DIU Teacher’s Student Counseling Hour Management

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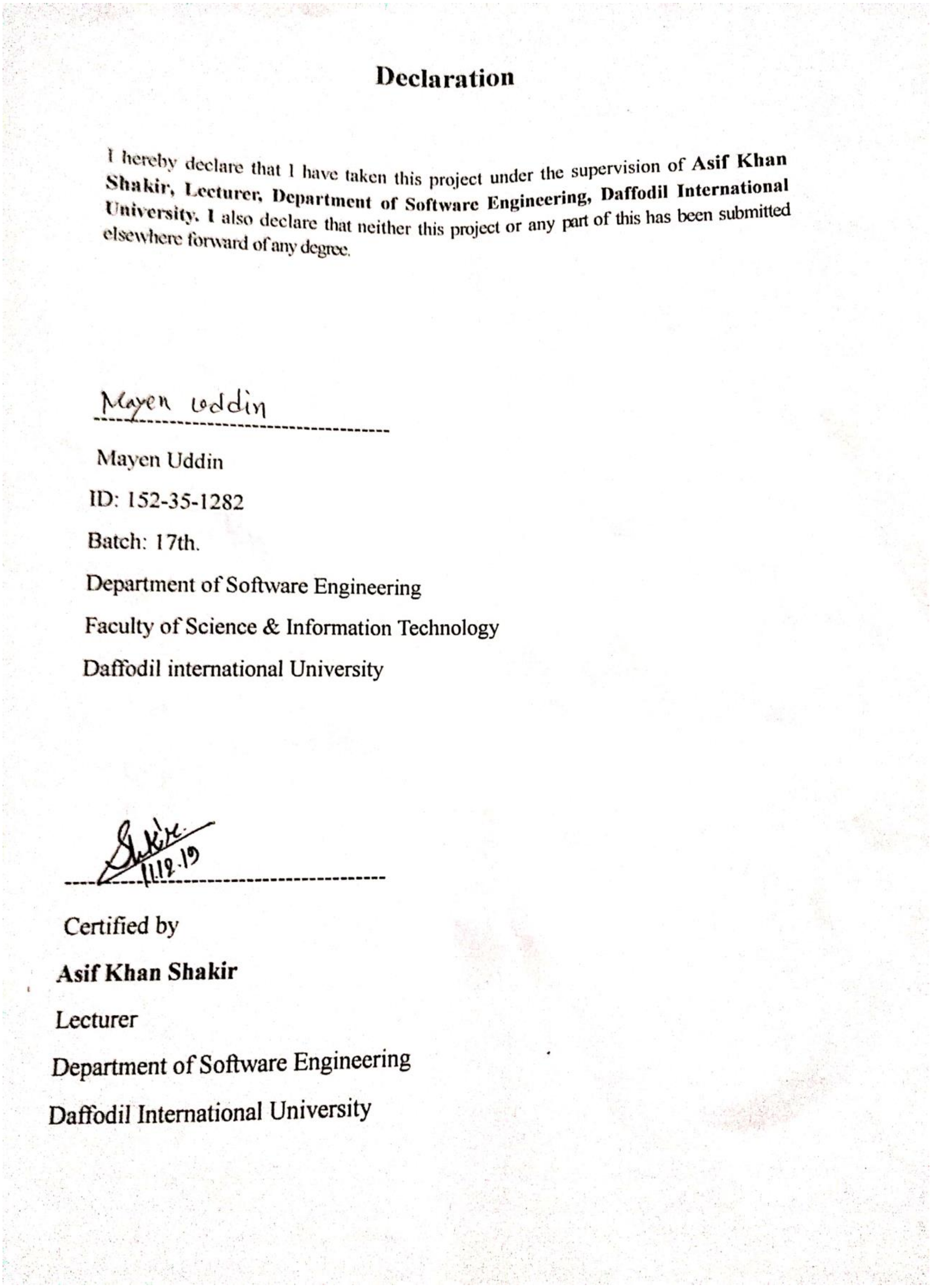

Declaration

I hereby declare that I have taken this project under the supervision of **Asif Khan Shakir, Lecturer, Department of Software Engineering, Daffodil International University.** I also declare that neither this project or any part of this has been submitted elsewhere forward of any degree.

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Department of Software Engineering

Daffodil International University

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The success and final outcome of this project required a lot of guidance and assistance from many people and I am extremely privileged to have got this all along the completion of my project. All that I have done is only due to such supervision and assistance and I would not forget to thank them.

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Beside my supervisor, I would like to express my sincere thanks to Dr. Touhid Bhuiyan, Professor and Head of Software Engineering Department for his constant encouragement.

I would like to thank them who were helped in my project by their very important suggestions without their passionate participation and input; the project could not be successfully conducted. I take this opportunity to record my sincere thanks to all the faculty members of the Department of Software Engineering for their help and encouragement.

Last but not least, I would like to thank our parents, for their unconditional support, love and without this we would not have come this far.

EXECUTIVE SUMMARY

DIU Teacher's Student Counseling Hour Management system is a web based application. The System allows the teacher to create their counseling hour and update at any time.

The application is basically for University Departments and students. The application provides a full web based sites where department admin or teacher can handle all of his/her counseling hour created by his/her counseling hour information. Then every member of this sites can able to view the updated counseling hour.

The objectives of this project are to make more efficient to admin, flexible for all members & usability is user friendly. By create counseling hour with this system can more comfortable for every students.

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CHAPTER 01: INTRODUCTION

1.1 Project overview

DIU Teacher’s Student Counseling Hour Management system is a web based application. The System allows the teacher to create their counseling hour and update at any time.

The application is basically for University Departments and students. The application provides a full web based sites where department admin or teacher can handle all of his/her counseling hour created by his/her counseling hour information. Then every member of this sites can able to view the updated counseling hour.

The objectives of this project are to make more efficient to admin, flexible for all members & usability is user friendly. By create counseling hour with this system can more comfortable for every students.

1.2 Project Purpose

1.2.1 Background

In my university every teacher has a manual counseling hour that is very good for every students. But the problem is when a teacher is not available in his/her counseling hour because of unavoidable reason. Then the student waste their time because the students can’t know about the teacher’s updated counseling hour or why the teacher is not available his/her given counseling hour. That’s why I think that if the whole system is in online based and then the teacher can update their counseling hour at any time and student can check their teacher updated counseling hour before meeting. As a result a student can save their time and money.

1.2.2 Benefits & Beneficiaries

Benefits:

- Admin can maintain this sites easily.
- This system give you proper used your valuable time.
- Don’t need to think or conscious about your desired teacher counseling hour.
- Every students can handle time management easily.
- Meeting with teacher missed possibility is quite low.

Beneficiaries:

- Teachers
- Students

1.2.3 Goals

- Easily know about real time counseling hour.
- No need to inquire again and again by calling to teacher know about the teacher is available or not.
- Time savings.
- Money Savings
- Teacher with student meeting miss possibility will be low.

The main purpose of this project is to reduce these problems and make counseling hour management system reliable and saving students’ time

1.3 Proposed System Model

A software process model is a simplified representation of a software process. Each model represents a process from a specific perspective.

1.3.1. Agile-Model

Our proposed system model is agile model which is an incremental process of software development. Each iteration lasts one to three weeks on average. Engineering actions are carried out by cross functional teams. In software development the term agile means the ability to respond to changes-changes from requirements, technology and people.

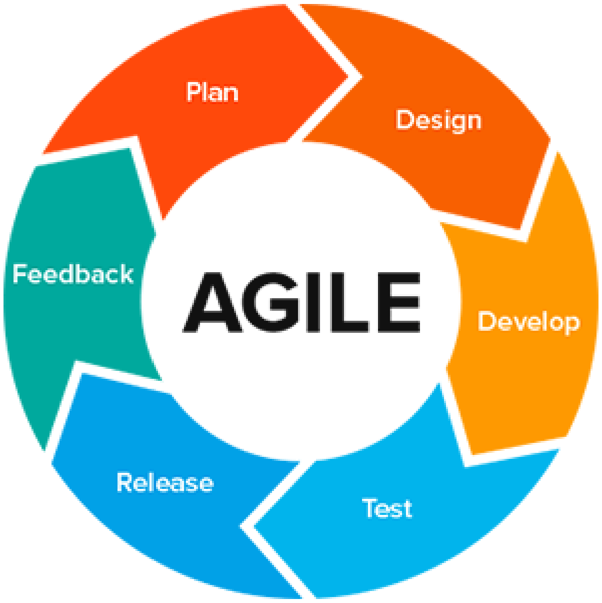


Figure 1: Agile-Model

1.4 Project Schedule

In project management, a schedule is a listing of project’s milestones, activities, and deliverables, usually with intended start and finish dates. A schedule is commonly used in the project planning and project portfolio management parts of project management.

1.4.1 Gantt Chart

Weeks **Works**	1	2	3	4	5	6	7	8	9	10	11	12
Analysis Phase	🟩	🟩										
Feasibility Study		🟥										
Project proposal			🟩									
Project UI			🟦	🟦								
Mid-term defense					🟦							
Implementation of the project				🟦	🟦	🟦	🟦	🟦	🟦	🟦		
Testing										🟧		
Document of the project										🟧	🟧	
Final defense												🟪

Figure 2: Gantt chart

1.4.2 HR Planning for Development Phase

1.4.2.1 Project plan

1.4.2.2 Analysis

1.4.2.3 Requirement gathering

- Brainstorming
- Interview
- Observation

1.4.2.4 Design

- System Design
- Database design
- System user interface

1.4.2.5 Development

- User Module
- Event Module
- Others

1.4.2.6 Testing

- Test plan
- Test Case
- Test Execution

1.4.3 Release Plan

- Release 1: beta version 1.0.0 on 25/09/2019
- Release 2: beta version 2.0.0 on 30/10/2019

- Release 3: version 3.0.0 on 25/11/2019
- Release 4: version 4.0.0 on 15/12/2019

CHAPTER 2: SOFTWARE REQUIREMENT SPECIFICATION

2.1. Functional Requirements

Table 1: Functional Requirements

SRS No.	Name	Description	Priority
#01	Manage User	Admin can manage user. He can add, delete, edit user.	High
#02	Manage Status	Admin can manage active or inactive user.	High
#03	Manage Action	Admin can suspend user, account lock user & inactivate user.	High
#04	Create post	Teacher can create his/her own counseling hour.	High
#05	Alert Holidays	He can declared that which holidays he is not available.	High
#06	Manage Counseling Hour	Teacher can change counseling hour at any time from created schedule.	High
#07	Mange User Details	Admin can view every user’s details.	High

2.2. Data Requirements

Table 2: Data requirements

No	Description	Priority
#01	Admin has to insert the login credentials accurately otherwise system Will show an error with message.	High
#02	Admin has to insert all user information.	High
#03	Student can view information.	Medium
#04	Student can search to view information.	High
#05	Student can view update event information.	Medium

2.3. Performance Requirements

2.3.1 Speed and Latency Requirements

Table 3: Speed and Latency Requirements

No	Description	Priority
#01	When counseling hour set every students can view it.	Low
#02	The system automatically show updated counseling hour. And which counseling hour is updated.	Medium
#03	The system must have a high speed of manipulation data and send to The user request.	Low

2.3.2 Precision or Accuracy Requirements

Table 4: Precision or Accuracy Requirements

No	Description	Priority
#01	The input data should be validate when admin provide data to the system.	Medium
#02	All data should be in place accurately where it is associated.	Medium
#03	Need to validate all the collections of database.	Medium

2.3.3 Capacity Requirements

Table 5: Capacity Requirements

No	Description	Priority
#01	The web application size must able to load at hosting site.	Medium
#02	The database size must be able to store the system data. And collect data need to be stored.	Low
#03	System should support 100k user at the beginning version	Low
#04	System should support 1000 request per second.	Low

2.4 Dependability Requirements

2.4.1 Reliability Requirements

Table 6: Reliability Requirements

No	Description	Priority
#01	All confidential data must have to be encrypted.	Medium
#02	All data should collect from users by permission and by accepting Privacy policy.	Medium
#03	No one can use customer's data for any other purpose except system needs.	Low

2.4.2 Availability Requirements

Table 7: Availability Requirements

No	Description	Priority
#01	The system should work 24 hours a day.	Medium
#02	The system should provide the desired data to the user in time	Medium

2.4.3 Robustness or Fault-Tolerance Requirements

Table 8: Robustness or Fault-Tolerance Requirements

No	Description	Priority
#01	If the system has been crashed, it should not be more than an hour.	Low
#02	System must be responsible and should be cross browser supported.	Low

2.5. Maintainability and Supportability Requirements

2.5.1. Maintenance Requirements

Table 9: Maintenance Requirements

No	Description	Priority
#01	The system maintenance should be quick.	Low

2.5.2. Supportability Requirements

Table 10: Supportability Requirements

No	Description	Priority
#01	The system support latest mongo database.	Medium
#02	Should support all the browsers and screen size.	Low
#03	Should support latest and popular cloud services.	Low

2.5.3. Adaptability Requirements

Table 11: Adaptability Requirements

No	Description	Priority
#01	The system should adapt all upgrading version and time.	Low
#02	New version of system should support latest modules.	Low

2.6. Security Requirements

2.6.1. Access Requirements

Table 12: Access Requirements

No	Description	Priority
#01	All the users access have to be limited with their use case boundaries.	Low
#02	Users need to be authorized first to access data.	Medium
#03	Only SECURITY Administrator will be able to enter the system to make maintenance.	Low
#04	Student boundaries should be within the browser.	Low

2.6.2. Integrity Requirements

Table 13: Integrity Requirements

No	Description	Priority
#01	Only authorized user can add or delete data with their respective accessibility and authorization.	Medium
#02	Only admin can delete and edit users information.	Medium

2.6.3. Privacy Requirements

Table 14: Privacy Requirements

No	Description	Priority
#01	The user data must not be visible for public.	High
#02	The user data should not contain any private issues.	Medium
#03	All the confidential data should be encrypted.	Medium

2.7. Usability and Human-Interaction Requirements

No visible usability and Human-Interaction requirements

2.8. Look and Feel Requirements

2.8.1. Appearance Requirements

Table 15: Appearance Requirements

No	Description	Priority
#01	The user interface must be attractive.	High
#02	The user interface must be user friendly.	Medium
#03	The user interface must be user interactive.	Medium

2.8.2. Style Requirements

Table 16: Style Requirements

No	Description	Priority
#01	The interface color should be flat or material.	Medium

CHAPTER 3: SYSTEM ANALYSIS

3.1. Use Case Diagram

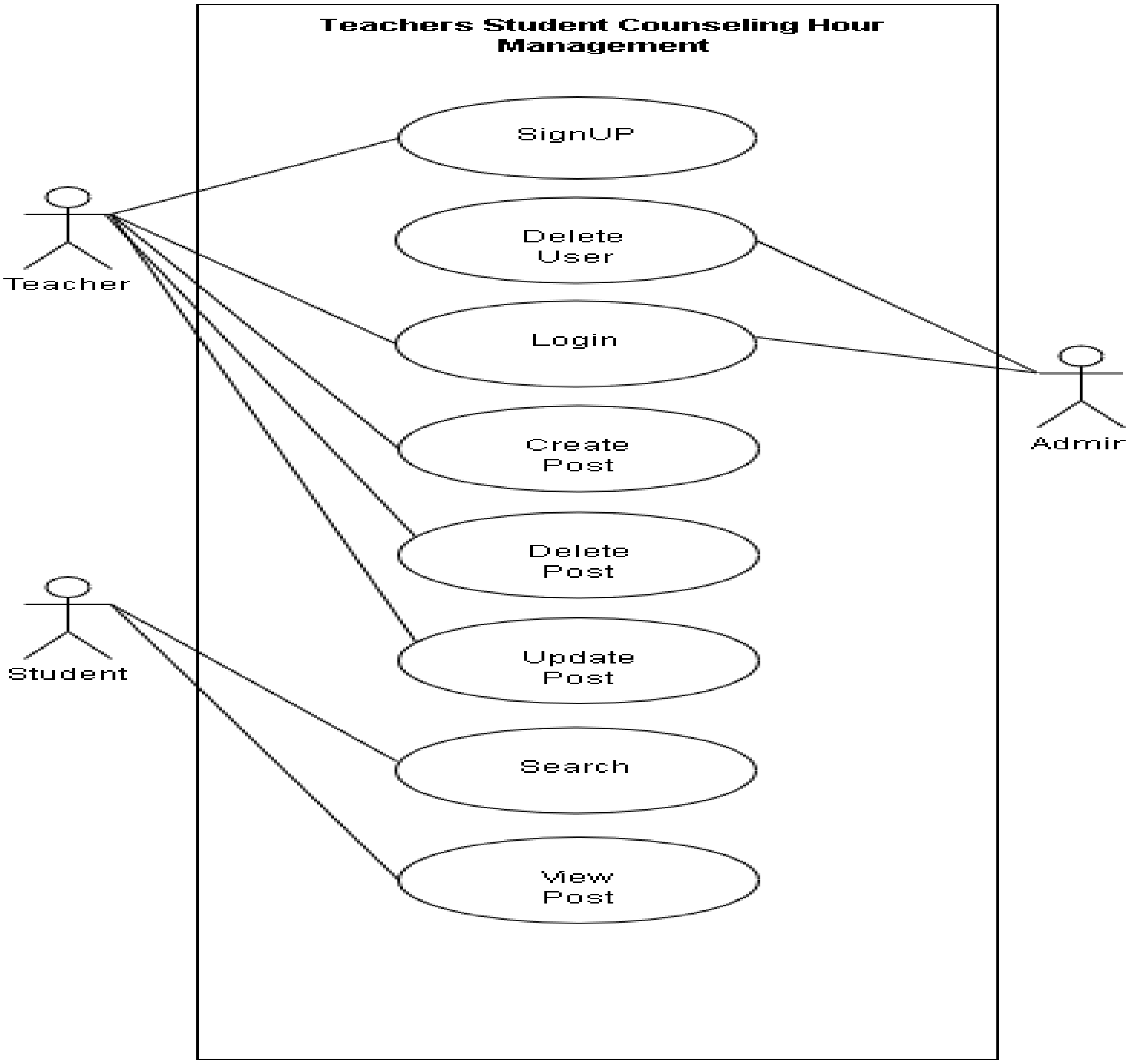


Figure 3: Use Case Diagram

3.2. Use Case Description

3.2.1. Signup

DIU Teacher’s student counseling hour System admin can add or approve teacher from their database. DIU Teacher’s student counseling hour System websites make the students easier meeting with teachers.

Table 17: Signup

Use Case Name:	Signup
Scenario :	Admin & teacher can sign up.
Brief Description:	Student can view his/her desired teacher available counseling hour. Also student can view holidays.
Actor:	Admin & Teacher
Precondition:	Student has to visit & search to view the counseling hour.
Post condition:	Student must visit this site.
Main Success Scenario	1. Counseling hour must be created. 2. Updated counseling hour have to be added to system. 3. After adding new counseling hour to system students can view.
Scenario Extensions	1. If there is no counseling hour student cannot view any counseling hour. 2. If any counseling hour can change student can easily view it just by search or visit in this site.

3.2.2. Delete User

Admin & Teacher can sign up here. Admin can delete user/teacher.

Table 18: Delete User

Use Case Name:	Delete User
Scenario :	Here admin can delete user.
Brief Description:	After leaving of any teacher from university he will be deleted from the system.
Actor:	Admin
Precondition:	Teacher/User must be needs to signup here.
Post condition:	The user will be deleted from database.
Main Success Scenario	1. New teacher should be confirmed by Admin. 2. Admin will collect user data properly and provide them to the authority. 3. For changing any information admin must need to notify users.
Scenario Extensions	1. System user must have an username and password. 2. Admin should provide all the information properly. 3. Admin cannot give any confirmation without the decision of the authority.

3.2.3. Login

This use case describes how a teacher/Admin logs into the system.

Table 19: Login

Use Case Name:	Login
Scenario :	Here admin & teacher can login.
Brief Description:	Admin and Teacher can logged into the system.
Actor:	Admin & Teacher
Precondition:	Admin & Teacher must be signup.
Post condition:	If the use case was successful, the actor is now logged into the system. If not the system state is unchanged.
Main Success Scenario	1. System user must be authorized. 2. The user enters userid and password. 3. The system validates the userid and password.
Scenario Extensions	1. If system user is not authorized. 2. If user not registered.

3.2.4. Create Post

Only Teacher can create post. Student can view it by visiting the website & by searching with teacher initial.

Table 20: Create Post

Use Case Name:	Create Post
Scenario :	After creating post by teacher student can view it.
Brief Description:	Teacher can create post by logged in with his valid userid and password.
Actor:	Teacher
Precondition:	Teacher should be logged in.
Post condition:	Post need to create successfully.
Scenario Extensions	1.Teacher should ensure register. 2. Admin should approve the user.
Scenario Extensions	1. If teacher do not register how admin could approve users? So first need to register.

3.2.5. Update Post

Teacher who has already created post by logged in he/she can update his post

By Logged in the system.

Table 21: Update Post

Use Case Name:	Update Post
Scenario :	After creating post teacher can update his/her post.
Brief Description:	A teacher who is approved by admin in the system and who has already create a post in the system then he/she can update it anytime from anywhere.
Actor:	Teacher
Precondition:	Teacher need to existing post before update.
Post condition:	Post need to update successfully.
Scenario Extensions	1.Teacher should ensure logged in. 2. Teacher should ensure about existing post

3.2.6. View Post

After creating or updating post every student can view post by visiting the website and also by searching with teacher initial.

Table 22: View Post

Use Case Name:	View Post
Scenario :	Here students can view post.
Brief Description:	Here student will view updated and existing post.
Actor:	Student
Precondition:	Teacher need to create or update post.
Post condition:	Post must be need to add.
Scenario Extensions	1. Student needs to visit the website. 2. Holidays and updated schedule should be confirmed & checked. 3. Then student can easily view it.

3.2.7. Search Post

After creating or updating post every student can view post by visiting the website and also by searching with teacher initial or with teacher name.

Table 23: Search Post

Use Case Name:	Search Post
Scenario :	Here students can search post.
Brief Description:	Here student will search updated and existing post.
Actor:	Student
Precondition:	Teacher need to create or update post.
Post condition:	Post must be need to add.
Scenario Extensions	1. Students need to search with teacher initial. 2. Students need to search with teacher name.

3.3. Activity Diagram

3.3.1. Activity Diagram for Admin

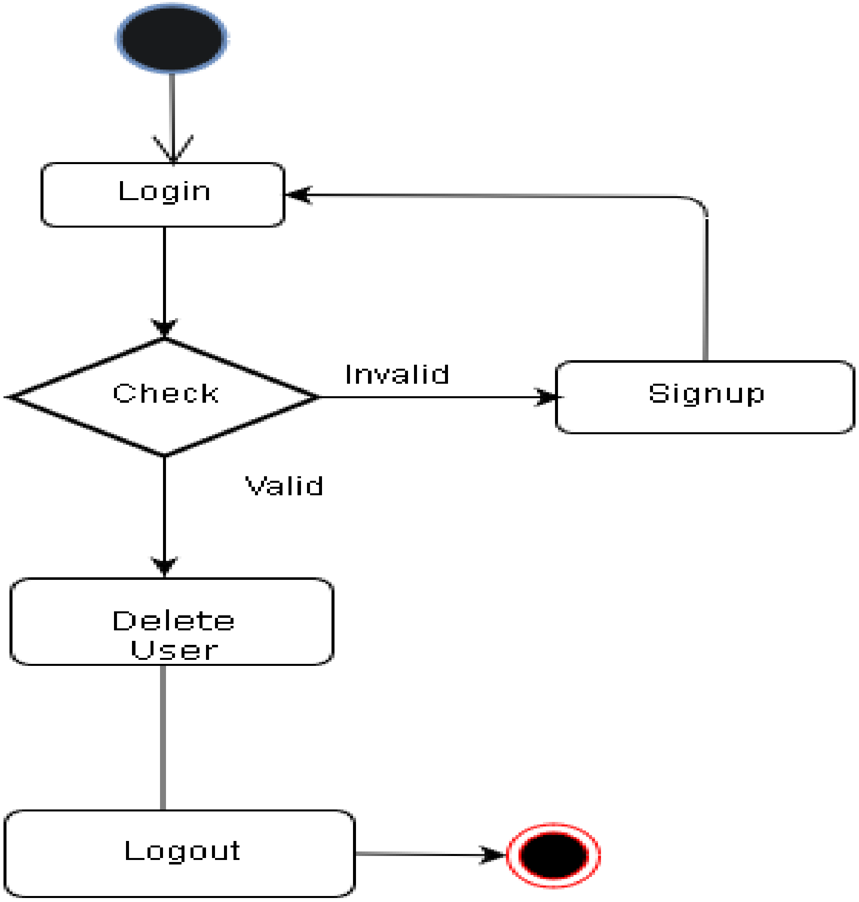


Figure 4: Activity for Admin

3.3.2. Activity for Teacher

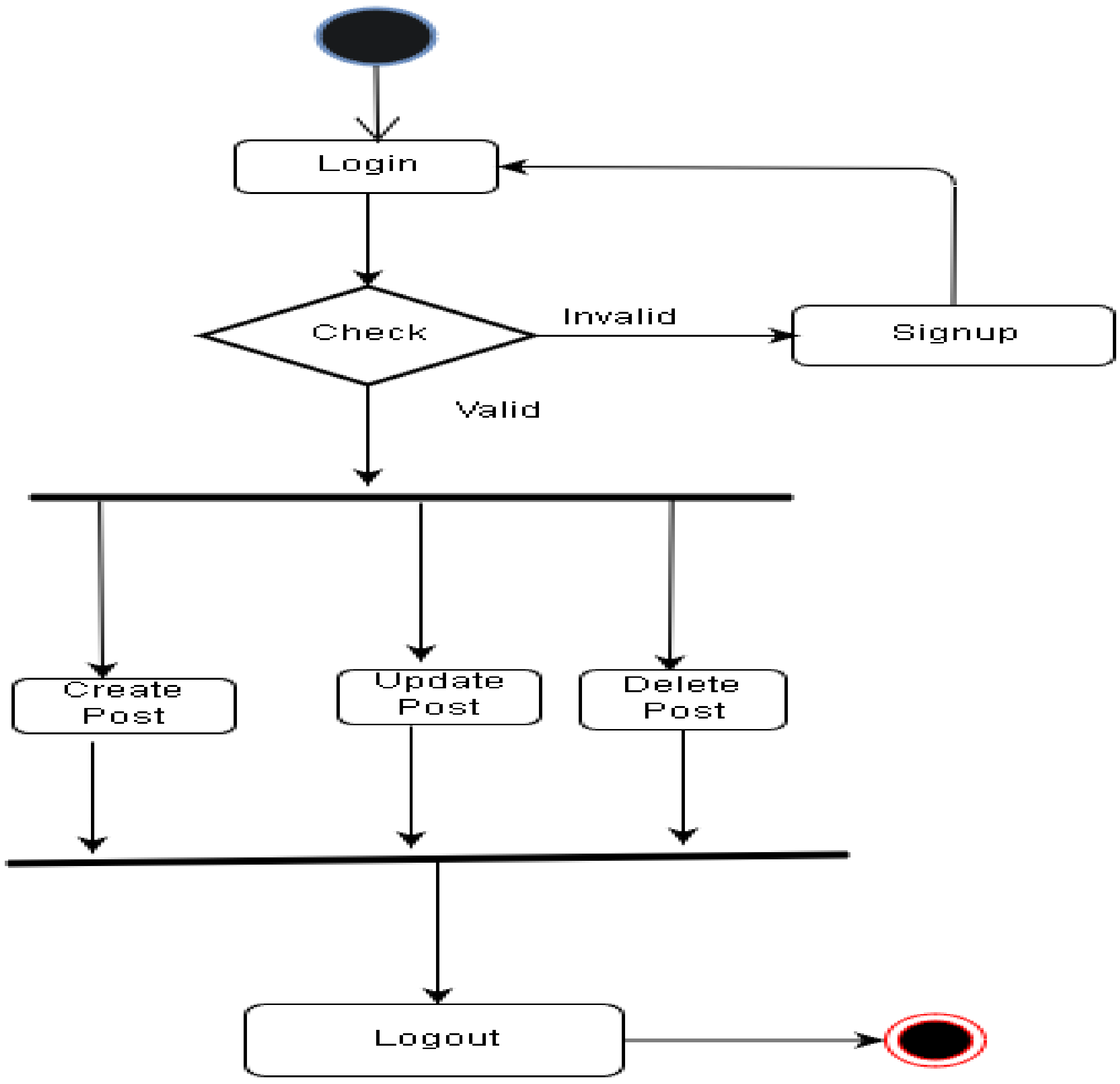


Figure 5: Activity diagram for teacher

3.3.3. Activity for Student

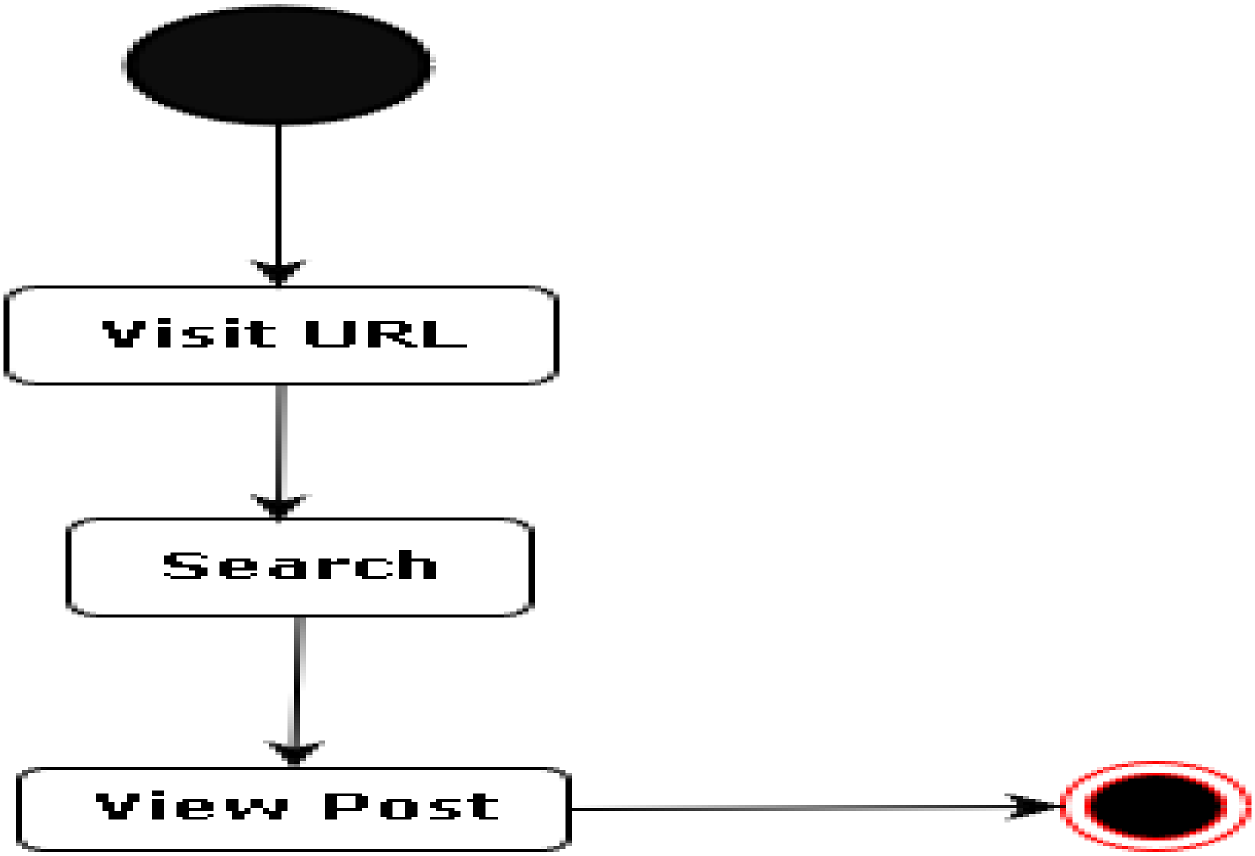


Figure 6: Activity diagram for Student

CHAPTER 04: SYSTEM DESIGN SPECIFICATION

4.1. Sequence Diagram for Registration

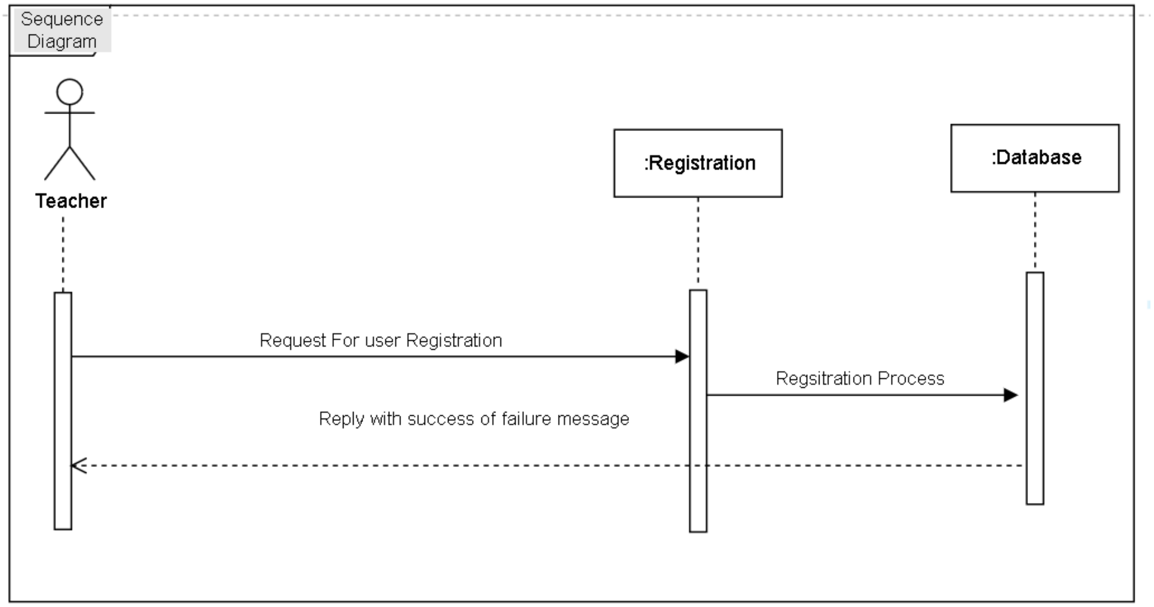

Sequence Diagram
Teacher
:Registration
:Database
Request For user Registration
Regsitration Process
Reply with success of failure message

Figure 7: Registration Sequence Diagram

4.2. Sequence Diagram for Login

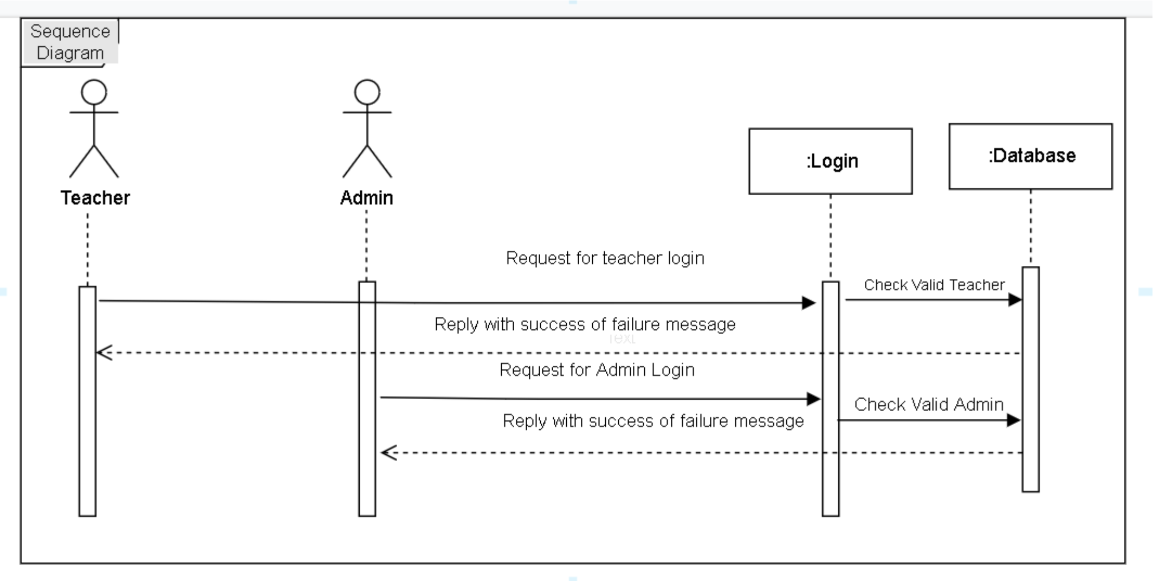


Figure 8: Login Sequence Diagram

4.3. Dataflow Diagram

4.3.1. DFD Level-0

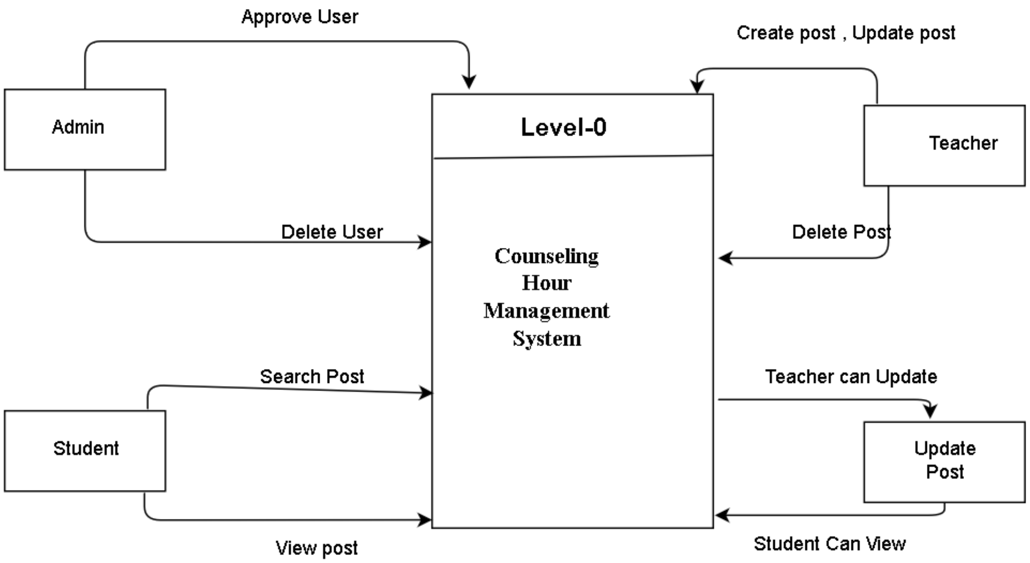


Figure 9: DFD Level-0

4.3.2. DFD Level-1

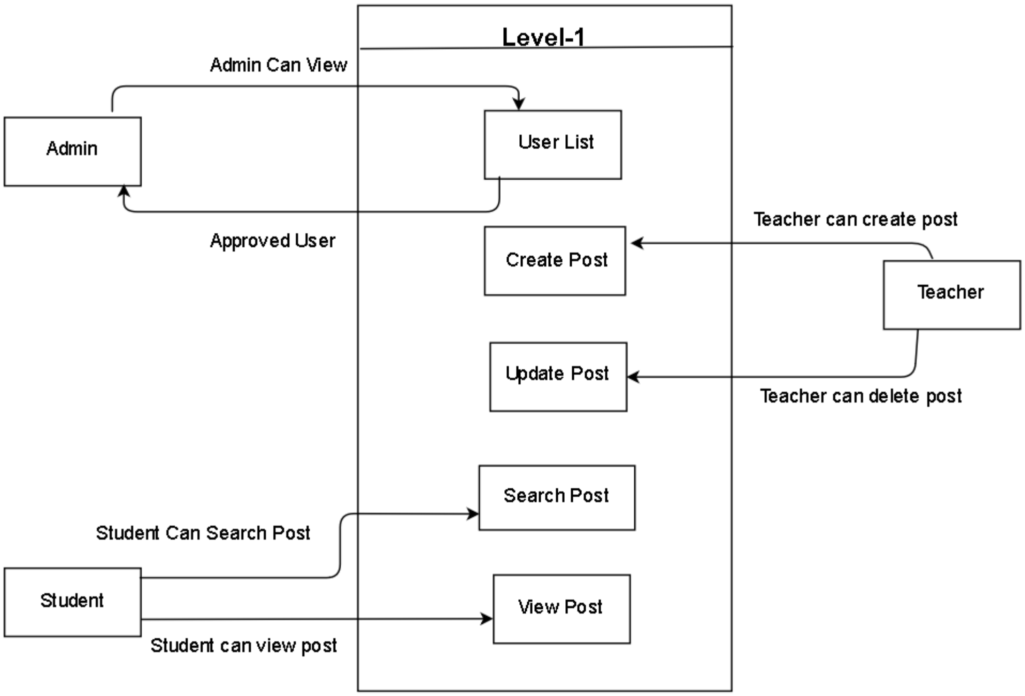


Figure 10: DFD Level-1

4.4. ER Diagram

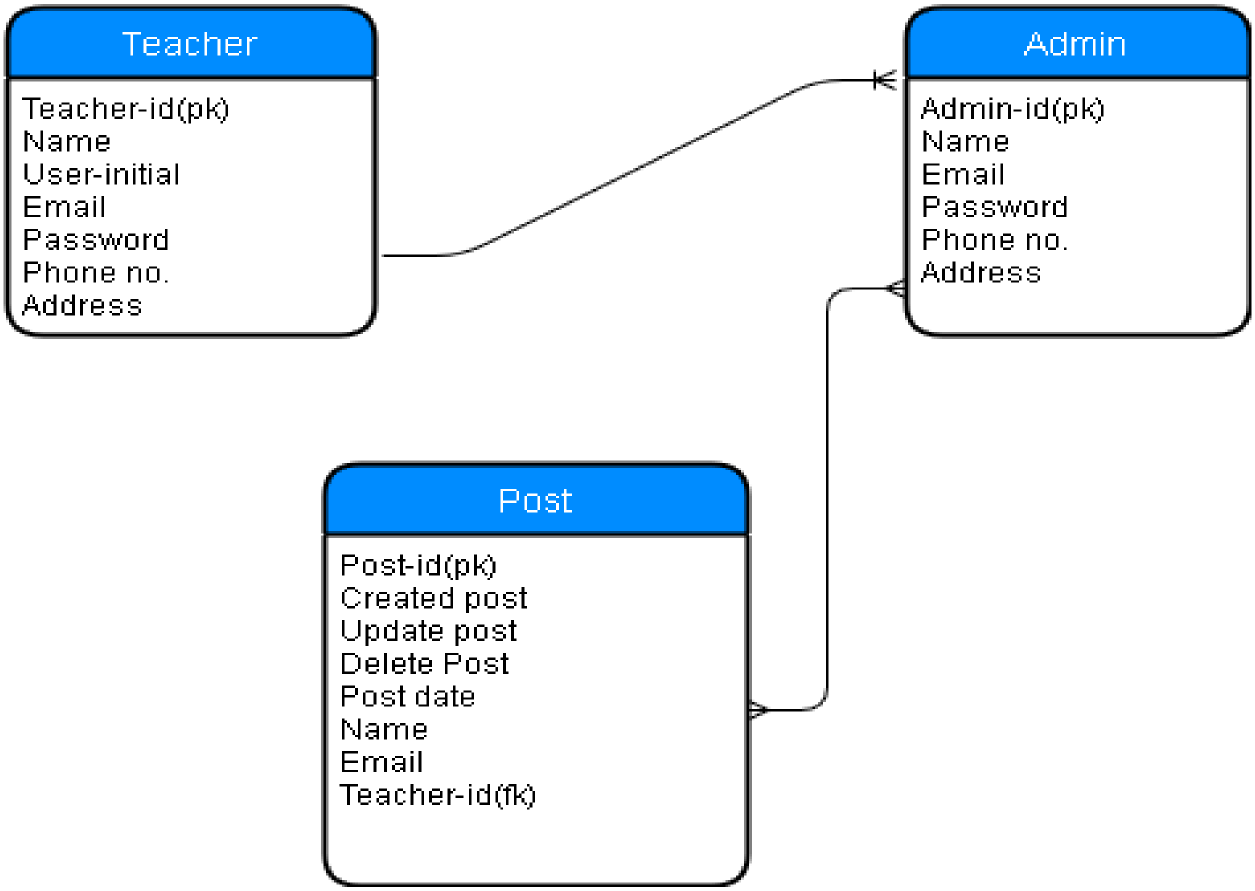


Figure 11: ERD

CHAPTER 05: SYSTEM TESTING

5.1. Introduction

This is aimed at identifying and correcting error. The major objectives of this activity are to ensure that the process done by the application is correct ad meets the objectives of the organization. Test plan aids in effective and systematic testing of the system and it aims at checking the errors of omission and commission that hinders the realization of the objectives.

5.2. Test Plan Strategy

The importance of the test plan is to show how the system is to be tested and also gives precise procedure to be followed during test plan. The test data is identified, what is being tested and the expected outcome as well as actual input. Test plan is one of the standard documents that should be produced in most software engineering projects. If the project does not have any test plan this means that the system produced is low quality. This may not be acceptable to the user it will not satisfy their needs. The test plan should be written as soon as requirements have been identified. The system will be tested with sample data to see how it would handle input and output functions as well as extreme data or conditions to determine the system behavior in overloaded situation which will directly slow the system that behaves in failure or extreme situation.

5.3. Test Case

A test case is a set of conditions or variables under which a tester will determine whether a system under test satisfies requirements or works properly. The process of developing test case can help find problems in the requirements or design of an application.

- Ensure that logical decisions on their true and false side.
- Practice all the logical decisions on their true and false side.
- Check equivalent partitions and boundary value within their operations bounds.
- Exercise internal data structure to assure their validity.

5.3.1. Test Case of Login

Test Case #01	Test Case Name: Testing the login panel.
System: DIUTSCHM	Subsystem: Login
Designed By: Mayen Uddin	Design date: 25.04.19
Executed By: Mayen Uddin	Execute Date:25.04.19
Short Description: This field handle's the login functionality of the website.	
Precondition: Go to http://localhost:/index.	

Table 24: Test case of login

Steps	Action	Action Result	Expected System Response	Pass/Fail
01	Enter valid email and valid password	Get logged in.	Logged in into the system.	Pass
02	Valid email and invalid password	Not logged in and error message.	Not logged in and error message.	Pass
03	Click login without any Data	Required Message	Required message	Fail

5.3.2. Test Case of Sign Up

Test Case #01	Test Case Name: Testing the signup panel.
System: DIUTSCHM	Subsystem: Login
Designed By: Mayen Uddin	Design date: 27.04.19
Executed By: Mayen Uddin	Execute Date:27.04.19
Short Description: This field handle's the login functionality of the website.	

Precondition: Go to http://localhost:/register.

Table 25: Test case of signup

Steps	Action	Action Result	Expected System Response	Pass/Fail
01	Click sign up without any data	Required Message	Required message	Pass
02	Click sign up partially filling with data	Not signed up and required messages.	Not signed up and required messages.	Pass
03	Click sign up with valid data and password less than 6 characters.	Signed up in and error message.	No Required message	Fail
04	Click sign up with valid data and password not matching with confirm password.	Not signed up in and error message.	Not signed up in and error message.	Pass

05	Click sign up with valid data and password.	Signed up and redirected to main landing page.	Signed up and redirected to main landing page.	Pass

5.3.3. Test Case of Create Post

Test Case #01	Test Case Name: Testing the create post.
System: DIUTSCHM	Subsystem: Login
Designed By: Mayen Uddin	Design date: 27.04.19
Executed By Mayen Uddin	Execute Date:27.04.19
Short Description: This field handle's the login functionality of the website.	
Precondition: Go to http://localhost:/	

Table 26: Test case of update post

5.3.4. Test Case of Update Post

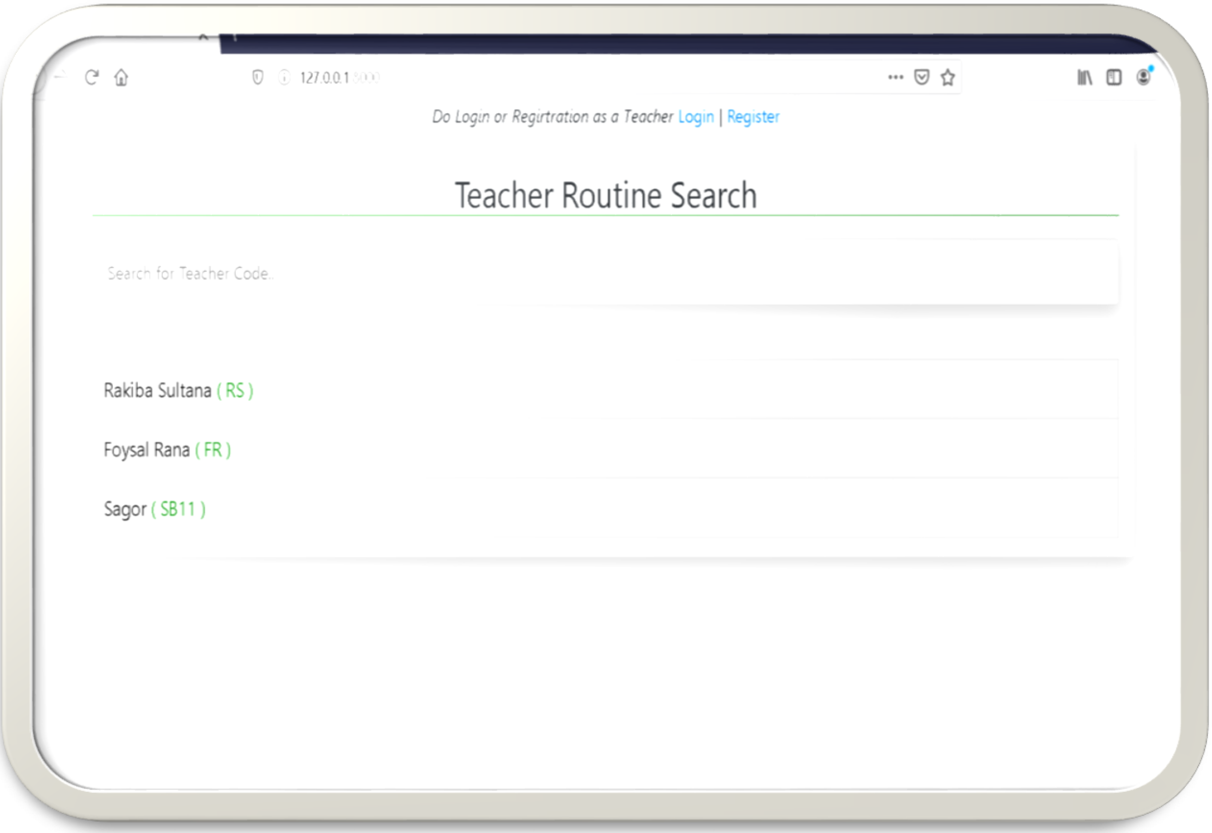
Test Case #01	Test Case Name: Testing the Update post.
System: DIUTSCHM	Subsystem: Login
Designed By: Mayen Uddin	Design date: 27.04.19
Executed By: Mayen Uddin	Execute Date:27.04.19
Short Description: This field handle's the login functionality of the website.	

CHAPTER 06: USER INTERFACE AND MANUALS

6.1. User Interface

6.1.1. Home Page

By visiting any user user-interface looks like below. From here student can see their desired counseling hour. Teacher also can login and registration from here.



Do Login or Regirtration as a Teacher Login | Register

Teacher Routine Search

Search for Teacher Code..

Rakiba Sultana (RS)

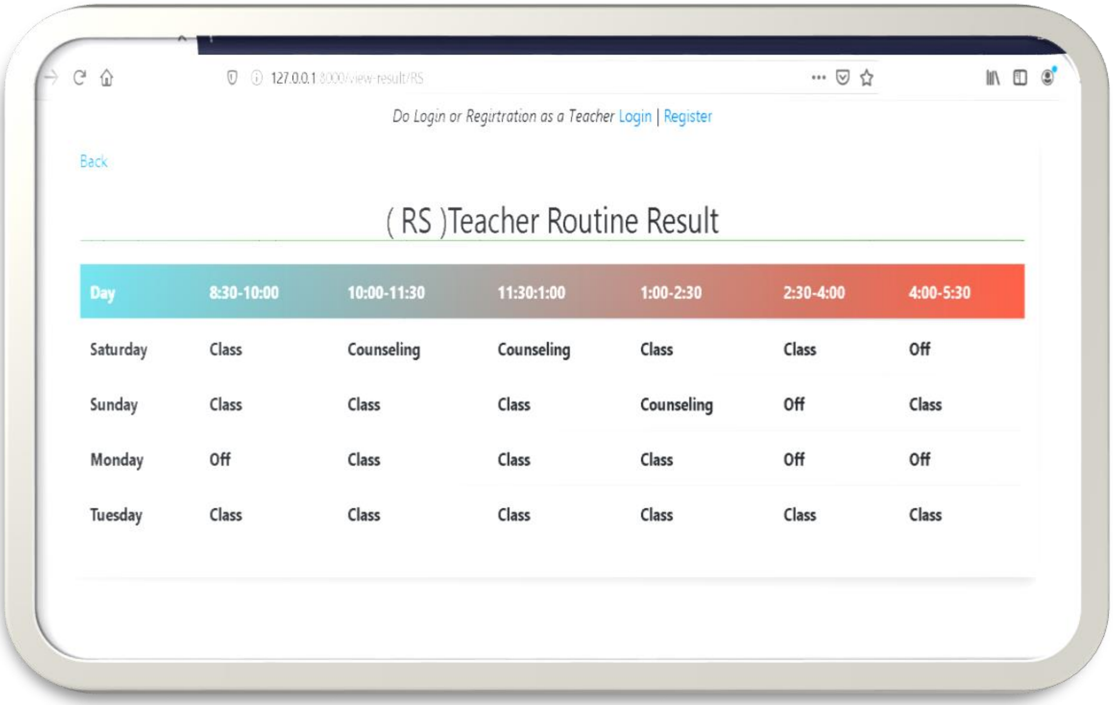
Foysal Rana (FR)

Sagor (SB11)

Figure 12: Home Page

6.1.2. View Post

From Home Page by clicking teacher’s name they can get their desired teacher counseling hour. Students also can search the counseling hour with teacher’s name or teachers initial.



Do Login or Regirtration as a Teacher Login | Register

Back

(RS)Teacher Routine Result

Day	8:30-10:00	10:00-11:30	11:30:1:00	1:00-2:30	2:30-4:00	4:00-5:30
Saturday	Class	Counseling	Counseling	Class	Class	Off
Sunday	Class	Class	Class	Counseling	Off	Class
Monday	Off	Class	Class	Class	Off	Off
Tuesday	Class	Class	Class	Class	Class	Class

Figure 13: Counseling Hour

6.1.3. Teacher Sign in Page

This is Teacher's login page. Any registered teacher can easily log in to the system simply giving the credentials in the field of username and password.

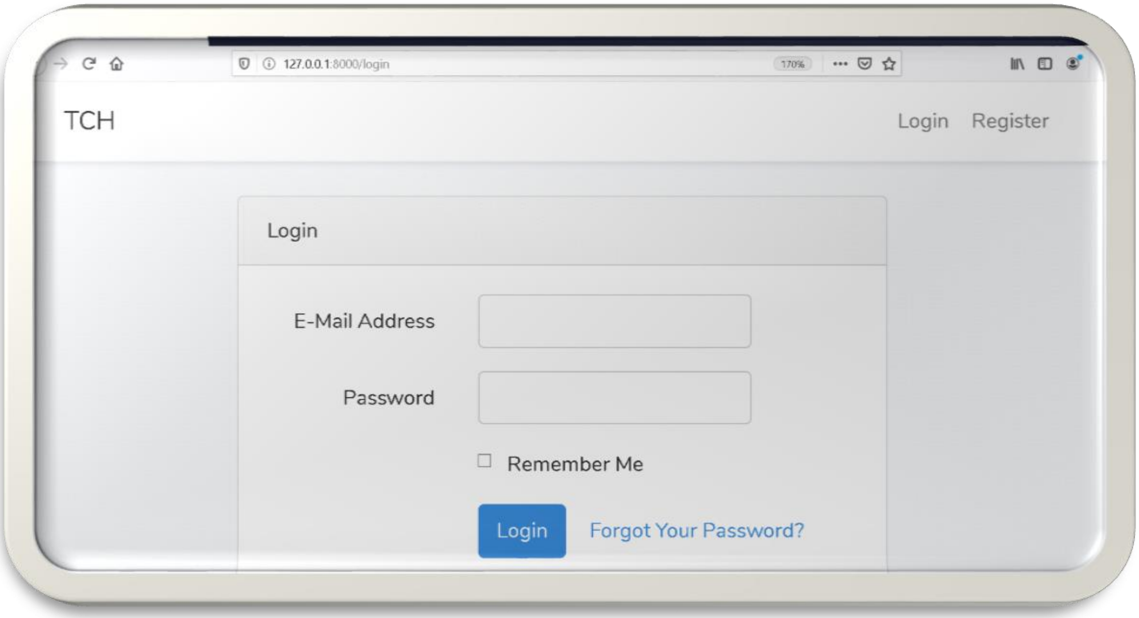


Figure 14: Sign in page

6.1.4. Admin Sign in Page

This is admin login page. Any admin can easily log in to the system simply giving the credentials in the field of username and password.

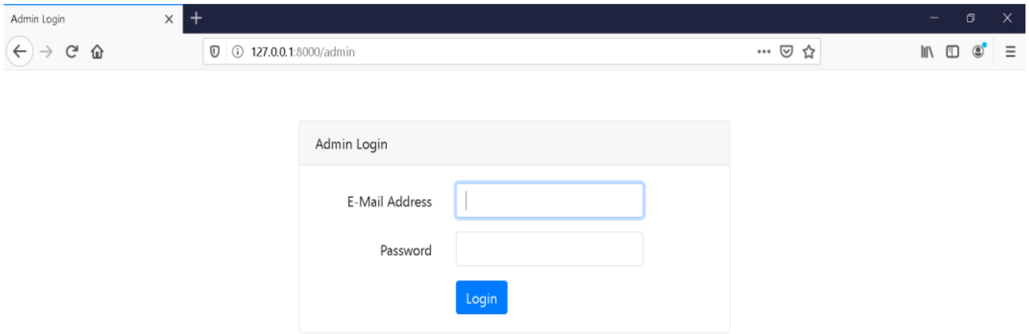


Figure 15: Admin Sign in page

6.1.5. Teacher Registration Page

This is the page from where teacher can registration or create account.

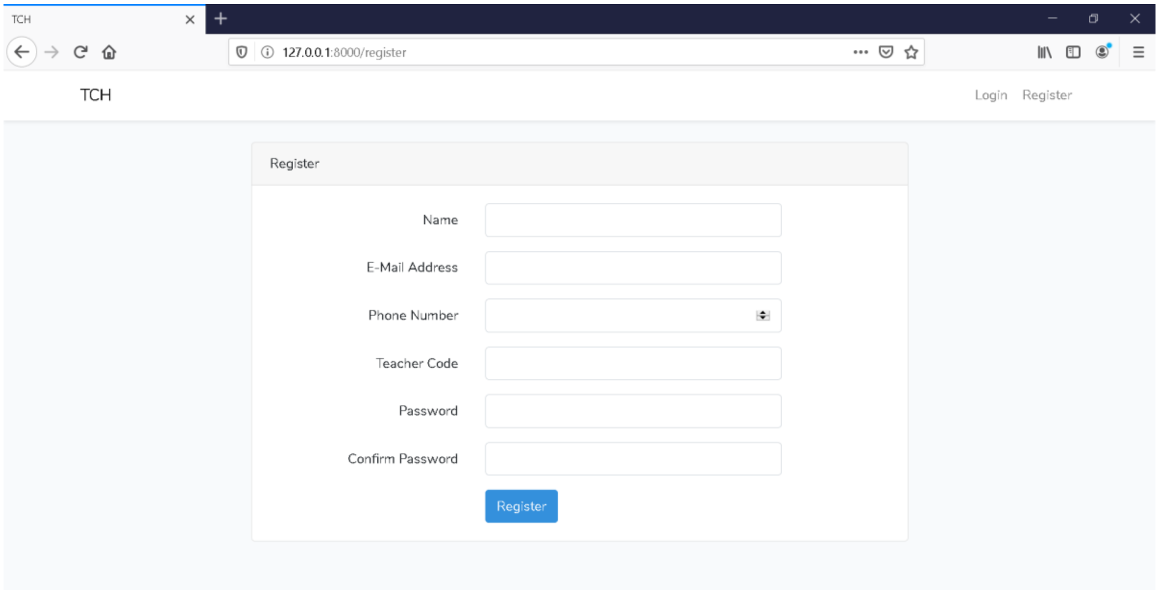
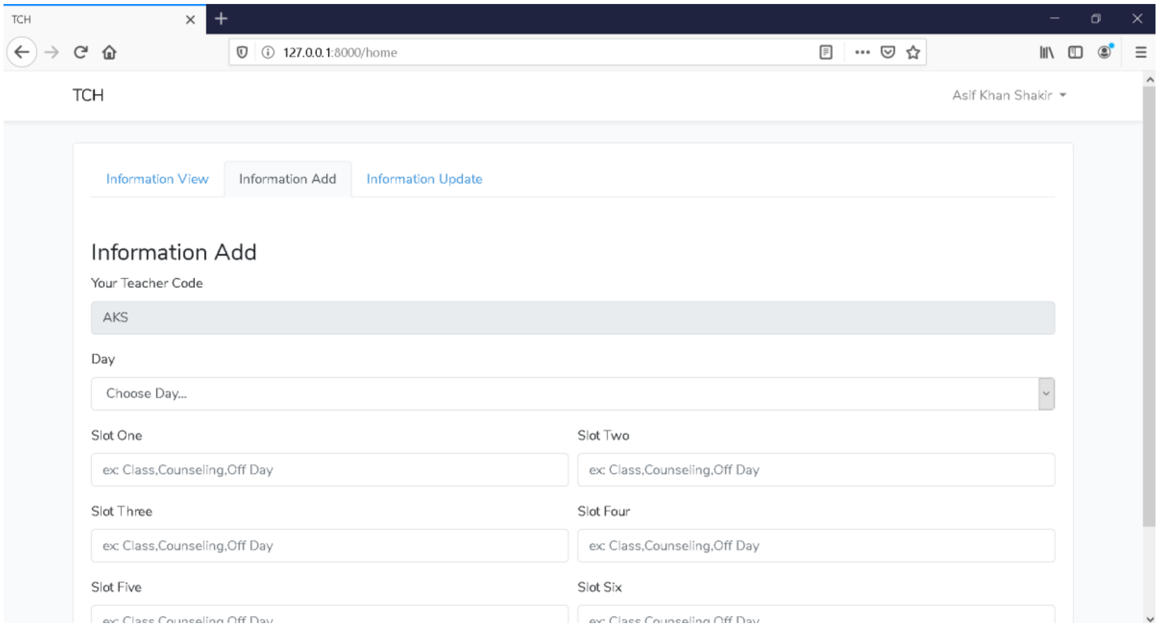


Figure 16: Teacher Registration Page

6.1.6. Teacher Info view, create post & Update Post page

From this page by logged in teacher can create their post and they can update their counseling hour any time.



Information Add

Your Teacher Code

AKS

Day

Choose Day...

Slot One

ex: Class,Counseling,Off Day

Slot Two

ex: Class,Counseling,Off Day

Slot Three

ex: Class,Counseling,Off Day

Slot Four

ex: Class,Counseling,Off Day

Slot Five

ex: Class,Counseling,Off Day

Slot Six

ex: Class,Counseling,Off Day

Figure 17: Teacher Info update

CHAPTER 07: DEVELOPMENT TOOLS & TECHNOLOGIES

7.1. User Interface Technologies

- PHP, HTML5, CSS3, JavaScript, SQL
- jQuery 3.4.1
- Bootstrap
- Font Awesome, Flat Icons

7.2. Implementation Technologies

7.2.1. Xampp (11.3.0)

Xampp is a free and open-source cross-platform web server solution stack package Developed by Apache Friends, consisting mainly of the Apache HTTP Server, Maria DB Database, and interpreters for scripts written in the PHP and Perl programming languages.

7.2.2. NPM (5.7.1)

NPM is the package manager for JavaScript and the world's largest software registry. Discover packages of reusable code and assemble them in powerful new ways.

7.2.3. PhP (4.16.4)

PHP is Hypertext Preprocessor is a general-purpose programming language originally

Designed for web development.

7.2.4. MySQLi (4)

MySQLi is a free and open-source cross-platform document-oriented database program. Classified as a NoSQL database program, MySQL uses JSON-like documents with schemata. MySQL is developed by SQL Inc., and is published under a combination of the Server Side Public License and the Apache License

7.3. Platform & Environment

7.3.1. Hardware

- Processor: Intel Core i5.
- RAM: 4GB.
- Hard drive: 1TB.
- Ubuntu 14.04./ Windows 8.1/Windows 10

7.3.2. Tools

- IDE/Editor: Visual Studio Code, Notepad++, Sublime Text3
- Cmder Terminal
- Robo 3T MySQL client
- Server: Localhost:3000

7.3.3. Version Control

- Git

CHAPTER 08: PROJECT SUMMARY

8.1. Limitations

- The system is only for University Department perspective.
- The system does not able to sign in by other people.
- The system needs high speed internet.

8.2. Obstacle & Achievements

Obstacle:

- Learning new technology and new environment
- Limited time and budget

Achievements

- Learnt new technology
- Successfully build a project for corporate level

8.3. Conclusion

Despite the hardship s encountered in the entire development process the system has been developed for online management system thus enabling it improves its efficiency and effectiveness. Maintenance and usage of the system will be easy as the document and user manual of the system will be available to all users. Also there will be room for enhancement as this was considered during development.

8.4. Future Work

Though the system was developed as fine but the future work will include some more major changes. Payment gateway will be integrated real time communication media like chat, email notification will be introduced

Key of Terms

REFERENCES

[1]. Database ER Diagram Design. (Access 02 November 2019 at 10:00pm)

Link: https://erdplus.com/standalone.

[2]. Activity Diagram, Use Case diagram, Class Diagram (Access 06 November 2019 at 09:01pm)

Link: https://online.visual-paradigm.com/drive/#diagramlist:proj=0&new.