Figure 1.5.1: Gantt Chart

1.5.2 Release Plan/Milestone

Activities	Duration of Work	Total
Idea	Week-1	1
Proposal Planning	Week-1	1
Problem Definition	Week-1	1
Requirement Specification	Week-1	1
Necessary Codes	Week-2, 3, 4	3
Router setup	Week-4	1
Test the project	Week-4	1

Chapter 2

Software Requirement Specification

2.1 Functional Requirements

Functional requirements refer to the functions which are mandatory to the system. Functional requirements must be able to perform on the software system. Every system must have some functional requirements. Now, we are going to mention functional requirements associating with our project.

Requirement-1	Registration
Description	When a user wants to transfer files he or she has to register first. Then he can login to the system and upload file.
Stakeholder	User.

2.1.1 Registration

Requirement-2	Login
Description	After completing registration user can log in to the system and upload photos.
Stakeholder	User.

2.1.2 Login

2.1.3 Upload

Requirement-3	Upload
Description	A user can upload files when he or she is a registered user.
Stakeholder	User.

2.1.4 View

Requirement-4	View
Description	When a photo is uploaded the user can see the

	photo.
Stakeholder	User

2.2 Data Requirements

For defining data requirements, we need to build the model. For the system all data would be loaded from user. And for that purpose we need to focus on some major points.

2.3 Performance Requirements

It is very important to maintain performance of any software system. To ensure performance, we need to maintain some steps. Now, I will explain some perspective by which we are going to enhance the performance of my project.

2.3.1 Speed and Latency Requirements

Latency is the time between making a request and beginning to see a result. Some define latency as the time between making a request and the completion of the response. Speed and latency requirements must be ensured while retrieving data.

2.3.2 Precision or Accuracy Requirements

Precision is an indicator of the consistency of our measurements. In the shooting example, high precision would mean we are constantly hitting the same target. As we can see, a combination of high accuracy and precision is required to guarantee the proper positioning of the material by web guiding systems.

2.3.3 Capacity Requirements

Capacity requirements planning is the process by which figures out how much it needs to produce, and determines if it is capable of meeting those production goals. Small businesses must conduct capacity requirements planning regularly to keep up with changes in supply and demand. The developed system must be capable to handle user data, provide accurate information, handling database.

2.4 Dependability Requirements

The term dependability is measured based on four dimensions. Such as:

- Availability
- Reliability

- Safety
- Security

If we want to say that our application system is dependable then it must fulfill the four dimensions. But there are other tasks. Like there is no way to make mistakes or our system should have the ability to detect and then remove errors. Besides that, it is also very important to limit the damage which might be caused by system failure.

Availability: Availability is defined as the probability that the system is operating properly when it is requested for use. In other words, availability is the probability that a system is not failed or undergoing a repair action when it needs to be used. At first glance, it might seem that if a system has a high availability then it should also have a high reliability. However, this is not necessarily the case. This article will explore the relationship between availability and reliability and will also present some of the specified classifications of availability.

Reliability: Reliability represents the probability of components, parts and systems to perform their required functions for a desired period of time without failure in specified environments with a desired confidence. Reliability, in itself, does not account for any repair actions that may take place.

Security and Safety: There are no safety critical requirements in this project. As it's for own use it is totally safe and secured.

2.5 Maintainability and Supportability Requirements

It is very important to provide after service or support to the end users.

2.5.1 Maintenance Requirements

MR-1	System helps to update user profile
Description	It is very important to update user profile
Stakeholder	User

2.5.2 Supportability Requirements

Supportability requirements may have related to some extends. Like:

- Testability
- Extensibility
- Adaptability
- Maintainability
- Compatibility
- Configurability

2.6 Security Requirements

Making software security as a requirement is very important. It's a major issue while working on a system. Although this system is highly secured because without family members no one is going to know the path of personal computer.

2.6.1 Access Requirements

R-2	Description
Access Requirements	For accessing to the system, there remains some authentication and authorization techniques. Every module is designed in such a way that it only give access to the authorized and authenticated users.

2.6.2 Integrity Requirements

R-2	Description
Integrity Requirements	Data integrity is the security property that ensures that data meets a given expectation of quality and has not been exposed to accidental or malicious modification or destruction. All input data must be appropriately validated.

2.6.3 Privacy Requirements

R-3	Description
Privacy Requirements	It is totally a private system. People who knows the path only they can use it. As the system is using for own use it is very secured and private.

2.7 Usability and Human-Interaction Requirements

There are no Usability and Human-Interaction Requirements in this system.

2.8 Look and Feel Requirements

Look and feel requirements mainly refers how the system will look like and how the userinterface or graphical user interface of our system will display to the user.

2.9 Operational and Environmental Requirements

Operational requirements are those statements that "identify the essential capabilities, associated requirements, performance measures, and the process or series of actions to be taken in effecting the results that are desired in order to address mission area deficiencies, evolving applications or threats, emerging technologies, or system cost improvements." The operational requirements assessment starts with the Concept of Operations and goes to a greater level of detail in identifying mission performance assumptions and constraints and current deficiencies of or enhancements needed for operations and mission success. Operational requirements are the basis for system requirements.

2.10 Legal Requirements

Legal requirements normally refer to the terms and conditions or privacy policy of any organizations. So there are no legal requirements in this project.

Chapter 3

System Analysis

3.1. Use Case Diagram

The use case diagram of the system is given bellow:

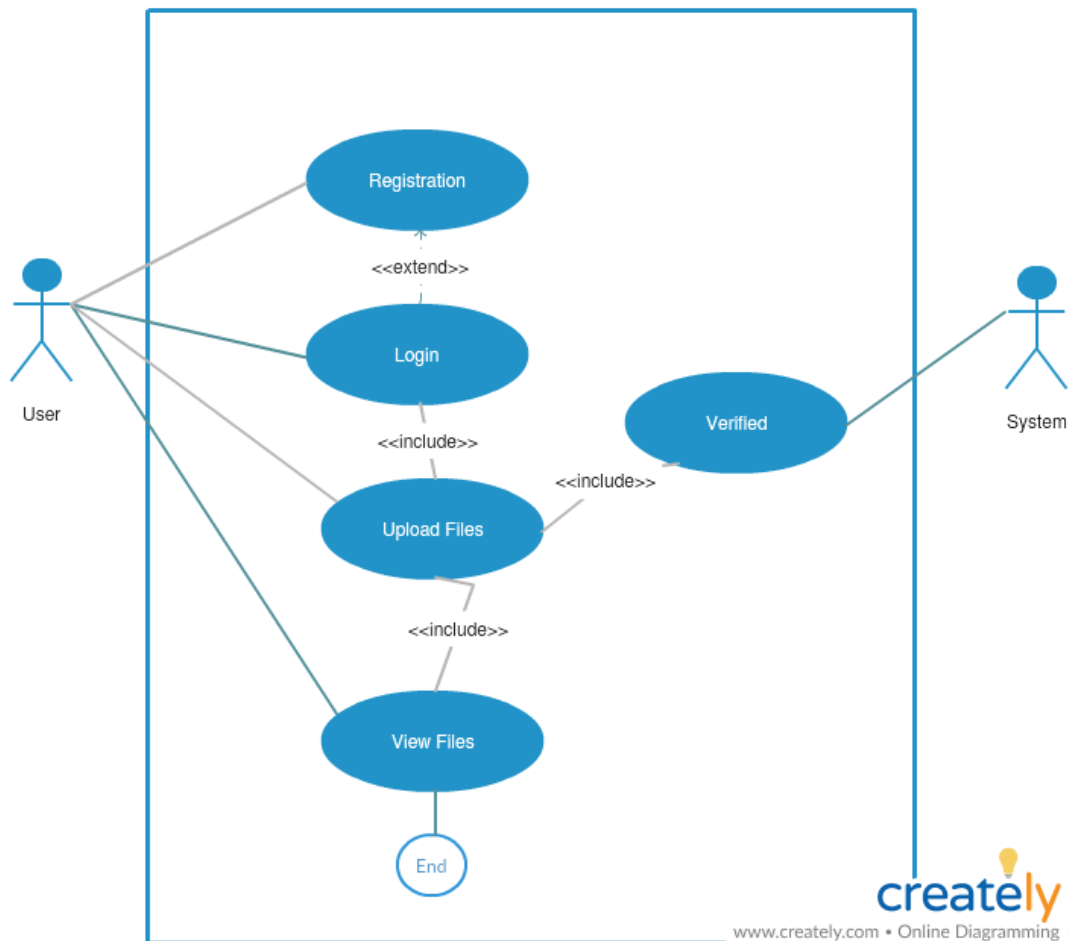


Figure 3.1: Use Case Diagram

Use Case Description

3.1.1 Registration

The user should register before log in to the system. Once the user becomes registered he can login when needed.

3.1.2 Login

When a user is been registered he can log in to the system directly.

3.1.3 Upload

When the system interface has come, the user can browse photos from their gallery. Then he can upload these. So that he can free up the space of their phone.

3.1.4 View

After uploading a file if it is uploaded the user can see it on the interface. It is important to be sure if it is uploaded or not.

3.2 Activity Diagram

I have prepared some activity diagram according to the use case. These activity diagrams are properly referring the flow of the individual conditions of this project.

3.2.1 Activity Diagram for Registration

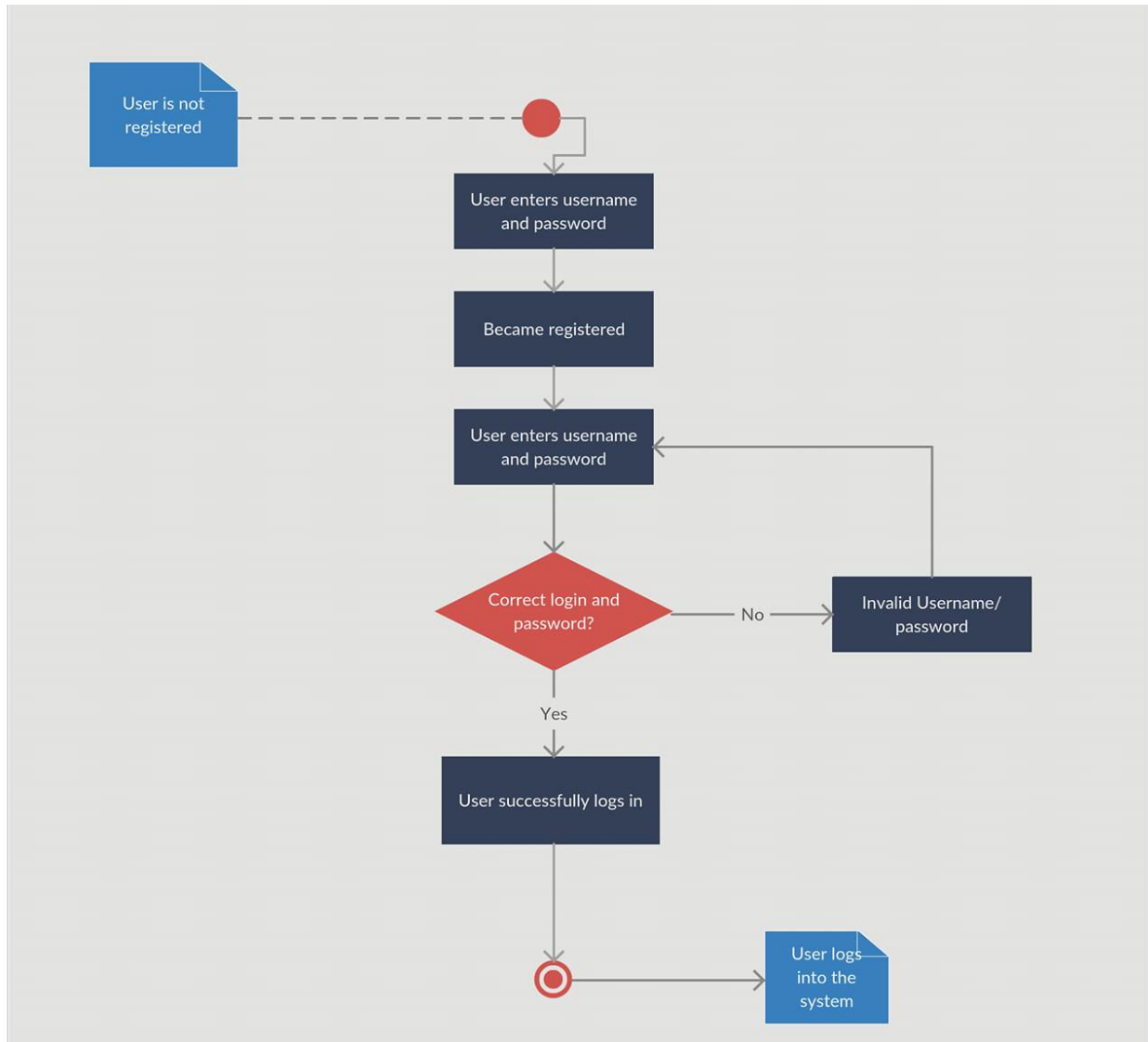


Figure 3.2.1: Activity Diagram for Registration

3.2.2 Activity Diagram for Login

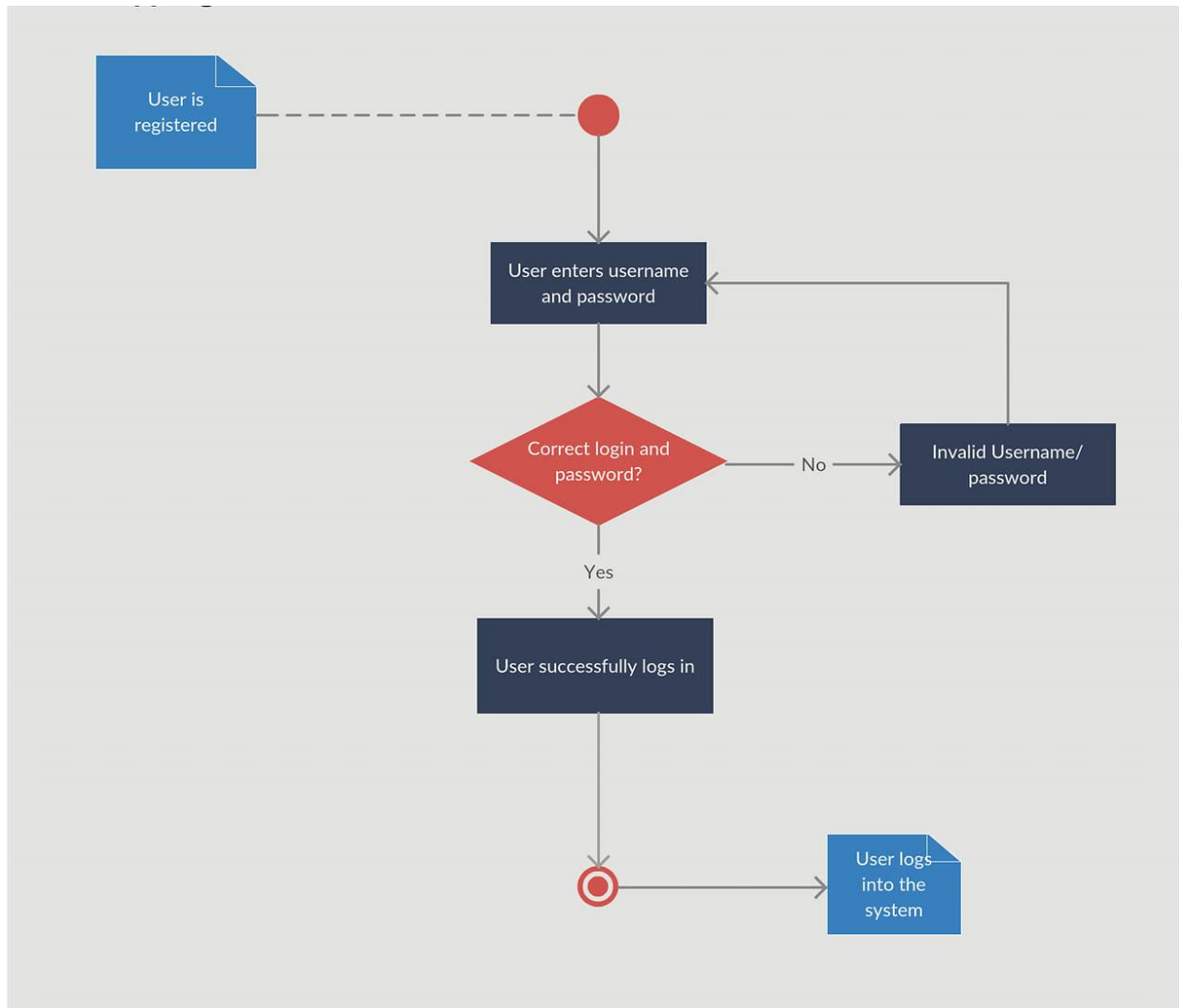


Figure 3.2.2: Activity Diagram for Login

3.2.3 Activity Diagram for Upload

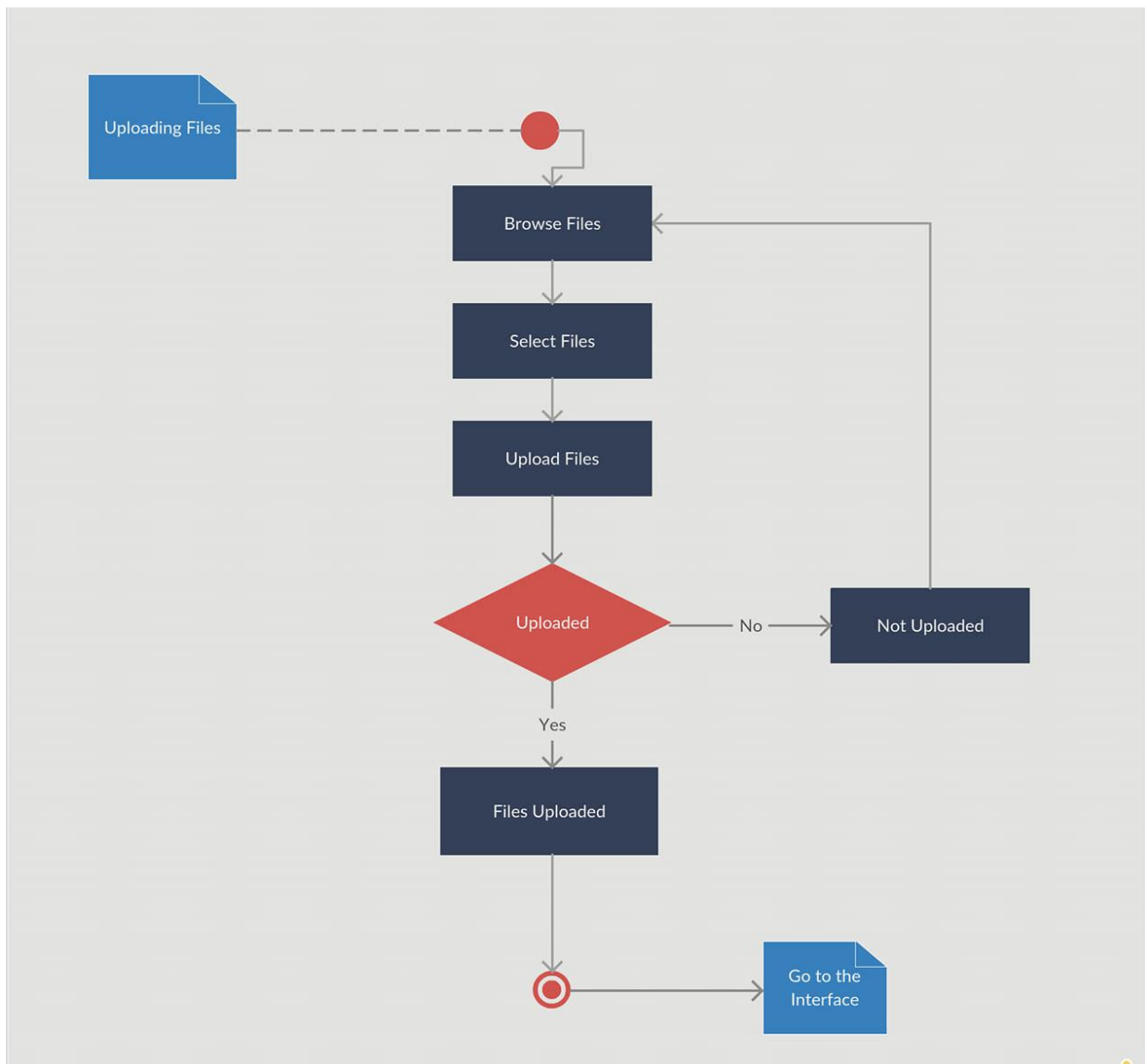


Figure 3.2.3: Activity Diagram For Upload

3.2.4 Activity Diagram for View

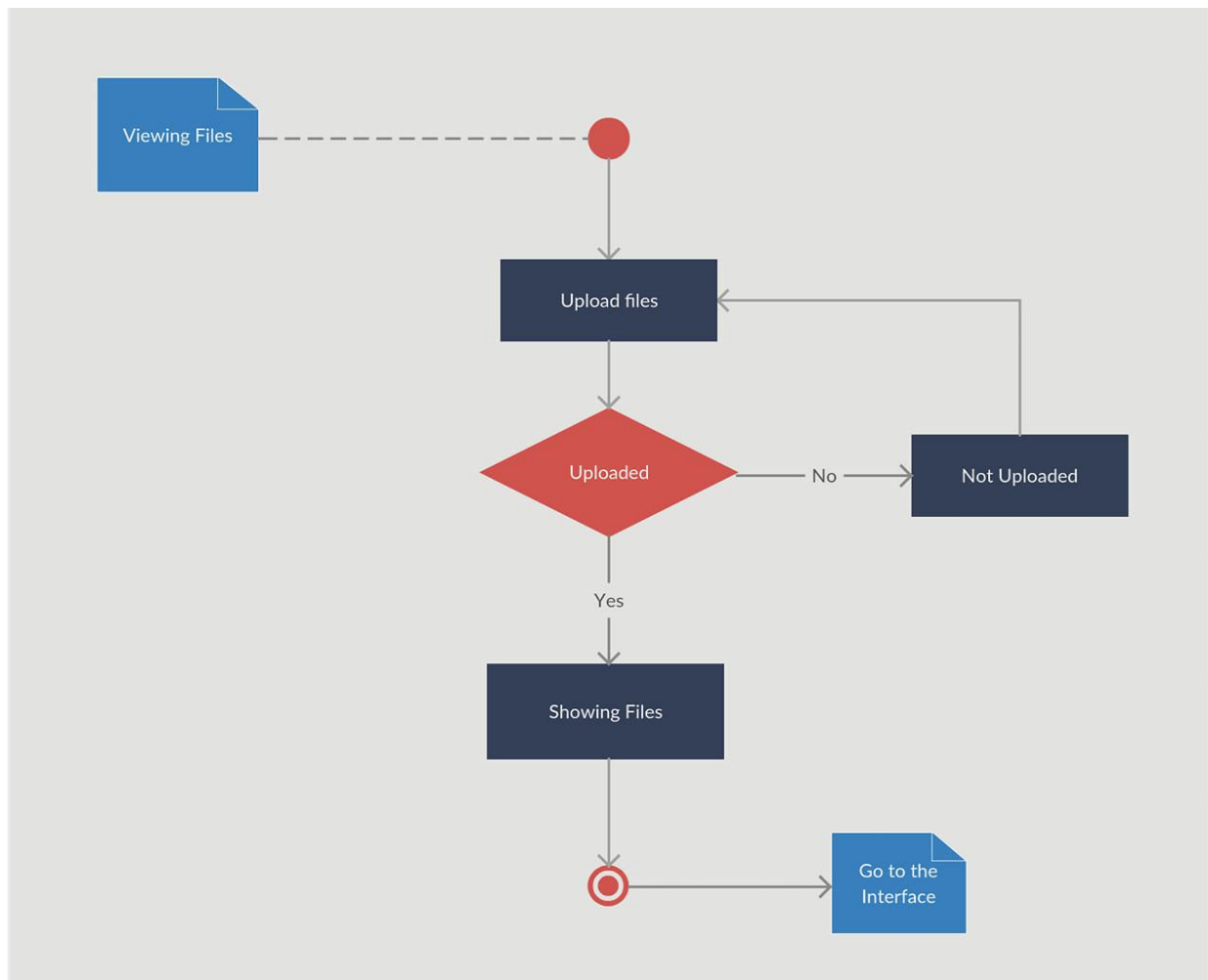


Figure 3.2.4: Activity Diagram For View

3.3 System Sequence Diagram

Mainly sequence diagrams understand us how the data will be followed in any application. Now we are going to show some sequence diagrams

3.3.1 Login

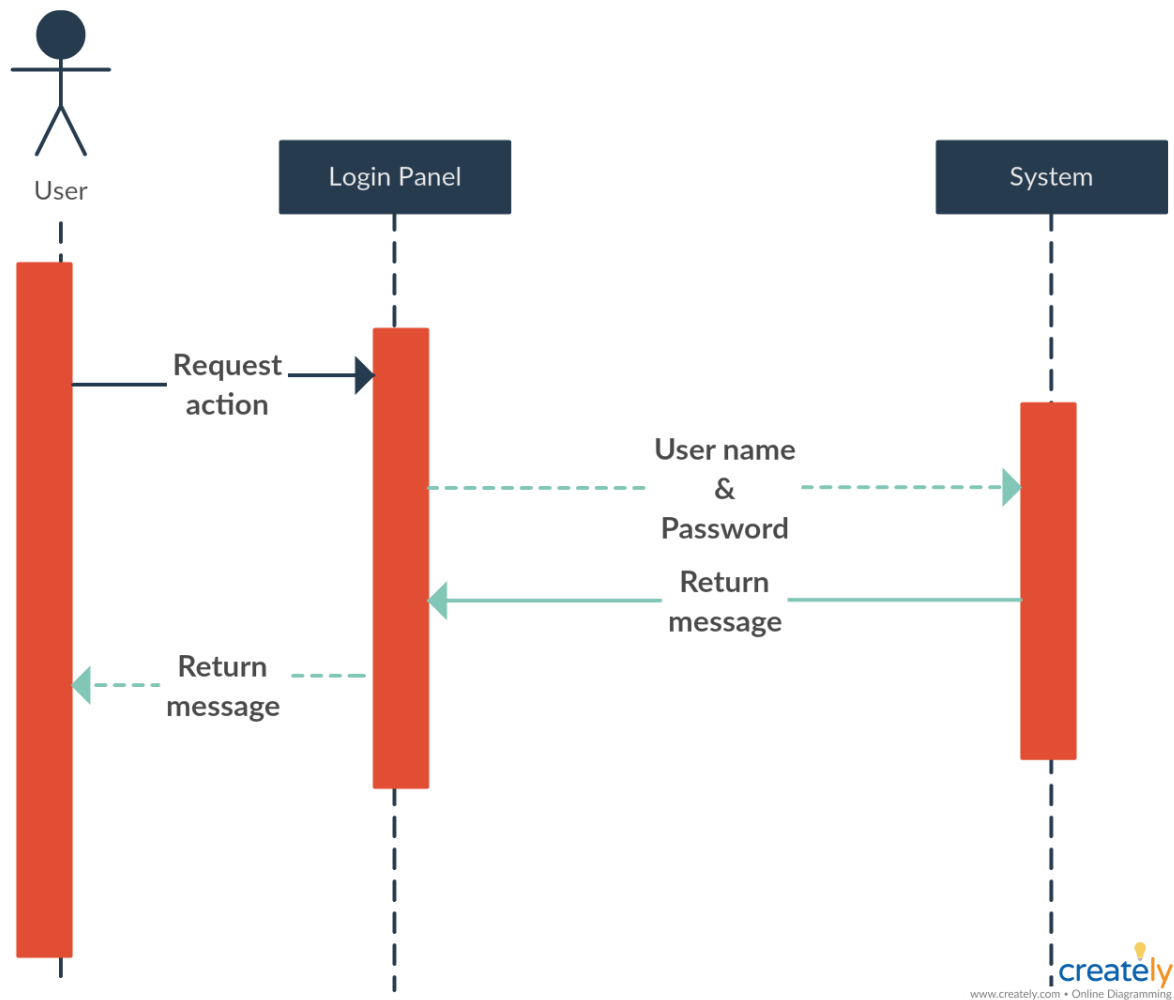


Figure 3.3.1: Sequence Diagram For Login

3.3.2 Upload

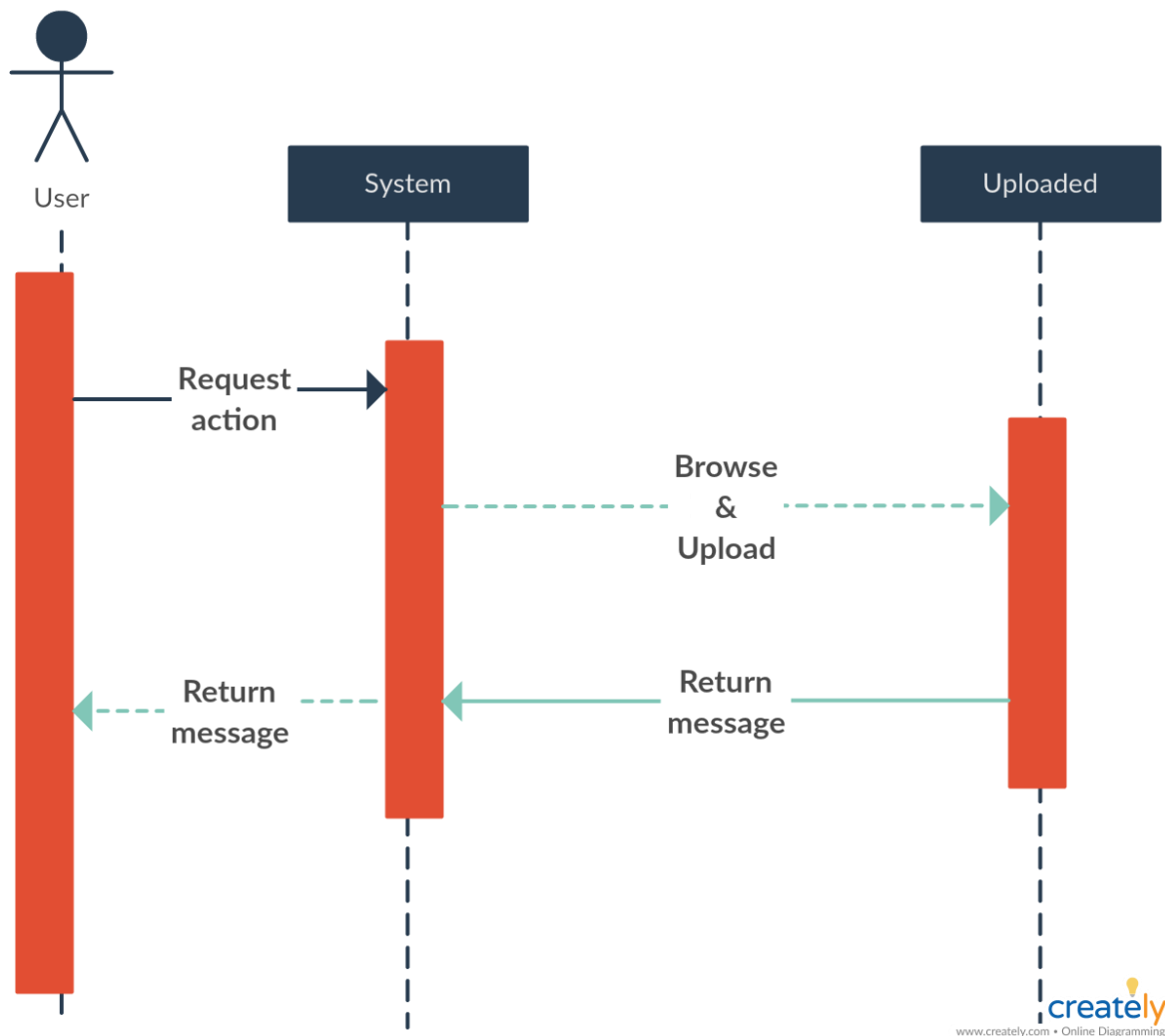


Figure 3.3.2: Sequence Diagram For Upload

3.3.3 View

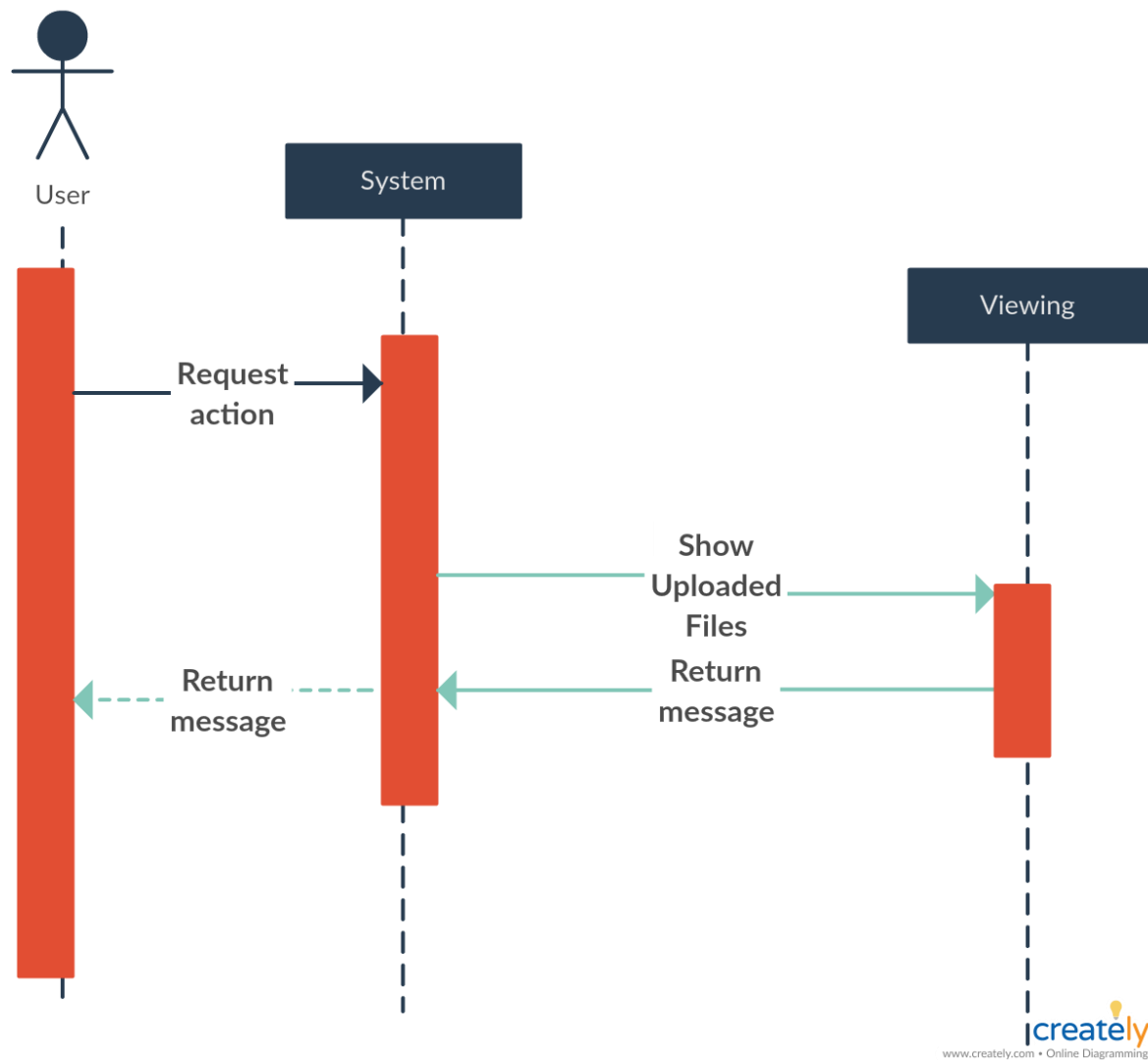


Figure 3.3.3: Sequence Diagram For View

Chapter 4

System Design Specification

4.1 Development Tools & Technology

Software development tools are used to develop software. There are different kinds of tools for software developers to make the process of software development very smooth. But now I will mention some of the tools that I am using to develop my project.

4.1.1 User Interface Technology

First of all, after landing any application, the interface of that software is appeared to the user. So, the importance of user interface is very high. For success of any software application, a good looking user interface plays a vital role. User interface includes using good image, graphics, typography, stylesheets, scripting etc.

4.1.1.1 HTML & CSS

The same way the internet connects us, there are special web languages that work together to make up the internet and the websites it contains. HTML, CSS work together to form the front-end design of a website by applying information that affects content, style and interactivity of a site. After completing markup, cascading style sheets are designed. It generally explains how HTML elements will display. There are three ways to write stylesheet. One internal CSS, another is external CSS. And last one is inline CSS. But most of the time external CSS is used. Because, by using external CSS, all CSS data can be kept in different files. But nowadays CSS framework seems to be very popular. Here I used CSS for designing.

4.1.1.2 Bootstrap

I used Bootstrap also to design my system. Bootstrap also provides media query which features responsive layout for different devices with different screen size. Bootstrap provides a set of some files which contains stylesheets which gives basic definition. By using Bootstrap framework, we get both CSS and JavaScript facilities with a single platform. But before start designing an application interface with Bootstrap, one may have some basic knowledge about this framework. It will increase the efficiency.

4.1.1.3 Programming Language

For developing any system minimum one programming language is essential. In my project I used PHP as programming language. PHP stands for Hypertext Preprocessor. It's an open source,

server-side, scripting language used for the development of web applications. By scripting language, we mean a program that is script-based (lines of code) written for the automation of tasks.

4.1.2 Implemented tools and platform

There are some tools and technologies that need to be used for developing software. It is very important to determine which tools and platforms are the best match of my requirements. After making a proper decision, one needs to start using them. The tools and platform I used are given below:

4.1.2.1 Sublime Text

I used Sublime text editor for doing PHP codes in my project. Sublime Text is a proprietary cross-platform source code editor with a Python application programming interface (API). It natively supports many programming languages and markup languages, and functions can be added by users with plugins, typically community-built and maintained under free-software licenses. Sublime Text is a sophisticated text editor for code, markup and prose. It is also easy to use.

4.1.2.2 Database Server

Database MySQL server is a freely available open source Relational Database Management System (RDBMS) that uses Structured Query Language (SQL). SQL is the most popular language for adding, accessing and managing content in a database. It is most noted for its quick processing, proven reliability, ease and flexibility of use. It is also very easy to use. It can also ensure the security. scalability, high performance and many things.

Chapter 5

System Testing

5.1. Testing Features

The phase “Testing” is an important phase of SDLC. After finishing the implementation we have to do the testing phase. To test the features and functionality, a new test set is to be written for testing purpose. The features to be tested are given below.

5.1.1. Features to be tested

Features	Description	Priority
Registration	To become a user, they need to be registered first.	1
Login	User must be authenticated by login.	1
Upload	When a user logged in, he can upload a photo.	3
View	Viewing is important to be sure if the photo is uploaded successfully.	3

Here, 1 = Low Priority, 2 = Medium Priority, 3 = High Priority

5.2 Testing Strategies

A test strategy is an outline that describes the testing approach of the software development cycle. It is created to inform project managers, testers, and developers about some key issues of the testing process. This includes the testing objective, methods of testing new functions, total time and resources required for the project, and the testing environment.

5.2.1 Test Approach

A test approach is the test strategy implementation of a project, defines how testing would be carried out. Test approach has two techniques:

- **Proactive** - An approach in which the test design process is initiated as early as possible in order to find and fix the defects before the build is created.
- **Reactive** - An approach in which the testing is not started until after design and coding are completed.

5.2.1.1 Black Box Testing

Black Box Testing, also known as Behavioral Testing, is a software testing method in which the internal structure/ design/ implementation of the item being tested is not known to the tester. These tests can be functional or non-functional, though usually functional.

5.2.1.2 Equivalent Class Partitioning

Equivalence partitioning or equivalence class partitioning (ECP) is a software testing technique that divides the input data of a software unit into partitions of equivalent data from which test cases can be derived. In principle, test cases are designed to cover each partition at least once.

5.2.1.3 Boundary Value Analysis

Boundary value analysis is a software testing technique in which tests are designed to include representatives of boundary values in a range. The idea comes from the boundary. Given that we have a set of test vectors to test the system, a topology can be defined on that set.

5.2.1.4 White Box Testing

White-box testing (also known as clear box testing, glass box testing, and structural testing) is a method of testing software that tests internal structures or workings of an application, as opposed to its functionality. In white-box testing an internal perspective of the system, as well as programming skills, are used to design test cases. Testers can also predict the output of every test cases for white box testing. White box testing can be classified into some levels.

Such as:

- Unit Testing
- Integration Testing
- System Testing

The main advantage of white box testing is that testing is more throughout and the testing can be started from the very beginning stage.

Chapter 6

User Manual

6.1 User Manual (Login)

User need to login to our application for using this application. But before that they need to be authenticated by our application. First of all, they need to enter into the login page and fill up the required information. After that they will get access. Now I will provide the screenshot of login page below:

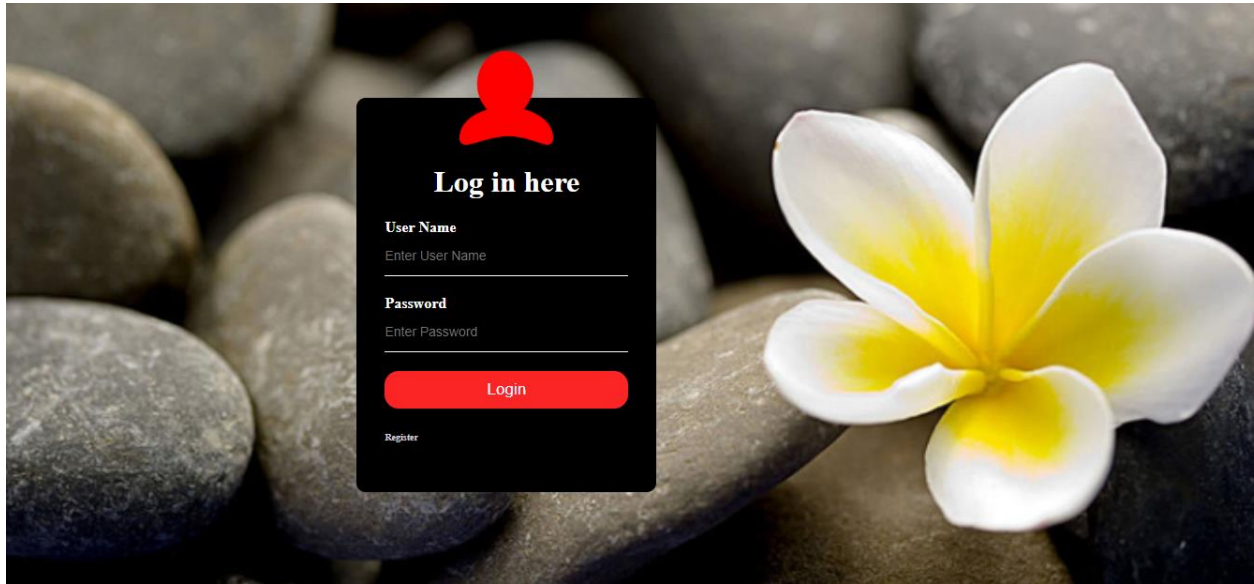


Figure 6.1: User Manual (Login)

6.2 User Manual (Registration)

User need to login first to get access to our application. But if the user has not signed up before then they need to register to our application first. For registration purpose, user need to go to the registration page. After that, they need to provide actual information which as required. After that, information will be pending for approval to BRTA. If BRTA approve the user ID, then he/she will be able to login to our application. Now I will provide the snapshot of the user registration page below:

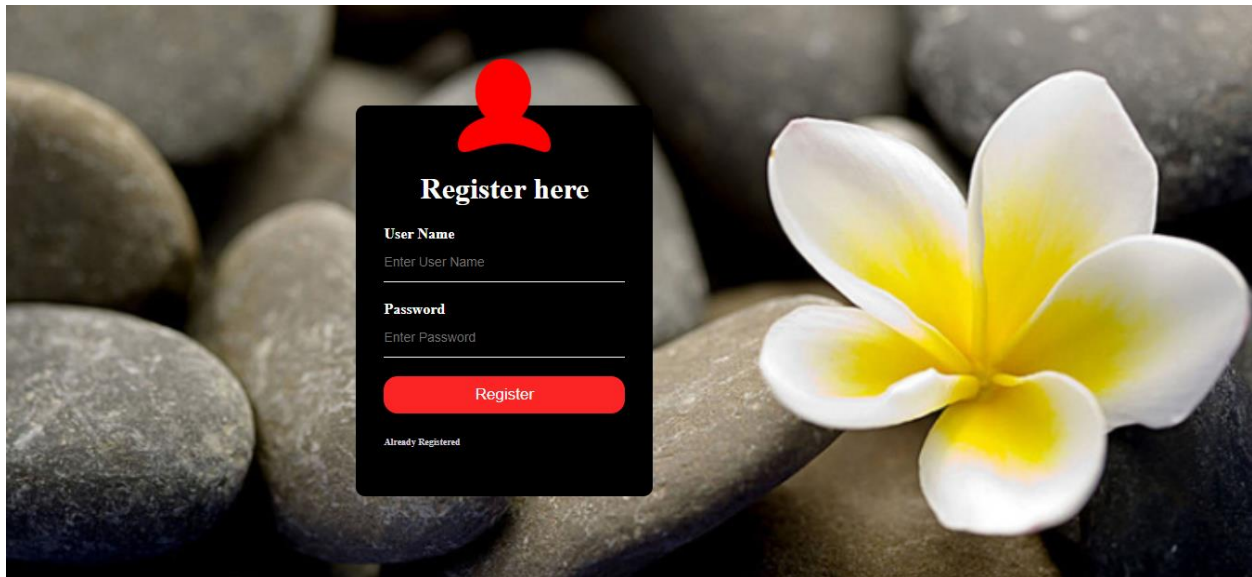


Figure 6.2: User Manual (Registration)

6.3 User Manual (System Interface)

When a user logged in the system, this interface will be appeared to them. And then they can upload files.

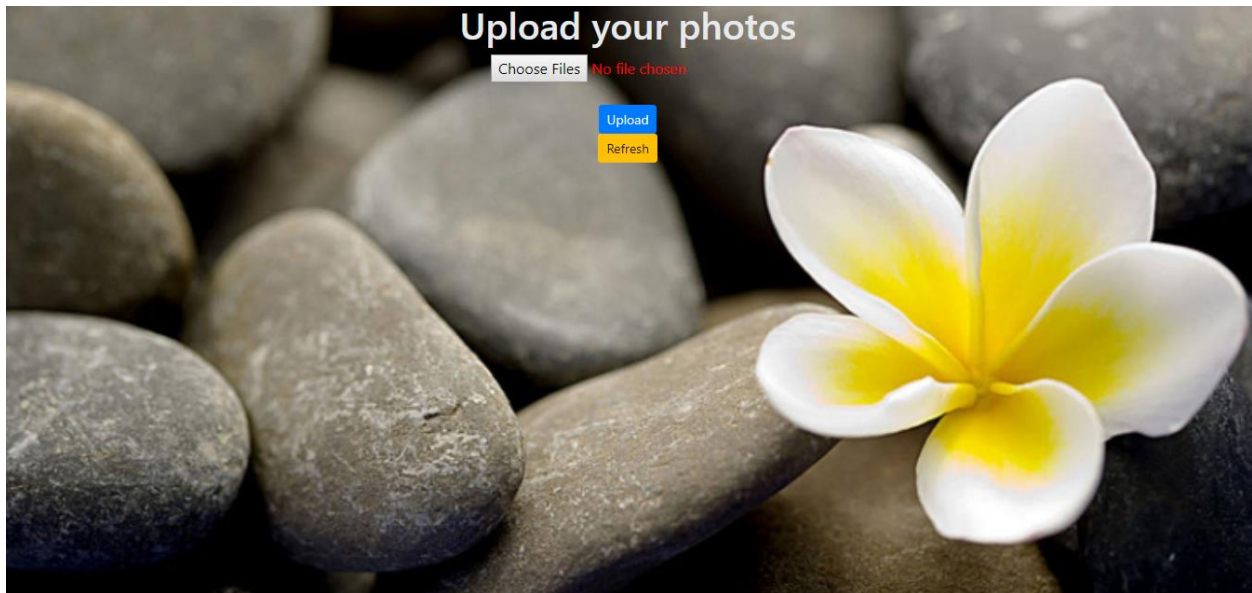


Figure 6.3: User Manual (System Interface)

Chapter 7

Project Summary

7.1 Project Summery

I thought about the project when I took the course “Thesis/ Project”. But I started working on it last month. As I am doing my internship I could not spend much time on it. I tried to fulfill the main task of my proposal. People who like to take pictures, will be benefited from the project when they are out of their home. Now-a-days smart phones don't have memory card. The memory is fixed. And in this modern era we use many type of application in our phone. However the phone storage can't be enough for the user.

So I tried to find a solution for this problem.

7.2 Limitations

There are some limitations of this project. In this project I used my personal computer as a server. So If I don't have a raspberry pi, I have to turn on my pc when I need to transfer files.

7.3 Future Scope

I have learnt a lot throughout the whole development stage of this project. For making this project developed, I have also meet some young entrepreneurs and enthusiasts also. I am very much thankful to all of them as their idea and discussion gave me some opportunities to make my product complete. It will help me to work with similar type project in future also.

As I said I just only did the major of this project. I have so many plans to rise up this project.

7.4 References

I have gained some knowledge from some platforms. Obviously I will mention those references. For making my project successful those resources help me a lot. Not I will mention the names below:

- <http://www.google.com>
- <http://www.youtube.com>
- <http://www.wikipedia.com>
- <http://www.w3schools.com>
- <http://www.getbootstrap.com>
- <http://www.mysql.com>
- <https://www.draw.io>
- <https://creately.com>