



Daffodil International University

**Department of
Software Engineering, FSIT
SWE-431 Project/Thesis
Alumni Portal**

Supervised by:

Ms. Syeda Sumbul Hossain

Senior Lecturer

Department of Software Engineering

Daffodil International University

Submitted by:

Md. Ishak Ahammed

152-35-1162

Department of Software Engineering

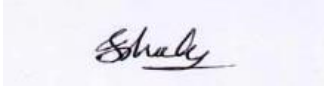
Daffodil International University

APPROVAL

This Project titled “**Alumni Portal**”, submitted by Md. Ishak Ahammed (152-35-1162) to the Department of Software Engineering; Daffodil International University has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of B.Sc. in Software Engineering and approved as to its style and content.

DECLARATION

I hereby declare that, this project has been done by me under the supervisor of **Ms. Syeda Sumbul Hossain**, Senior Lecturer, Department of Software Engineering, Daffodil International University. I also declare that neither this project nor any part of this project has been submitted elsewhere for award of any degree or diploma.



Md. Ishak Ahammed

ID: 152-35-1162

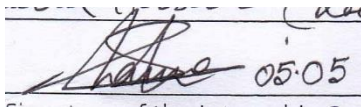
Batch: 17th

Department of Software Engineering

Faculty of Science and Information Technology

Daffodil International University

Certified by:



Ms. Syeda Sumbul Hossain

Senior Lecturer

Department of Software Engineering

Faculty of Science and Information Technology

Daffodil International University

ACKNOWLEDGEMENT

First of all I would like to thank almighty Allah for giving me the patience and proper time to complete the project successfully. It is pleasure to take this occasion to thank a few people who have assisted, encouraged and supported throughout the project life cycle.

I would like to thank the DIU authority for coming up with this outstanding course offering in the last semester of the SWE course. From the beginning of the program we have learned the software development life cycle and have a chance to practice those rules at the last semester. Now, I find myself introduced and practical in practicing the software development life cycle.

My heartily thank goes to all the faculty members of SWE for their constant support providing information about the project as the project is related to SWE. A special thanks goes to **Ms. Syeda Sumbul Hossain**, Senior lecturer, department of Software Engineering, Daffodil International University, for her fantastic idea and excellent guidance that has made this project successful.

ABSTRACT

“Alumni Portal” is an interactive portal where students and alumni can communicate with each other. Students will get benefits from the alumni job post. Alumni can help students for that post after analyzing the student details. Students and alumni record will be saved on their detailed profile. By integrating all students and alumni in one place it will make many works and decision easier for both alumni and students. After researching and implementing all the functions, the system is built and tested in real life and works successfully.

Table of Contents

APPROVAL.....	ii
DECLARATION	iii
ACKNOWLEDGEMENT	iv
ABSTRACT	v
Table of Contents	vi
List of figures.....	ix
List of tables	xi
Chapter 1: Introduction	1
1.1 Project Overview	2
1.2 Project Purpose	2
1.3 Background.....	3
1.4 Beneficiaries and Benefits	3
1.5 Stakeholders.....	3
1.6 Project Schedule	4
1.7 Release Plan	4
Chapter 2: System Analysis.....	5
2.1 Requirement Analysis	6
2.2 Requirement Gathering	6
2.3 Requirement Specification	6
2.3.1 Functional Requirement	6
2.3.2 Non-Functional Requirement	9
2.4 Use Case of Proposed System	11
2.4.1 Use Case Diagram.....	11
2.4.1 Use Case Table	12
Chapter 3: System Design	15
3.1 Introduction.....	16
3.2 Activity Diagram	16
3.2.1 Student Activity Diagram.....	16
3.2.2 Alumni Activity Diagram.....	17
3.2.3 Admin Activity Diagram.....	18
3.3 ER diagram	19

3.4 Class diagram.....	20
3.5 Data flow diagram	21
3.5.1 DFD Level 0	21
3.5.2 DFD Level 1	22
3.6 Conclusion	22
Chapter 4: Development	23
4.1 Tools and Technology	24
4.2 Reason behind choosing	24
4.2.1 In General	24
4.2.2 On perspective of this project	24
Chapter 5: System Test	25
5.1 Testing Features	25
5.2 Features to be tested	26
5.3 Testing Strategy	26
5.4 Test approach	26
5.4.1 Black Box Testing.....	27
5.4.2 Equivalent Class Partition	27
5.4.3 Boundary Value Analysis	27
5.4.4 White Box Testing	27
5.5 Pass/ Fail Criteria	28
5.6 Testing Schedule	28
5.7 Testing Environment.....	29
5.8 Test Case	29
Chapter 6: User Manual.....	37
6.1 Home page	38
6.2 Registration	38
6.3 Log In.....	39
6.4 Student Dashboard	39
6.5 Apply for Job.....	40
6.6 Cancel Application	40
6.7 Comment.....	41
6.8 Selection Notification.....	41
6.9 User Profile.....	42
6.10 Post Job	42

6.11 Modify Post	43
6.12 View Applicant List.....	44
6.13 View Student List (Alumni Perspective)	44
6.14 Message	45
6.15 Update Profile.....	45
6.16 Admin Dashboard	46
6.17 Approve as Alumni.....	47
6.18 Manage Alumni.....	47
Chapter 7: Conclusion.....	48
7.1 GitHub Link	49
7.2 Project Summary	49
7.3 Limitations.....	49
7.4 Obstacle and Achievements.....	49
7.5 Future Scope.....	50
7.6 References.....	50

List of figures

2.4.1: Use Case Diagram.....	11
3.2.1: Student Activity Diagram	16
3.2.2: Alumni Activity Diagram	17
3.2.3: Admin Activity Diagram	18
3.3: Entity Relationship Diagram	19
3.4 Class Diagram.....	20
3.5.1 Data Flow Diagram (level 0)..	21
3.5.2 Data Flow Diagram (level 1).....	22
6.1 Home Page	38
6.2 Registration.....	38
6.3 Login	39
6.4 Student Dashboard.....	39
6.5 Apply for Job	40
6.6 Cancel Application	40
6.7 Comment	41
6.8 Selection Notification	41
6.9 User Profile	42
6.10.1 Post Job (fields).....	42
6.10.2 Post Job (button)	43
6.11 Modify Post	43
6.12 View Applicant List	44
6.13 View Student List	44
6.14 Message	45
6.15.1 Update Profile (fields)	45
6.15.2 Update Profile (button)	46

6.16 Admin Dashboard.....	46
6.17 Approve as Alumni.....	47
6.18 Manage Alumni.....	47

List of tables

Table 1.6: Project Schedule.....	4
Table 1.7: Release Plan.....	4
Table 2.3.1.1: Login/Logout.....	6
Table 2.3.1.2: User Registration.....	6
Table 2.3.1.3: Post Job.....	7
Table 2.3.1.4: Apply for Job.....	7
Table 2.3.1.5: Comments.....	7
Table 2.3.1.6: View Profile.....	7
Table 2.3.1.7: View Applied Students.....	7
Table 2.3.1.8: Edit Profile.....	7
Table 2.3.1.9: Cancel Application.....	8
Table 2.3.1.10: Send Messages.....	8
Table 2.3.1.11: View Students.....	8
Table 2.3.1.12: Modify Post.....	8
Table 2.3.1.13: Delete User.....	8
Table 2.3.1.14: Promote Students to Alumni.....	8
Table 2.3.2.1: Data Capacity.....	9
Table 2.3.2.2: Reliability & Availability.....	9
Table 2.3.2.3: Robustness.....	9
Table 2.3.2.4: Maintainability.....	9
Table 2.3.2.5: Integrity and Privacy.....	9
Table 2.3.2.6: Interface Requirement.....	10
Table 2.4.1.1: Login User.....	12
Table 2.4.1.2: Logout User.....	12
Table 2.4.1.3: Register User.....	12
Table 2.4.1.4: Post Job.....	12

Table 2.4.1.5: Call for Interview.....	13
Table 2.4.1.6: Apply Job.....	13
Table 2.4.1.7: View Applied Student.....	13
Table 2.4.1.8: Comment in Post.....	13
Table 2.4.1.9: Update Profile.....	13
Table 2.4.1.10: Send Message.....	14
Table 2.4.1.11: Approve as Alumni.....	14
Table 2.4.1.12: Delete User.....	14
Table 5.2: Features to be tested.....	26
Table 5.6: Testing Schedule.....	28
Table 5.8.1: Login.....	30
Table 5.8.2: Logout.....	30
Table 5.8.3: Register.....	31
Table 5.8.4: Post Job.....	32
Table 5.8.5: Apply Job.....	32
Table 5.8.6: View Applied Student.....	33
Table 5.8.7: Call for interview.....	33
Table 5.8.8: Comment.....	34
Table 5.8.9: Send Message.....	35
Table 5.8.10: Approve as alumni.....	35
Table 5.8.11: Delete User.....	36

Chapter 1: Introduction

1.1 Project Overview

In this era technology is improving day by day and various organizations use technology for their own advantage. If we look at our data, it's increasing day by day. To maintain or control this large data we need help of our technology. The number of students and alumni will increase day by day and to maintain a good relation between them and also to keep their data safe or control their data, we need to have an interactive portal.

Alumni portal will establish a good communication between the alumni and students. It will also build a great relation between them. For some reason most of the students doesn't even know their alumni and alumni also are not in touch of students. If a student needs a proper guideline from alumni it's very difficult to communicate with them and they can't reach to everyone in time.

If an alumnus wants to help students in job offering then he also faces some problem. As he is not connected with all the students he will not get the most qualified student for that purpose. Also if the alumnus wants to help a student with guideline he can't do it properly without connecting with them.

Also students are not aware of real life job. If they get the job offerings from alumni they will get an idea about current job offerings and also they can set their goal easily. They can get an idea on which skill is must and how much they need to improve their skills. Thus they can prepare themselves for real life job.

For these reasons I'm going to make an interactive alumni portal which will not only allow the students to get the proper guideline but also help to get a job offer. By using this portal both students and alumni will get benefits and can keep a good communication between them. Alumni can post job and students can apply on it, and all the process would be done within a few seconds.

1.2 Project Purpose

The main purpose of this project named "Alumni Portal" is to make an interactive portal which might be helpful for both students and alumni as their need. It will help not only create a good communication but also help the students to make any essential decision for their career goal.

1.3 Background

As a student I noticed that, students of our university facing a lot of problem for setting up their goal, they have no idea about real life job. To get some idea of real life job they need some help of our respected alumni and they are also having some problem to communicate with our alumni. Considering that I thought that this project is going to solve this problem.

1.4 Beneficiaries and Benefits

This application would be beneficial for some point of view. Now, I am mentioning some benefits below:

- This system will help to keep a good communication between alumni and students.
- It will help students to get an idea about real life job.
- Alumni can help student by posting job offerings.
- Students can apply on job offerings posted by the alumni.
- Students can get a clear idea of which skill is preferred most.
- Alumni can give the right job offerings call to right student.
- Alumni can check students' detailed profile.
- Alumni can easily identify qualified student.
- Students can upload their CV.
- Alumni can control their own post.
- Alumni and students both can message each other for communication.
- Students can comment on job post for details.
- Admin can control both students and alumni.

1.5 Stakeholders

There are three types of stakeholders in “Alumni Portal” project. Such as:

- Alumni.
- Students.
- University Authority.

Brief descriptions about stakeholders are given below.

Alumni: Alumni can post job offerings. They can edit or delete their own post. Also they can view students list and who are applied for job. They can view students' detailed profile and can select a student for the interview. Alumni can message students.

Students: Students can apply on the job post. They can also cancel their application. They can upload CV and edit their profile. Also they can check alumni lists and their profile. Students can also message alumni and comment on post.

University Authority: University Authority plays admin role in this system. They can control alumni and students.

1.6 Project Schedule

To complete this project on time I need to prepare a project schedule. It helps to remind what task needs to do within timeframe.

Table 1.6: Project Schedule

Activities	Duration (in week)	Total week
Brainstorming	Week 1	1
Problem identification	Week 1, Week 2	2
Requirement specification	Week 2	1
Requirement analysis	Week 2, Week 3	2
Design specification	Week 4	1
Quality assurance	Week 4	1
Database design	Week 5	1
Student portion	Week 5, Week 6, Week 7, Week 8,	4
Alumni & admin portion	Week 10, Week 11, Week 12, Week 13,	4
Test case	Week 4, Week 8, Week 10,	3
Unit testing	Week 13	1
Black-box testing	Week 14, Week 15	2
Software release	Week 16	1

1.7 Release Plan

The release plan is given below:

Table 1.7: Release Plan

Version	Feature	Date
v0.1	Multiple login, post & apply job	31-01-2019
v0.2	Manage user, message, comment	04-05-2019

Chapter 2: System Analysis

2.1 Requirement Analysis

Requirements are needed for new or modified products and requirements are analyzed according to user exceptions and actual basis. Quantifiable, relevant and detailed requirement is must. Requirement analysis is done by gathering and specifying them.

2.2 Requirement Gathering

Generally requirements are gathering by brainstorming, interviews, user observation, questionnaires and document research. These requirements are identify according relevant area.

By meeting with my supervisor I listed the requirements from our perspective. Luckily my supervisor is one of alumnus or our university and I am a student of that university, so it was easy to collect real life requirements from us.

2.3 Requirement Specification

2.3.1 Functional Requirement

Functional requirements are those functions which are mandatory for the system. For this system functional requirements are mentioned below.

Table 2.3.1.1: Login/Logout

ID: FR-01
Requirement: Login/Logout.
Description: User can login with their username & password and can logout any time.
Stockholders: All users.

Table 2.3.1.2: User Registration

ID: FR-02
Requirement: User Registration.
Description: User can register with their email and password.
Stockholders: Alumni, Students.

Table 2.3.1.3: Post Job

ID: FR-03
Requirement: Post Job.
Description: After login alumni can post job.
Stockholders: Alumni.

Table 2.3.1.4: Apply for Job

ID: FR-04
Requirement: Apply for job.
Description: Logged in students can apply for the job posted by alumni.
Stockholders: Students.

Table 2.3.1.5: Comments

ID: FR-05
Requirement: Comments.
Description: Logged in user can comment on job post.
Stockholders: Alumni, Students.

Table 2.3.1.6: View Profile

ID: FR-06
Requirement: View Profile.
Description: Logged in user can view profile.
Stockholders: Alumni, Students.

Table 2.3.1.7: View Applied Students

ID: FR-07
Requirement: View Applied Students
Description: Logged in alumni can view who has applied for specific job.
Stockholders: Alumni.

Table 2.3.1.8: Edit Profile

ID: FR-08
Requirement: Edit Profile.
Description: Logged in user can edit their own profile.
Stockholders: Alumni, Students.

Table 2.3.1.9: Cancel Application

ID: FR-09
Requirement: Cancel Application.
Description: Applied student can cancel his application.
Stockholders: Students.

Table 2.3.1.10: Send Messages

ID: FR-10
Requirement: Send Messages.
Description: Logged in users can send messages.
Stockholders: Alumni, Students.

Table 2.3.1.11: View Students

ID: FR-11
Requirement: View Students
Description: Logged in user can view student lists.
Stockholders: Alumni, Admin.

Table 2.3.1.12: Modify Post

ID: FR-12
Requirement: Modify Post.
Description: Alumni can modify their own post
Stockholders: Alumni.

Table 2.3.1.13: Delete User

ID: FR-13
Requirement: Delete User.
Description: Admin can delete users.
Stockholders: Admin.

Table 2.3.1.14: Promote Students to Alumni

ID: FR-14
Requirement: Promote Students to Alumni.
Description: Admin can make a graduate student to alumnus.
Stockholders: Admin.

2.3.2 Non-Functional Requirement

For this system non-functional requirements are mentioned below.

Table 2.3.2.1: Data Capacity

ID: NFR-01
Requirement: Data Capacity.
Description: This system need to handle thousands of data.
Stockholders: Alumni, Students.

Table 2.3.2.2: Reliability & Availability

ID: NFR-02
Requirement: Reliability and Availability.
Description: The system must be available 24x7 hours.
Stockholders: All users.

Table 2.3.2.3: Robustness

ID: NFR-03
Requirement: Robustness.
Description: System has to handle thousand of user access without crashing.
Stockholders: All users.

Table 2.3.2.4: Maintainability

ID: NFR-04
Requirement: Maintainability.
Description: Logged in students can apply for the job posted by alumni.
Stockholders: All users.

Table 2.3.2.5: Integrity and Privacy

ID: NFR-05
Requirement: Integrity and Privacy.
Description: System has to protect user data and confidential information like password should be hashed.
Stockholders: All users.

Table 2.3.2.6: Interface Requirement

ID: NFR-06
Requirement: Interface Requirement.
Description: System should be user friendly for all users. Interface font, look and appearance must be clear and user friendly.
Stockholders: All users.

2.4 Use Case of Proposed System

2.4.1 Use Case Diagram

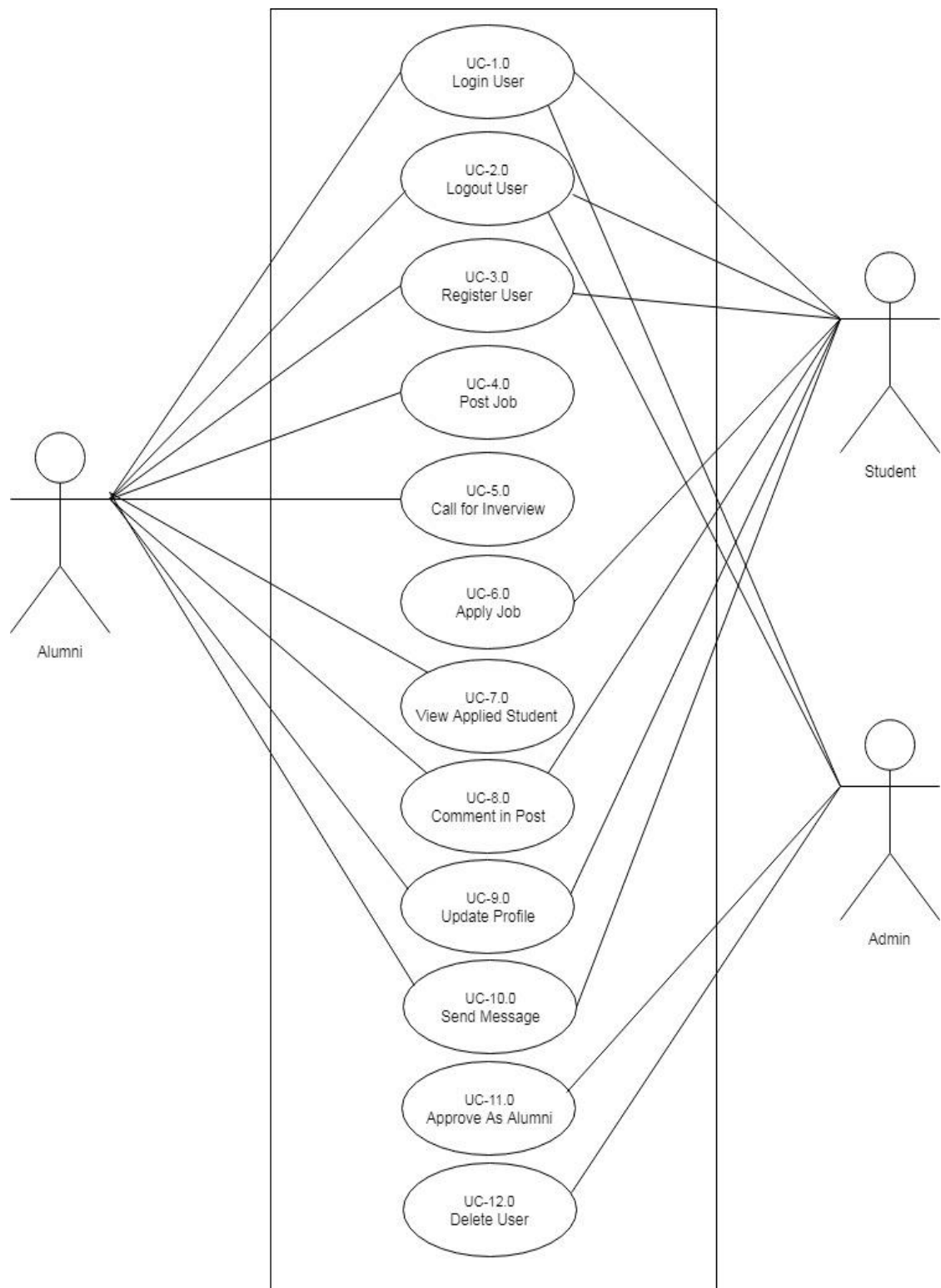


Figure 2.4.1: Use Case Diagram

2.4.1 Use Case Table

Table 2.4.1.1: Login User

Use Case Name:	Login User
Actors:	Alumni, Admin, Student
Preconditions:	Have a valid registered account.
Post Conditions:	Successfully login to system.
Primary Scenario:	• Access login page • Insert valid email and password

Table 2.4.1.2: Logout User

Use Case Name:	Logout User
Actors:	Alumni, Admin, Student
Preconditions:	Have to already logged into system.
Post Conditions:	Successfully logout from system.
Primary Scenario:	• Click on logout button

Table 2.4.1.3: Register User

Use Case Name:	Register User
Actors:	Alumni, Student
Preconditions:	Should have a valid email.
Post Conditions:	User account created message.
Primary Scenario:	• Access registration page. • Insert valid email and password

Table 2.4.1.4: Post Job

Use Case Name:	Post Job
Actors:	Alumni
Preconditions:	Logged in as an alumnus.
Post Conditions:	Job posted.
Primary Scenario:	• Access post job page. • Fill all text area requirements. • Set deadline.

Table 2.4.1.5: Call for Interview

Use Case Name:	Call for Interview.
Actors:	Alumni.
Preconditions:	Logged in as alumni and a student applied for that job.
Post Conditions:	Success message.
Primary Scenario:	• Access alumni job post • View applied students. • Click on call for interview.

Table 2.4.1.6: Apply Job

Use Case Name:	Apply Job.
Actors:	Student.
Preconditions:	Logged in as student.
Post Conditions:	Applied messages.
Primary Scenario:	• Access to job post • Click on apply button.

Table 2.4.1.7: View Applied Student

Use Case Name:	View Applied Student
Actors:	Alumni.
Preconditions:	Logged in as alumni
Post Conditions:	View applied student list.
Primary Scenario:	• Access alumni job post • Click on view applied students.

Table 2.4.1.8: Comment in Post

Use Case Name:	Comment in Post
Actors:	Alumni, Student.
Preconditions:	Logged in as alumni or student
Post Conditions:	Successfully comment added.
Primary Scenario:	• Access job post. • Type comment on comment box.

Table 2.4.1.9: Update Profile.

Use Case Name:	Update profile.
Actors:	Alumni, Student.
Preconditions:	Logged in as alumni or student.
Post Conditions:	Successfully updated profile.
Primary Scenario:	• Access to profile page. • Click on edit profile.

Table 2.4.1.10: Send Message

Use Case Name:	Send Message.
Actors:	Alumni, Student.
Preconditions:	Logged in as alumni or student.
Post Conditions:	Message sent successful.
Primary Scenario:	• Access to view alumni or student page • Click on message button next to username. • Type messages and click on send.

Table 2.4.1.11: Approve as Alumni

Use Case Name:	Approve as Alumni
Actors:	Admin.
Preconditions:	Logged in as admin.
Post Conditions:	Students will become alumni.
Primary Scenario:	• Access to view student page. • Click on approve button next to username.

Table 2.4.1.12: Delete User

Use Case Name:	Delete User.
Actors:	Admin.
Preconditions:	Logged in as admin.
Post Conditions:	View applied student list.
Primary Scenario:	• Access view user page. • Click on delete button next to username.

Chapter 3: System Design

3.1 Introduction

To make development work easier system design is must. System design is a way to build up or design the system architecture. System design will help me to achieve a better system.

3.2 Activity Diagram

3.2.1 Student Activity Diagram

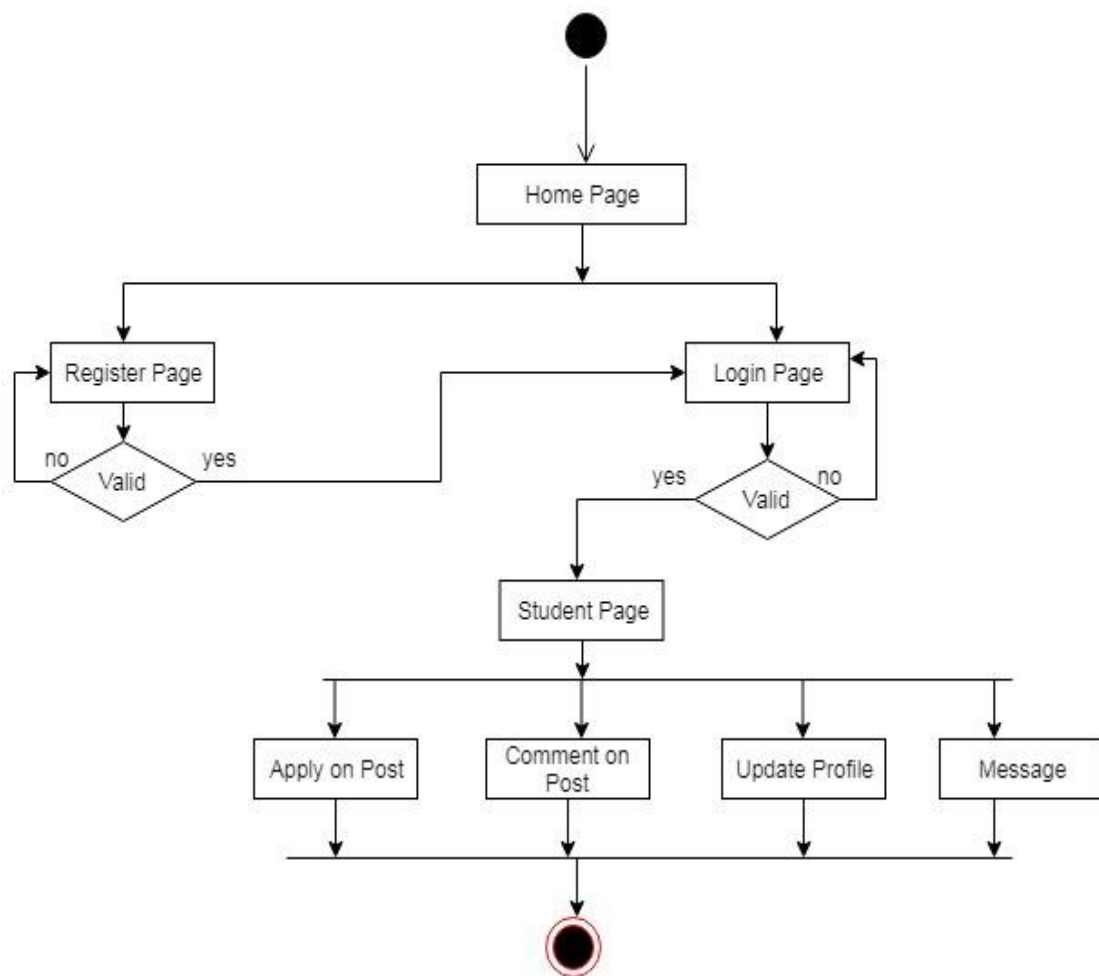


Figure 3.2.1: Student Activity Diagram.

3.2.2 Alumni Activity Diagram

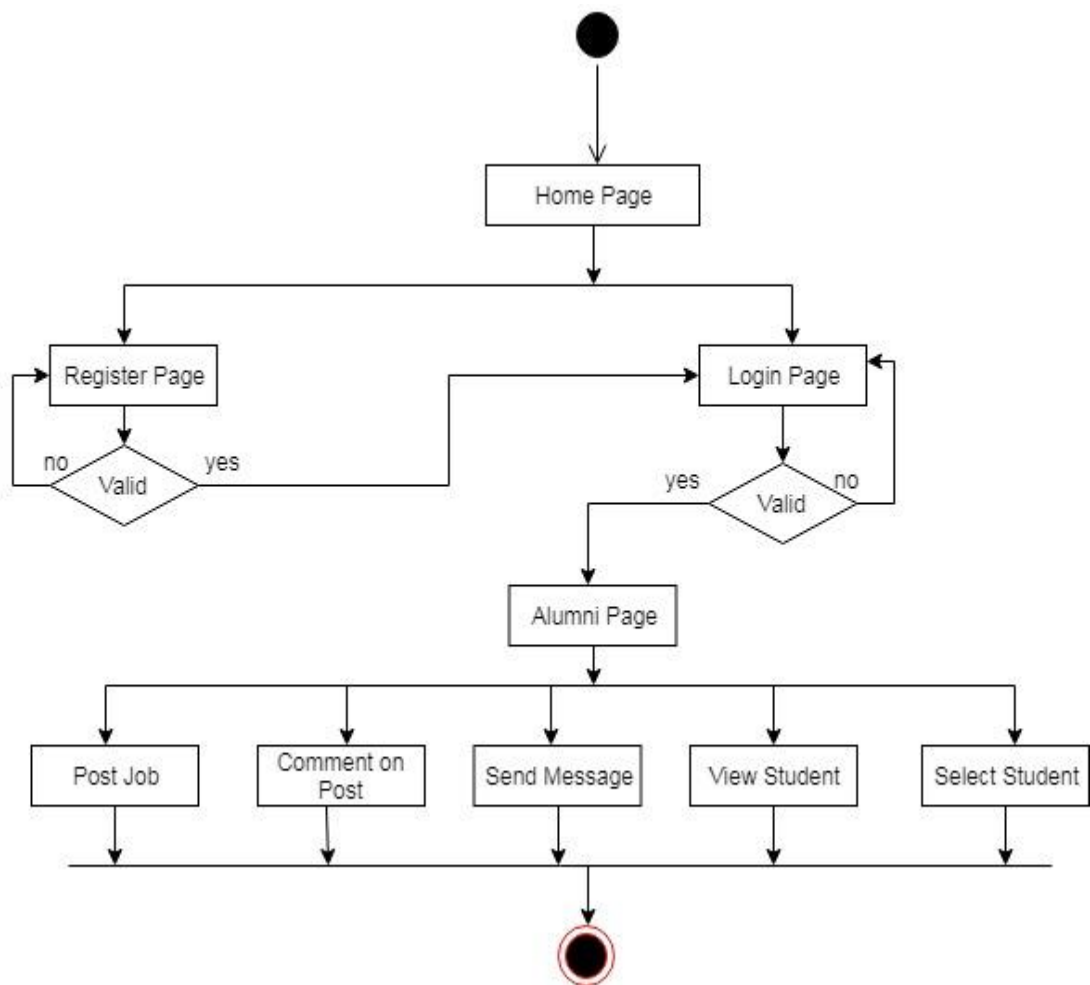


Figure 3.2.2: Alumni Activity Diagram.

3.2.3 Admin Activity Diagram

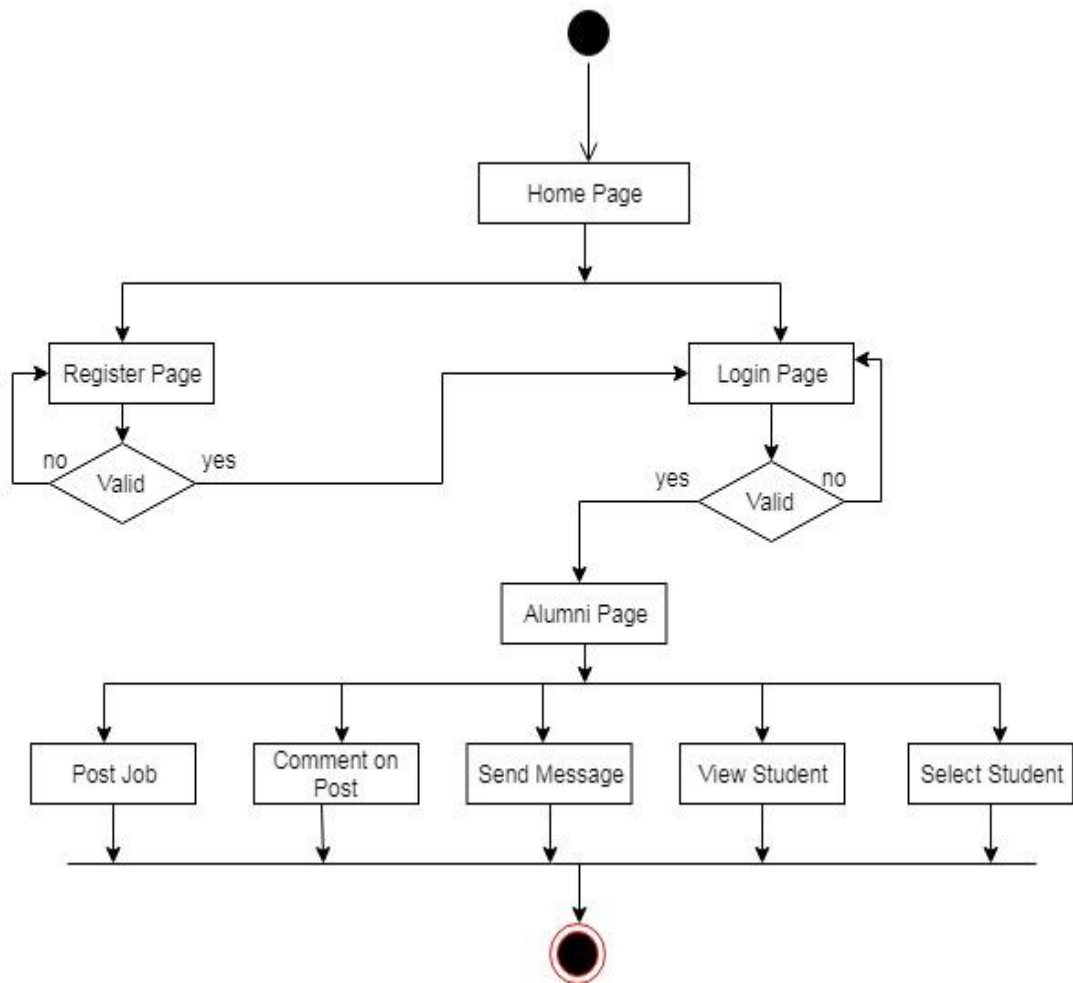


Figure 3.2.3: Admin Activity Diagram

3.3 ER diagram

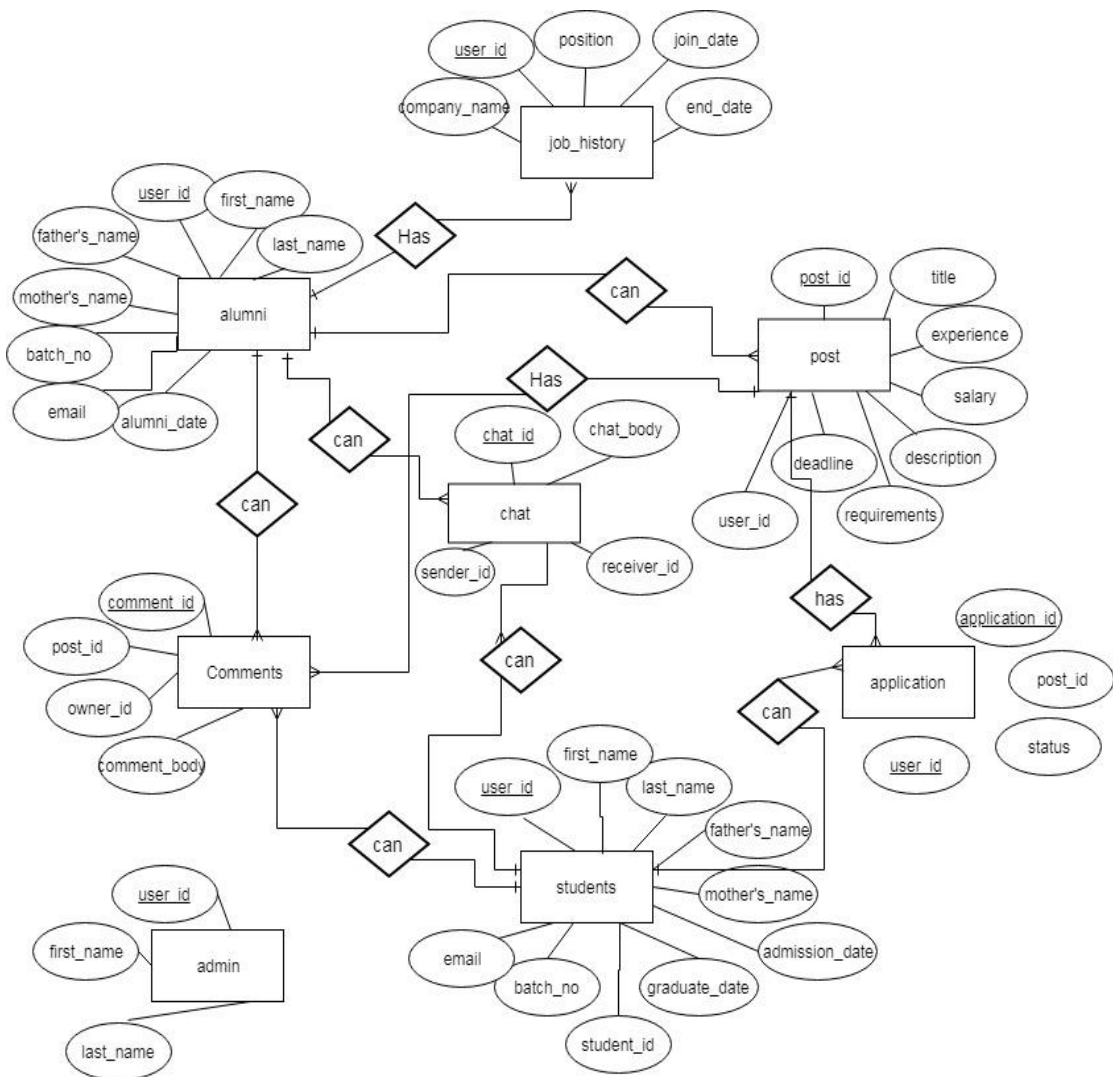


Figure 3.3: ER Diagram

3.4 Class diagram

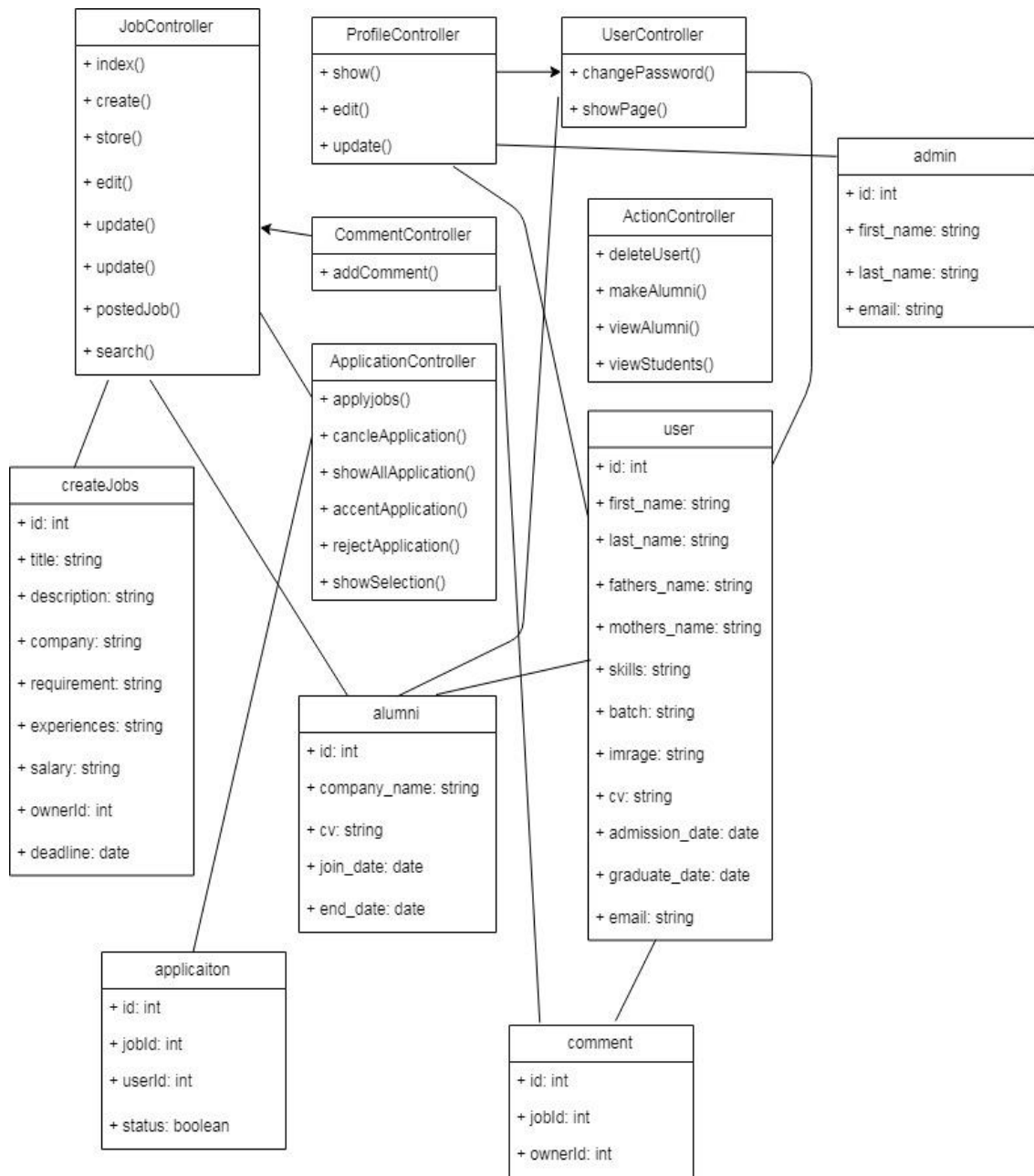


Figure 3.4: Class Diagram

3.5 Data flow diagram

3.5.1 DFD Level 0

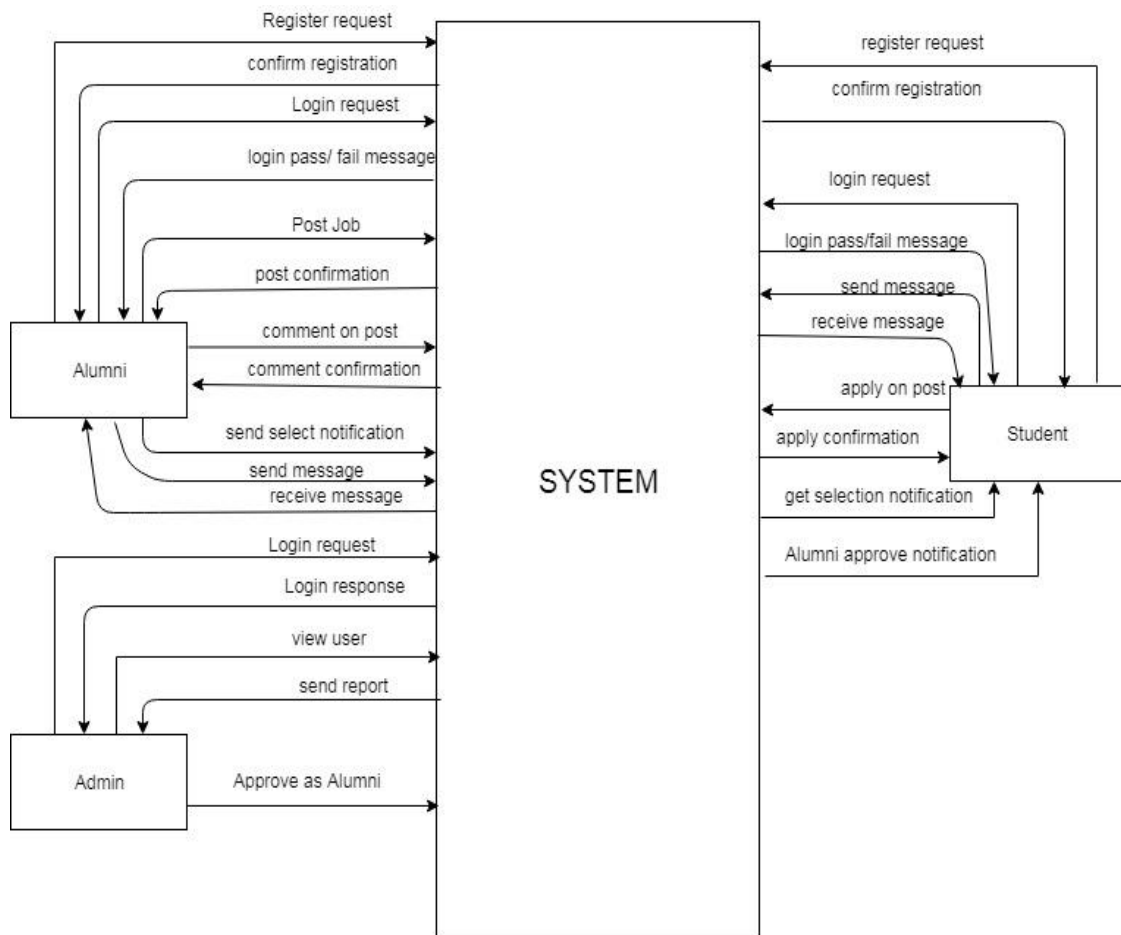


Figure 3.5.1: Dataflow diagram (level 0)

3.5.2 DFD Level 1

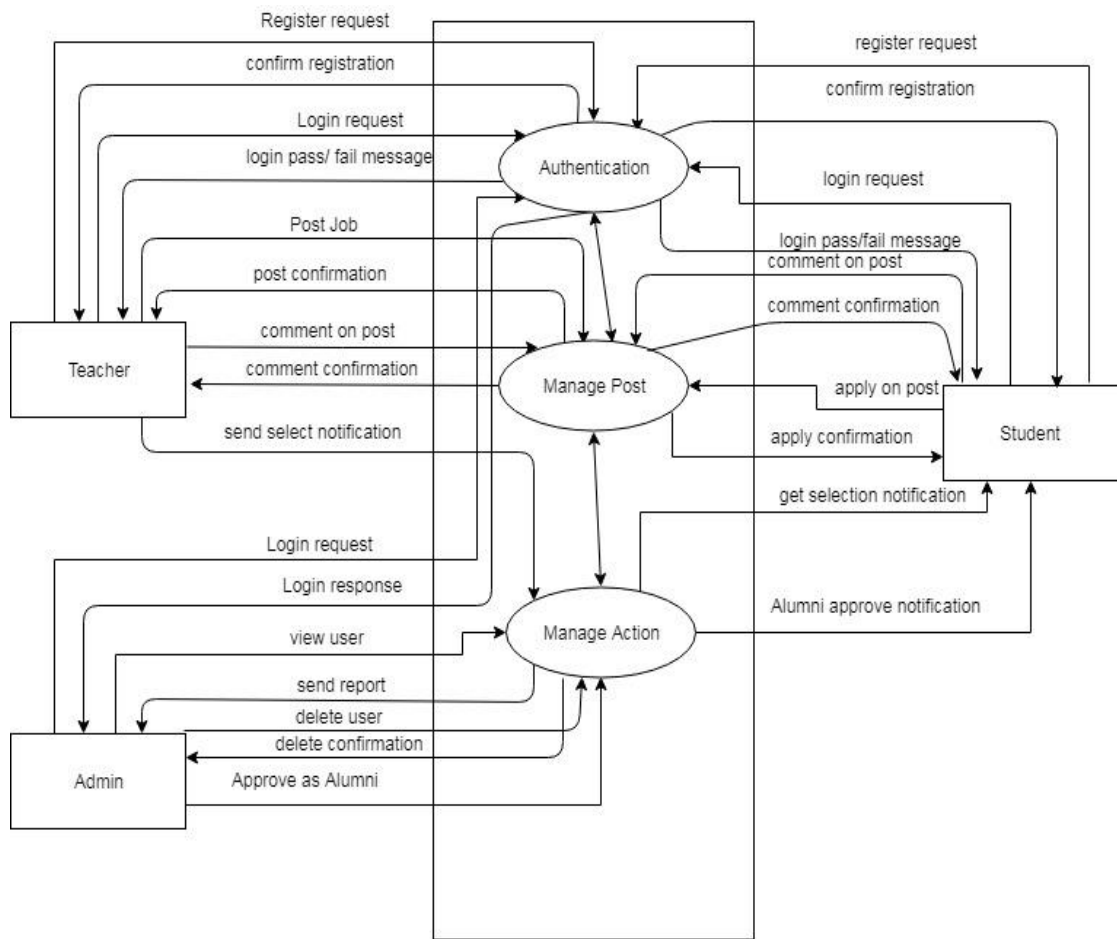


Figure 3.5.2: Dataflow Diagram (level 1)

3.6 Conclusion

This chapter covered design phase of this system which converts the user requirements into more technical terms. This chapter helps to selecting the tools and technology in development which will describe to the next chapter.

Chapter 4: Development

4.1 Tools and Technology

Different tools and technology are used to develop software. This system is a web application. Tools and technology I used to build this software are mentioned below.

- **Presentation Layer:** HTML5, CSS3, Bootstrap 4, JavaScript, JQuery.
- **Application Layer:** PHP, Laravel 5.8
- **Data Layer:** MySQL.
- **Tools:** Sublime Text 3, Xampp.

4.2 Reason behind choosing

4.2.1 In General

- **HTML5:** HTML5 used to build structure of web page.
- **Bootstrap with CSS:** CSS is a styling language and bootstrap is a library, both of them used to style web page.
- **JavaScript with JQuery:** To make presentation layer interactive JavaScript is used and JQuery is its library.
- **Laravel with PHP:** Laravel is a framework of PHP which uses MVC architecture and used for connecting presentation layer with data layer.
- **MySQL:** MySQL is a database to manage and manipulate data to make connection with application layer.
- **Sublime Text and Xampp:** Sublime is an IDE or text editor uses for coding. And xampp is a control panel to start database server.

4.2.2 On perspective of this project

- **Presentation Layer:** As system is a web based system I need to used the HTML5, CSS, Bootstrap, JavaScript and JQuery to run the system as web application. In my point of view they are best to develop a web system.
- **Application Layer:** To follow the MVC architecture Laravel with PHP is best. It helps to implement logic of the system and to establish connection between presentation layer and data layer.
- **Data Layer:** MySQL used for making relational database and manage query.
- **Tools:** Sublime Text and xampp are most popular in terms of making a web application.

Chapter 5: System Test

5.1 Testing Features

A new test set is to be written for testing this system's features and functionality. Different feature and functionality has different characteristics. Making change to add

or modify new functionality to the existing system is generally considered as feature testing. To make the system more reliable, secured, useful, effective and efficient I have to design test set. To understand whether a system works properly or not testing is necessary.

5.2 Features to be tested

Table 5.2: Features to be tested

Features	Priority	Description
Login	L	User should access system after successful login.
Logout	L	Session have to be destroyed after logout
Register	L	User need to be registered first to access system.
Post Job	L	Alumni can post job.
Apply Job	H	Student can apply to job post.
View Applied Student	M	Alumni can view applied students.
Call for interview	M	Alumni can call for interview to applied student.
Comment	M	Alumni and student can comment on post.
Send Message	M	Alumni and student can send message each other.
Approve as Alumni	H	Admin can approve student as alumni.
Delete User	M	Admin can delete any user.

Here, L = Low Priority, M = Medium Priority, H = High Priority.

5.3 Testing Strategy

A general purpose of testing process is testing strategy. Testing strategy includes testing function methods, testing object, total available resources. Testing strategy is the indicator of test levels which should perform on the whole software development life cycle. Quality assurance team prepares these strategies and reviewed by the developers. Different kinds of testing strategies should be performed according to the system type that needed to test. On this system user acceptance testing is done.

5.4 Test approach

To complete test process testers must take some approach. There are mainly two test approaches.

- **Automation Testing:** Automation testing is a technique uses an application to implement entire life cycle of the software in less time and provides efficiency and effectiveness to the testing software. Automation testing is an Automatic technique where the tester writes scripts by own and uses suitable software to test the software. It is basically an automation process of a manual process.
- **Manual Testing:** Manual testing is the process of using the functions and features of an application as an end-user would in order to verify the software is working as required. With manual testing, a tester manually conducts tests on the software by following a set of pre-defined test cases.

5.4.1 Black Box Testing

Black box testing is a software testing method in which the internal structure/design of the item being tested is not known to the tester. These tests can be functional or non-functional, though usually functional. This method is named so because the software program, in the eyes of the tester, is like a black box; inside which one cannot see.

5.4.2 Equivalent Class Partition

Equivalence partitioning (EP) is a specification-based or black-box technique. It can be applied at any level of testing and is often a good technique to use first.

In equivalence-partitioning technique there need to test only one condition from each partition. This is because assuming that all the conditions in one partition will be treated in the same way by the software. If one condition in a partition works, assume all of the conditions in that partition will work, and so there is little point in testing any of these others. ^[1]

5.4.3 Boundary Value Analysis

In software testing, the boundary value analysis is a black box design technique based on test cases. This technique is applied to see if there are any bugs at the boundary of the input domain.

5.4.4 White Box Testing

In black box testing internal architecture or algorithm is not known to the tester, but in the white box testing whole architecture is known to the testers.

A white box tester is usually a developer, as some degree of programming experience is required. By contrast, it can be useful for black box testers to lack such technical perspective, as their experience of the software should closely resemble that of an end user. ^[1]

White box testing can be classified into some levels. Such as:

- Unit Testing
- Integration Testing
- System Testing

5.5 Pass/ Fail Criteria

Generally test engineers set the pass or fail criteria. They prepare the pass/fail criteria according to which input data worked and which are not works. Pass criteria are the worked data and rest of the input data are considered as fail criteria.

For this system pass/fail criteria are given below.

- One criterion should be passing always accurately to be considered as pass criteria.
- System crash will considered as fail criteria.
- Not showing expected results will considered as fail criteria.

5.6 Testing Schedule

Table 5.6: Testing Schedule

Test Phase	Time
Testing plan creation	1 week
Test specification	3 week
Unit Testing	During development time
Validating use case	2 week
User interface test	1 week
Load test	1 week
Release to production	1 week

5.7 Testing Environment

Test engineers need to prepare an environment with hardware and software to execute test case as required, this is call testing environment. Sometimes network configuration needed to execute test plan.

Some key environment area for testing is given below:

- Test data
- Operating system
- Browser
- Database server
- Network
- Project documentation.
- Hardware with server operating system.

5.8 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 correctly. ^[1] The process of developing test cases can also help find problems in the requirements or design of an application. There is a chance of having some fault or break holes in system, test case will help to identify those fault. And also by using test case we can solve them. So proper testing is needed to expect a min error. Also 100% testing is not possible. So I have to choose properly the test case. Test case for this system is mentioned below.

Table 5.8.1: Login

Test case#1				Test case name: Login		
System: Alumni Portal				Subsystem: N/A		
Designed by: Ishak.				Designed date: 20-04-19		
Executed by: Ishak.				Executed date: 22-04-19		
Short description: Registered user can login to application, so system need authentication and authorization.						
Pre-conditions: • User must be registered. • Redirected to login page. • Assume that the email is “ishak@gmai.com” and password is “123456”						
Step	Email	Password	Expected result	Actual result	Pass/ Fail	Comment
1	ishak@gmail	123456	Invalid user	As expected	Pass	
2		123456	Email can’t be blank	As expected	Pass	
3	ishak@gmail.com		Password can’t be blank	As expected	Pass	
4	ishak@gmail.com	123456	Successfully logged in.	As expected	pass	
Post-condition: User will be redirected to dashboard with success message.						

Table 5.8.2: Logout

Test case#2			Test case name: logout		
System: Alumni Portal			Subsystem: N/A		
Designed by: Ishak			Designed date: 20-04-19		
Executed by: Ishak			Executed date: 22-04-19		
Short description: Session has to destroy after clicking on logout button.					
Pre-conditions: User needed to be logged in.					
Step	Test step	Expected result	Actual result	Pass/Fail	Comment
1	Click logout from dropdown.	Successfully logout	As expected	Pass	
2	After logout click back and reload.	Redirected to login page.	As expected	Pass	
3	Directly type the profile link to enter.	Redirected to login page.	As expected	Pass	
Post-Condition: Session will be destroyed and user will redirected to login page.					

Table 5.8.3: Register

Test case#3				Test case name: Register.		
System: Alumni Portal.				Subsystem: N/A		
Designed by: Ishak				Designed date: 20-04-19		
Executed by: Ishak				Executed date: 22-04-19		
Short description: User can register with email and password.						
Pre-conditions: • User needs to be in register page. • Valid email and password format.						
Step	Email	Password	Expected result	Actual result	Pass/Fail	Comment
1	ishak	123456	Email is not valid.	As expected	Pass	
2	ishak@gmail.com	123	Password can't be less than 6 digit	As expected	Pass	
3	ishak@gmail.com		Password can't be empty	As expected	Pass	
4		123456	Email can't be empty	As expected	Pass	
5	ishak@gmail.com	123456	Successfully registered	As expected	Pass	
Post-Condition: User will be registered and redirected to dashboard with success message.						

Table 5.8.4: Post Job

Test case#4			Test case name: Post Job		
System: Alumni Portal.			Subsystem: N/A		
Designed by: Ishak			Designed date: 20-04-19		
Executed by: Ishak			Executed date: 22-04-19		
Short description: Only alumni can post job.					
Pre-conditions: • User must be logged in as Alumni. • Alumni have to be on creating post page. • All required field must be filled up.					
Step	Test step	Expected result	Actual result	Pass/Fail	Comment
1	All required fields are filled by alumni.	Job posted	As expected	Pass	
2	All required fields are not filled by alumni.	Required field should fill.	As expected	Pass	
Post-Condition: Job posted and available to view it.					

Table 5.8.5: Apply Job

Test case#5		Test case name: Apply Job			
System: Alumni Portal.		Subsystem: N/A			
Designed by: Ishak		Designed date: 20-04-19			
Executed by: Ishak		Executed date: 22-04-19			
Short description: Students can apply to job post.					
Pre-conditions: • User must be logged in as student. • Student must be in a job post page.					
Step	Test step	Expected result	Actual result	Pass/Fail	Comment
1	Click on apply button	Applied successfully	As expected	Pass	
2	Logged in with another student id and click on apply.	Applied successfully	As expected	Pass	
Post-Condition: Post will be marked as applied.					

Table 5.8.6: View Applied Student

Test case#6			Test case name: View Applied students		
System: Alumni Portal.			Subsystem: N/A		
Designed by: Ishak			Designed date: 20-04-19		
Executed by: Ishak			Executed date: 22-04-19		
Short description: Alumni can view applied students.					
Pre-conditions: • User must be logged in as alumni. • Select a post to view that post application list.					
Step	Test step	Expected result	Actual result	Pass/Fail	Comment
1	Click on view Applied students	View applied student list	As expected	Pass	
Post-Condition: Alumni can view students who have applied for that job.					

Table 5.8.7: Call for interview.

Test case#7			Test case name: Call for interview		
System: Alumni Portal.			Subsystem: N/A		
Designed by: Ishak			Designed date: 20-04-19		
Executed by: Ishak			Executed date: 22-04-19		
Short description: Alumni can call for interview to applied student.					
Pre-conditions: • User must be logged in as alumni • Alumni must be on view applied student page. • Minimum 1 student should applied on that post.					
Step	Test step	Expected result	Actual result	Pass/Fail	Comment
1	Click on call for interview button	Successfully sent notification	As expected	Pass	
2	For another job if the same student applied, click to on call for interview for that student again.	Successfully sent notification	As expected	Pass	
Post-Condition: Student will get a selected notification.					

Table 5.8.8: Comment

Test case#8				Test case name: Comment		
System: Alumni Portal.				Subsystem: N/A		
Designed by: Ishak				Designed date: 20-04-19		
Executed by: Ishak				Executed date: 22-04-19		
Short description: Alumni and students can comment on post.						
Pre-conditions: • Use must be logged in as alumni or student. • Must have a post to comment in.						
Step	Test step	Test data	Expected result	Actual result	Pass/Fail	Comment
1	Alumni or student comment on post	something	Comment successful.	As expected	Pass	
2	Alumni or student comment on post		No comments added	As expected	Pass	
3	Alumni or student comment on another post	something	Comment successful	As expected	Pass	
Post-Condition: Comment will be visible for that post with commenter name.						

Table 5.8.9: Send Message

Test case#9				Test case name: Send Message		
System: Alumni Portal.				Subsystem: N/A		
Designed by: Ishak				Designed date: 20-04-19		
Executed by: Ishak				Executed date: 22-04-19		
Short description: Alumni and student can send messages each other.						
Pre-conditions: • User must be logged in as student or alumni. • Must click on messages button.						
Step	Test step	Test data	Expected result	Actual result	Pass/Fail	Comment
1	Student send message to a alumnus	Hello sir.	Successfully sent	As expected	Pass	
2	Student send message to a alumnus		Message can't be blank	As expected	Pass	
3	Alumni send messages to a student.	Hello.	Successfully sent	As expected	Pass	
4	Alumni send messages to a student.		Message can't be blank	As expected	Pass	
Post-Condition: Messages will be sent to recipient.						

Table 5.8.10: Approve as alumni

Test case#10			Test case name: Approve as alumni		
System: Alumni Portal.			Subsystem: N/A		
Designed by: Ishak			Designed date: 20-04-19		
Executed by: Ishak			Executed date: 22-04-19		
Short description: Admin can approve student as alumni.					
Pre-conditions: • User must be logged in as admin. • Min 1 user in student list. • Admin must be in student list page.					
Step	Test step	Expected result	Actual result	Pass/Fail	Comment
1	Click on make alumni next to student list	Successfully made student alumni.	As expected	Pass	
Post-Condition: Student will become an alumnus.					

Table 5.8.11: Delete User

Test case#11			Test case name: Delete user.		
System: Alumni Portal.			Subsystem: N/A		
Designed by: Ishak			Designed date: 20-04-19		
Executed by: Ishak			Executed date: 22-04-19		
Short description: Admin can delete any user.					
Pre-conditions: • User must be logged in as admin. • Admin must be on view student or alumni page. • Minimum 1 user to delete.					
Step	Test step	Expected result	Actual result	Pass/Fail	Comment
1	Click on delete button next to an alumnus name.	Alumni will be deleted	As expected	Pass	
2	Click on delete button next to a student name.	Student will be deleted	As expected	Pass	
Post-Condition: User will be deleted.					

Chapter 6: User Manual

6.1 Home page

User need to go to the landing page or home page of this system to use it. In home page there are buttons for login and register.



Figure 6.1: Home Page

6.2 Registration

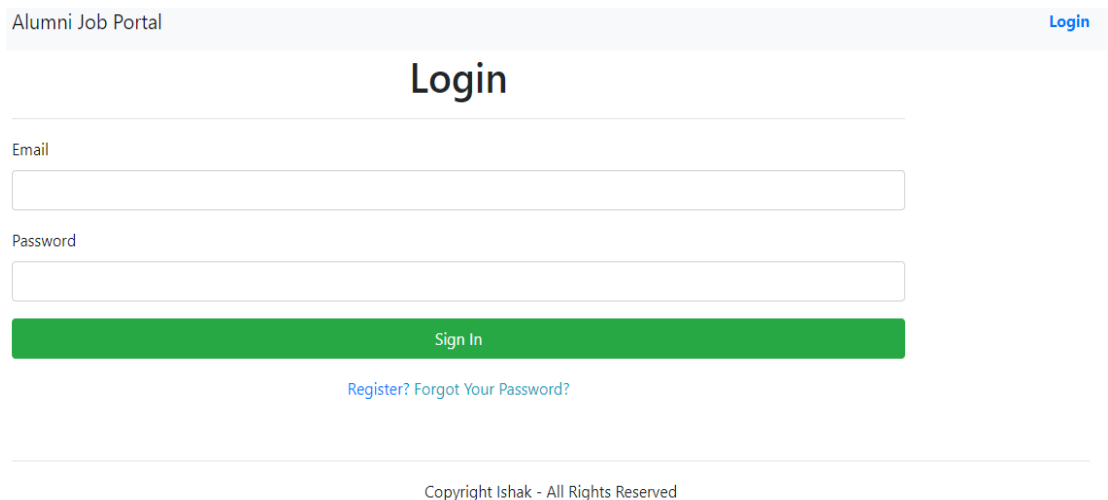
New user need to register with valid email and password to use this system.

The screenshot shows the registration page of the 'Alumni Job Portal'. At the top, there is a light gray header bar with the text 'Alumni Job Portal' on the left and two buttons, 'Login' (green) and 'Register' (red), on the right. The main content area has a white background. At the top of the main area, the text 'Register here' is centered. Below this, there are five input fields, each with a label to its left: 'First Name', 'Last Name', 'Email', 'Password', and 'Confirm Password'. At the bottom of the form, there are two buttons: a green button labeled 'Register' and a red button labeled 'Already have an account'.

Figure 6.2: Register page

6.3 Log In

Registered user can log in with their log in credentials by visiting log in page.

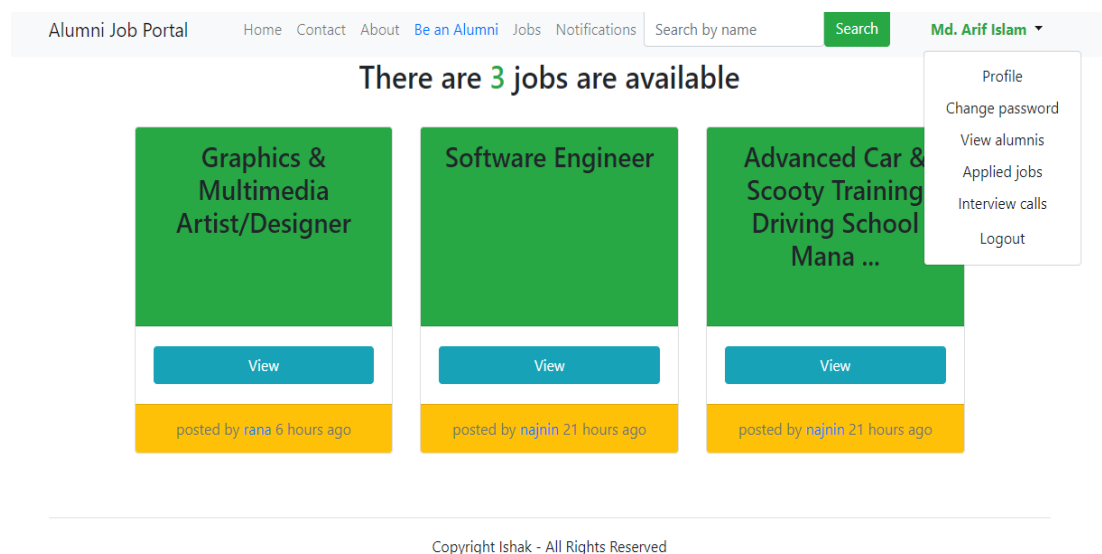


The login page features a header with 'Alumni Job Portal' on the left and a 'Login' link on the right. The main heading is 'Login'. Below it are two input fields: 'Email' and 'Password'. A green 'Sign In' button is positioned below the password field. A link for 'Register? Forgot Your Password?' is located below the sign-in button. The footer contains the text 'Copyright Ishak - All Rights Reserved'.

Figure 6.3: Login page

6.4 Student Dashboard

When a user logged in as a student he will redirect to student dashboard page where he can find all job post by alumni. Users (both students and alumni) will get all necessary and accessible things in the drop down and navigation-bar menu.



The student dashboard has a header with 'Alumni Job Portal' and navigation links: Home, Contact, About, Be an Alumni, Jobs, and Notifications. It includes a search bar with a 'Search' button and a user profile dropdown for 'Md. Arif Islam' with options: Profile, Change password, View alumnis, Applied jobs, Interview calls, and Logout. The main content area states 'There are 3 jobs are available' and displays three job cards. Each card has a green header, a blue 'View' button, and a yellow footer indicating the poster and time. The footer of the page reads 'Copyright Ishak - All Rights Reserved'.

Job Title	Posted by	Time
Graphics & Multimedia Artist/Designer	rana	6 hours ago
Software Engineer	hajnin	21 hours ago
Advanced Car & Scooty Training Driving School Mana ...	hajnin	21 hours ago

Figure 6.4: Student Dashboard

6.5 Apply for Job

Students can apply for a job by visiting to that post and clicking to apply button of that post.

Graphics & Multimedia Artist/Designer

Description	Work with Digital Marketing team to understand the project scope and objectives that will drive engagement and awareness of our products and business activities. Participate in brainstorming sessions to share new design perspectives and ideas. Design new on-brand animation to effectively convey concepts and messaging. Work collaboratively with the Content Development Team, Creative Team, Content Writers, and other colleagues to develop creative multimedia materials. Using Adobe Photoshop CS and CC
Company	Doodle Inc
Requirements	Agile, PHP, Java
Experience	At least 6 years
Salary	Negotiable
Deadline	2019-04-25
Posted by	Rana Sk

Apply in this Job

Figure 6.5: Apply for job

6.6 Cancel Application

Students can cancel already applied job by clicking on cancel button in the job post page.

animation to effectively convey concepts and messaging. Work collaboratively with the Content Development Team, Creative Team, Content Writers, and other colleagues to develop creative multimedia materials. Using Adobe Photoshop CS and CC

Company	Doodle Inc
Requirements	Agile, PHP, Java
Experience	At least 6 years
Salary	Negotiable
Deadline	2019-04-25
Posted by	Rana Sk

Cancel Application

Comment

Figure 6.6: Cancel Application

6.7 Comment

Students and alumni both can comment on post after login. Commenting is only possible on job post.

Comment

Submit

2 Comments

This is a good job post

By **samir**

12 minutes ago

Salary should be fixed

By **samir**

12 minutes ago

Figure 6.7: Comment

6.8 Selection Notification

Student will get notification if he is selected for a job approved by alumni.

Alumni Job Portal Home Contact About [Be an Alumni](#) Jobs Notifications **Md. Arif Islam** ▾

1 jobs called you for interview.

Graphics & Multimedia Artist/Designer

View

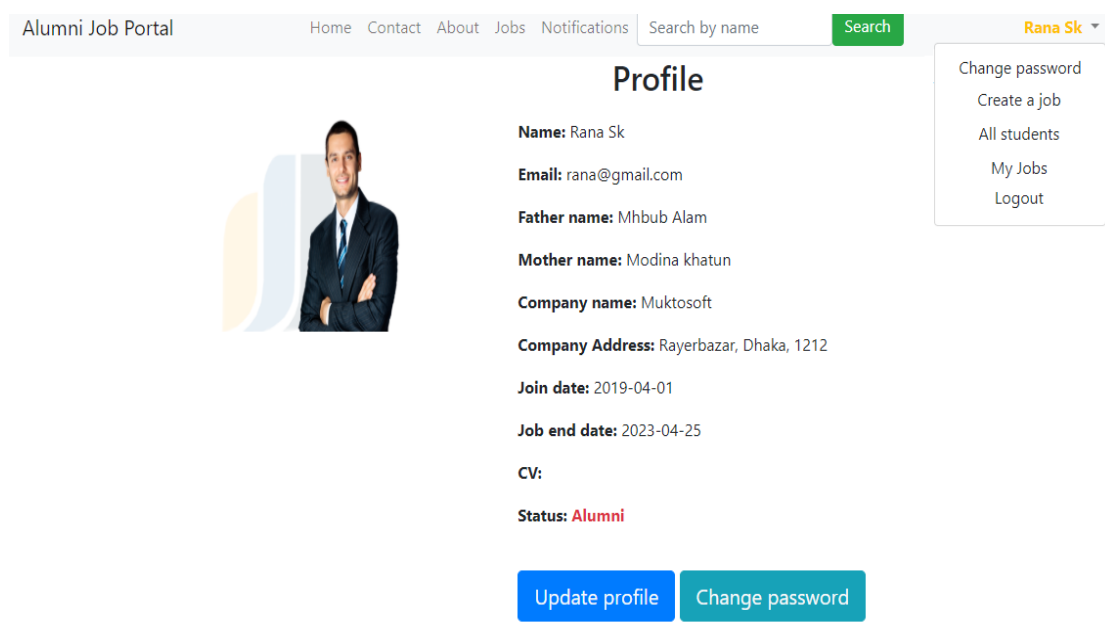
posted by rana 6 hours ago

Copyright Ishak - All Rights Reserved

Figure 6.8: Selection notification

6.9 User Profile

Students and alumni both users can view their own profile after logged in. They can also update their profile and change their password.



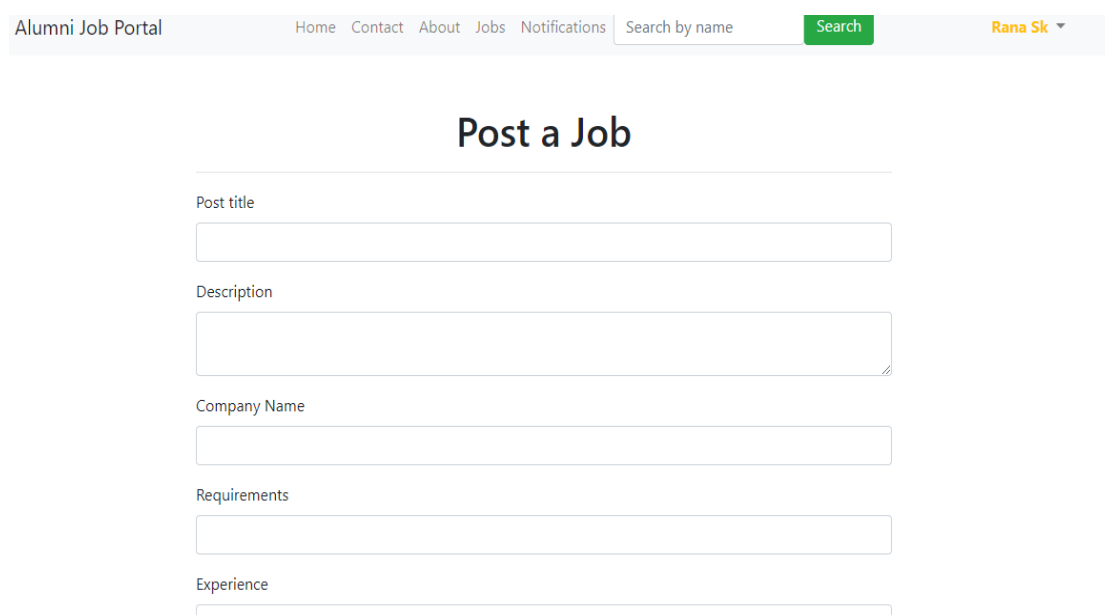
The screenshot shows the 'User Profile' page of the 'Alumni Job Portal'. The header includes the portal name, navigation links (Home, Contact, About, Jobs, Notifications), a search bar, and a user dropdown menu for 'Rana Sk'. The profile section features a user photo, a list of personal and professional details, and two action buttons: 'Update profile' and 'Change password'. The details listed are: Name: Rana Sk, Email: rana@gmail.com, Father name: Mhbab Alam, Mother name: Modina khatun, Company name: Muktosoft, Company Address: Rayerbazar, Dhaka, 1212, Join date: 2019-04-01, Job end date: 2023-04-25, CV: (empty), and Status: Alumni.

Field	Value
Name	Rana Sk
Email	rana@gmail.com
Father name	Mhbab Alam
Mother name	Modina khatun
Company name	Muktosoft
Company Address	Rayerbazar, Dhaka, 1212
Join date	2019-04-01
Job end date	2023-04-25
CV	
Status	Alumni

Figure 6.9: User profile

6.10 Post Job

Alumni can post a job offer after successfully logged in. For posting a job required fields must be filled in.



The screenshot shows the 'Post a Job' form. It contains five input fields for: Post title, Description, Company Name, Requirements, and Experience. The form is titled 'Post a Job' and is part of the 'Alumni Job Portal' interface.

Figure 6.10.1: Post job (fields)

Salary

Deadline

Confirm Post

Copyright Ishak - All Rights Reserved

Figure 6.10.2: Post job (button)

6.11 Modify Post

Alumni can edit or delete their own post by visiting to that post's page.

Company	Doodle Inc
Requirements	Agile, PHP, Java
Experience	At least 6 years
Salary	Negotiable
Deadline	2019-04-25
Posted by	Rana Sk

Edit this job post

Delete this job

Wanna see all applicants for this job? [Click here](#)

Figure 6.11: Modify post.

6.12 View Applicant List

Alumni can view applied student list for job post, by clicking on a button besides “see all applicant” on that job post page. This will redirect him to the view applicant list of student’s page. Where he can approve or ignore application.

Alumni Job Portal

Home

Contact

About

Jobs

Notifications

Search by name

Search

Rana Sk

All job applications for Graphics & Multimedia Artist/Designer

#	Name	CV	Actions		
1	Md. Arif Islam	view	Profile	Approve and Mail	Ignore
2	Akter hossain	view	Profile	Approve and Mail	Ignore

Copyright Ishak - All Rights Reserved

Figure 6.12: View applicant list

6.13 View Student List (Alumni Perspective)

Alumni can view student list. There is view CV, view profile button visible. A message button is also available to message with student.

3 students are studying in DIU						
#	Name	CV	Skills	Batch	Action	
1	Md. Arif Islam	view	c++, java, python, laravel	not-found	Profile	Message
2	samiul islam	view	not-found	not-found	Profile	Message
3	Akter hossain	view	c++, java, hybernet, php	17th	Profile	Message
Copyright Ishak - All Rights Reserved						

Figure 6.13: View student list (Alumni perspective)

6.14 Message

Students and alumni both can send messages each other. By clicking on message button next to profile they can enter into message option.

Conversations with Rana

Rana:

Nice to hear it

17 seconds ago

Akhter :

Your company's salary is amazing

3 days ago

Akhter :

I follow your job posts regularly

3 days ago

Copyright Ishak - All Rights Reserved

Figure 6.14: Message

6.15 Update Profile

Students and alumni both can update their own profile. By clicking on update profile in their profile page they we get access to update profile page. They must fill the required fields to successfully update their profile.

Alumni Job Portal

Home Contact About Jobs Notifications

Rana Sk

Profile

First Name

Last Name

Father Name

Mother Name

Skills

Position

Figure 6.15.1: Update profile (fields)

Company Address

Rayerbazar, Dhaka, 1212

Job join date

04/01/2019

Job end date

04/25/2023

Update Image

Choose File No file chosen

Max 2mb size

Update Your CV

Choose File No file chosen

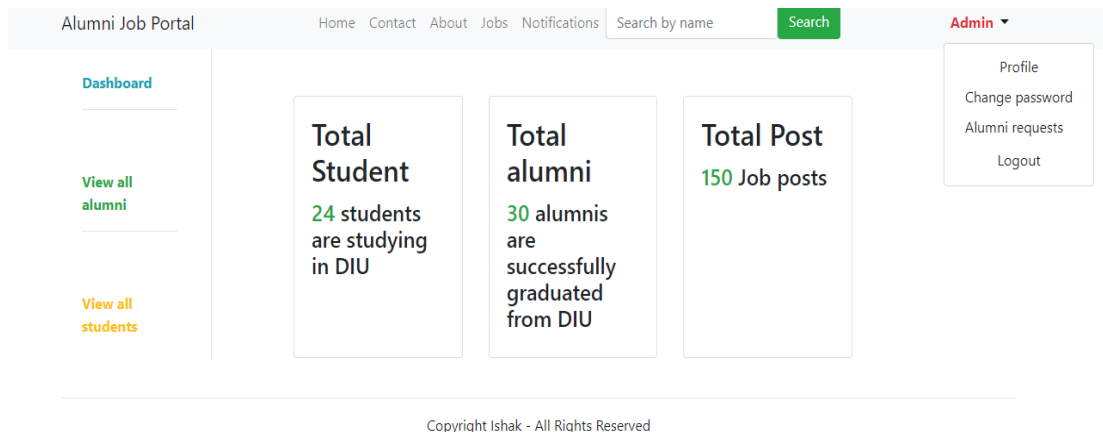
Max 2mb size

Update

. Figure 6.15.2: Update profile (button)

6.16 Admin Dashboard

When user logged in as admin he will access the admin dashboard page. There is overview available which includes total student, total alumni and total post number. Admin will get will get all the necessary and accessible things in the drop down and left navigation menu.



. Figure 6.16: Admin dashboard.

6.17 Approve as Alumni

Admin can make a student as alumni by clicking “make alumni” button next to student name in the view student page. In that page admin can also find the delete option to delete a student.

The screenshot shows the 'Alumni Job Portal' interface. The top navigation bar includes links for Home, Contact, About, Jobs, and Notifications, along with a search bar and a user profile dropdown labeled 'Admin'. The left sidebar contains links for 'Dashboard', 'View all alumni', and 'View all students'. The main content area displays a heading '3 students are studying in DIU' above a table with columns: #, Name, CV, Batch, and Action. The table lists three students: 1. Md. Arif Islam (CV: view, Batch: not-found), 2. samiul islam (CV: view, Batch: not-found), and 3. Akter hossain (CV: view, Batch: 17th). Each row has three action buttons: Profile, Delete, and Make alumni. The footer text reads 'Copyright Ishak - All Rights Reserved'.

#	Name	CV	Batch	Action
1	Md. Arif Islam	view	not-found	Profile Delete Make alumni
2	samiul islam	view	not-found	Profile Delete Make alumni
3	Akter hossain	view	17th	Profile Delete Make alumni

. Figure 6.17: Approve as Alumni.

6.18 Manage Alumni

Admin can manage alumni by visiting view alumni page. There he can find all the alumni and can delete them.

The screenshot shows the 'Alumni Job Portal' interface. The top navigation bar includes links for Home, Jobs, and Notifications, along with a search bar and a user profile dropdown labeled 'Admin'. The left sidebar contains links for 'Dashboard', 'View all alumni', and 'View all students'. The main content area displays a heading 'There are 2 students are already graduated from DIU.' above a table with columns: #, Name, Company, Position, Cell Number, and Action. The table lists two students: 1. Md. Arif Islam (Company: Microsoft, Position: Software Engineer, Cell Number: not-found), and 2. Rana Sk (Company: Microsoft, Position: Software Engineer, Cell Number: not-found). Each row has three action buttons: Profile, Denote to Student, and Delete. The footer text reads 'Copyright Ishak - All Rights Reserved'.

#	Name	Company	Position	Cell Number	Action
1	Md. Arif Islam	Microsoft	Software Engineer	not-found	Profile Denote to Student Delete
2	Rana Sk	Microsoft	Software Engineer	not-found	Profile Denote to Student Delete

. Figure 6.18: Approve as Alumni.

Chapter 7: Conclusion

7.1 GitHub Link

https://github.com/ishakahammed/alumni_job_portal

7.2 Project Summary

It took a lot of hard working, patients and persistency to build up this project according to the requirements of the stakeholders. At beginning it looked hard for me, but after a raw sketch of design and analyzing the requirement I found my work is simpler than before.

This is a web based application and it has database materials. So database designing with proper relation looks easier when I finished up database design. From the stakeholders perspective I designed user interface which is quite simple and easy to understand. After completing this I have started the backend logic of this system.

After completing the development process I have perform some testing with this system to be confident and finding bugs. It also helped me to insure the quality of this project. Though the test was done by me but it was done with proper ethics.

7.3 Limitations

There are some limitations in my project. Now I will briefly describe them.

- **No android or IOS version:** This is only a web based application. No specific version of android or ios application to easily access though mobile app.
- **No report option:** There is no option for report a profile or post or comment which is irrelevant.
- **No option to control message:** Currently no message control is implemented in this system. So user can't control their message.

7.4 Obstacle and Achievements

To build up a system there must be some challenges. Challenges doesn't make me weak but it will give me opportunity to do something better and prove myself. By defending those obstacle and achieve something new will lead me the path of success.

At the very beginning of this project I didn't know the proper flow of the software development life cycle also know how to gather requirements from real life. By developing this project I also learnt the need of development pre-plan. I also learn how to implement the raw requirement into a project.

There are some more obstacle and achievement which are mentioned below.

- **Scope Change:** Sometimes some difficulties come in to development. Then some features need to be changed. By using the reverse engineering process I overcome this challenge.
- **User Interface:** Different person have different personalities and choice. It's difficult to build a user interface which will be liked by all. So I decided to keep the user interface as simple as possible to make it user friendly to all users.

7.5 Future Scope

Though this is not the final version of this system, so I have some plan to improve and add some feature in this system which will be beneficial to stakeholders and which can make this system more helpful. A list of future plan or scope is mentioned below.

- To give the full control to admin: including manages post, manage message and so on.
- To make a mobile app version
- Add message filter in chat.
- Add report option to user.
- Add online chat.

7.6 References

To complete this system I need to gather some knowledge from some platforms. I will mention them below.

1. www.softwaretestingfundamentals.com