

Superior College Lahore



Faculty of Computer Science & IT

Final Year Project

PROJECT REPORT (Part-2)

Online University Finder

Project ID: BIT-005

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Project Report

[Online University Finder]

Change Record

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APPROVAL

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PROJECT MANAGER

Comments: _____

Date: _____

Signature: _____

HEAD OF THE DEPARTMENT

Comments: _____

Date: _____

Signature: _____

Dedication

This work is dedicated to my lovely parents and teachers Mam Faiqa and MR. Mumtaz Ali Rajput they give us better opportunity and helping us to complete this project.

Acknowledgements

We pleasantly thank to our project guide Mr. Mumtaz Ali Rajput and Mam Faiqa our dear faculty members Prof. Mumtaz Ali and Mam Faiqa who has help us in this project right or indirectly. It would also be self-seeking on our part if we do not thank other faculties who give their thought, ideas and valuable offer. I am also thankful to our superior university, Lahore for their support by offering project monitor, project machine and environment to develop a complete and successful project.

At last but not at least I want to thank our team members and Lab staffs of our University for their kind Co-operation while working on this project.

Executive Summary

Our website works for all persons who are confused between the universities they wish to go. This app will let you discover the best university in any specific filtered city having ranks based on their locations and university services, Also a list of top universities in Pakistan and their eligibility criteria and admission details also available in this app.

It's software where we apply the filter conditions. On the basis of countless result provided, it helps to filter out and choose the best universities that suit us. University finder is a Static Android App /website i.e. it has the university data pre-defined and there won't be dynamic data available on run time.

This website will also support you to select the universities as per your choice and also contact details of the related university administration staff will also get offered to you through this university selector website.

We also added a feature in this website and that feature is Alumni portal. In Alumni portal users can also get info about latest jobs and view the Alumni of our University. We added this feature to make more attractive our website.

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Chapter 1

Introduction

1: Introduction

With the fast moving technology, today an institute has become amazingly large and classy operation. Technologies often have an important role to play and are the key to success in competing with the world. So the working method of the people has changed a lot. Now a day's time and money matters a lot. So we need to completely automate our existing manual system, and thus comes the idea of automation. Online university finder is one of them. This includes various sections of universities like university profiles, ranking, scholarship etc.

We are making an app/website almost university admission system which presents different universities from HEC recognized in your city. This App/website we familiarize the different top level universities in all over Pakistan. We divided the universities into different groups. This app/website tells the students which university is eligible for his\her. This app also tells the students which university is best for engineering and which one is best for Medical. Student just registered on our website and the enter his/her marks and result is produced according to his/her marks and also deal with test training sample according to university selection test.

1.1. Background:

Here a several website about university finder in overseas nations but in Pakistan only one website that give this capability its name is ilmkidunya.com and also our opponent but there is no application almost university finder in Pakistan we make application and Ilmkiduniya.com is our challenger and it has not good interface and not so advance website we make professionally and user friendly app and website.

1.2. Motivations and Challenges:

Students those passed intermediate exams. They don't know about universities. They don't know which university stays best for his/her. This app/website services to the students to find a real institution agreeing toward their filed. Which filed they chose. Our app/website tells towards the students which university remains better for his/her related to their marks. This app too express students which institution best for engineering and which is best for Medical.

Student simple registered on our website and he enter own marks and result produced and giving to his/her marks. Student save his time struggle towards discover best institution of higher learning through using this app/website. This app/website named university finder. There is one App/website is Ilmkidunya deliver the skill related admission but we will make app and add extra feature we provide a facility to student's enter his/her marks and list all institution that's qualified for get admission this is our extra feature in a website.

1.3. Goals and Objectives:

Method of preparation, scheming then relating computer union is called a project. University finder offers to student over the sphere to discover their best institute for educations then catch universities information active in a distant home. University finder is recognized to automate then thus computerize the whole daily work procedure. The request of this type of system is rising day by day. It is constructed to cover all the zones of university concerned with data deal. It is mainly online application and it is a database established using sql Server and front end using ASP.NET.

- To make the structure fully easy.
- To make the structure fully accessible.
- To make the structure fully front-end administrator.

1.4. Literature Review/Existing Solutions:

Today, if students ensure to choose university for his educations, then he must go all campus for receiving details about their courses, locations and fee construction and all. Occasionally, it's not a value going to each and every campus and this tip to a lot of money consumption and time consumption. Sometimes, even after trying an allocation of campuses, persons may become confused and will close up going to those universities which might not offer good courses as each their own attention.

Gap Analysis

Our opponent exists is **Ilmkidunya.com**, they don't have a good interface, not an advance website and not a secure. There is no Android application yet in Pakistan about online University Finder. We design user friendly and good application for users and provide them a batter facility to students. We create good website/app design and create community that help to those students, that they want to know about related study or university.

Competitors	F-1	F-2	F-3	F-4	F-5	F-6	F-7	F-8	F-9	Report
http://Online university finder (Proposed project)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	09
http://ilmkidunya.com	Yes	Yes	Yes	Yes	No	No	No	Yes	No	05

1.1. Table: Gap Analysis

1.5. Proposed Solution:

This system delivers you an instinctive producing list of all the institution located near you. Planned system will deliver you best summaries of all university too which helps you to selecting the greatest fit university as each your choice.

Planned method is extremely automatic and is easy to practice, which will make even the youths to use it very simply and deal them choose university on their select basis. Proposed system will also deliver you the exchange details of the each university and address of the university too.

We are providing a proper boundary better than the existing site interface **WWW.ILMKIDUNIYA.COM** and with enhanced functionality and features. Our database contains the newest and recently opened universities and gives you maximum options and features of choosing the university according to your grades.

1.6. Project Plan:

University finder is an online website in which candidate can login and register themselves and then select which university is best for him/her and create their and choose what is best platform for him/her for future and get help from our community .

1.6.1. Project Management:

The project management process defined by given steps.

1.6.1.1. Work Breakdown :

We use the agile methodology to make this project. Agile development provides many more learning cycles than traditional project planning. Each sprint provides something new for the team to learn.

1.6.1.2. Roles & Responsibility Matrix:

Tasks and Milestone	Due Date	Due date type	Percent Complete	Responsible Team Member(s) & Role(s)
Project Choice	11/12/2017	Assigned	100%	-
Team Name and Facilities	11/12/2017	Assigned	100%	Both
Scope Definition	Constant Adjustments	On-going	40%	Both
Presentations and Reports	20/12/2017	Assigned	50%	Farrukh jamal M.Bilal Shafaqat ali (Presentation)
Initial Prototype	10/1/2018	Milestone	50%	Both
Website Development	20/1/2018	Milestone	100%	Both
Final Report	30/1/2018	Estimated	100%	M.Bilal(Report) Farrukh jamal(Report)

The purpose of roles & responsibility matrix is to identify who will do what.

1.6.1.3. Change Control System:

As we describe, the overall project development following the agile methodology that work as iterative in loop so that that system easily can change on the base of new requirements.



1.1. Figure: SDLC

1.1.1. Reports / Documentation:

1.1.1.1. Final Documentation Introduction:

We are going to develop the Online university finder as changing in trend basically that project consists of two main part or web application and android application and C Sharp.

1.1.1.2. Literature / Markey Survey:

We have seen the lot of problems for the student's .It is very difficult to go individually in every university and get information about university this is too much time and money consuming that's why we are decided to make this online university finder system.

1.1.1.3. Requirements Analysis:

As mention above that, student can login in our website and give a proper information about his/her study and after completion the form when he click on submit they can get a result about their information that they are entered. Basically our motive is to give proper guidelines for admission to students.

1.1.1.4. System Design:

In this phase, different types of diagram build for the project like DRD, ERD, and communication and class diagram. It depends upon developer understanding. Architecture design diagram is one of high-level design. These diagrams help to understand the system problem how to build.

1.1.1.5. Implementation:

Implement the code according to requirement of the system. Here, we can divide work into small modules to reduce the complexity of the system and after implementing all types of modules, all modules will decompose.

1.1.1.6. Testing & Performance Evaluation:

After the implementation of code of given requirement the testing phase is use to remove the errors from the code and enhance the performance of the system. At the end of the all process the user acceptance testing will decides that “is project developed as user interested or not”.

1.1.1.7. End User Documentation:

This web based application that overcomes the issues of managing and finding easily choice according to user needs. Every user of our application is our target to feel reliable when it will use this application.

1.1.2. Work Breakdown Structure:**1.1.2.1. Initial level**

- Interview, survey & research
- Analysis research & find figures
- Deliverable: Submit initial report
- Project Signed/Approval

1.1.2.2. Planning

- Define Scope Statement
- Determine Project Team & responsibilities
- Develop Project Plan

- Submit Project Plan
- Milestone: Project Plan Approval

1.1.2.3. Execution

- Gather Requirements
- Verify & Validate Requirements
- Design System
- Develop system
- Testing Phase
- Go Live

1.1.2.4. Close

- Update Record
- Effectiveness of change

1.1.3. Roles & Responsibility Matrix:

The “Table: Role & Responsibility” describes that who will do what.

WBS #	WBS Deliverable	Activity #	Activity to Complete the Deliverable	Duration (# of Days)	Responsible Member(s) & Role(s)	Team
1	1.1 Initial level	1.1.1	Interview, survey & research	7	Team	
		1.1.2	Analysis research & find figures	4	Team	
		1.1.3	Deliverable: Submit initial report	2	Team	
		1.1.4	Project Signed/Approved	2	Team	
	1.2 Planning	1.2.1	Define Scope Statement	5	Farrukh jamal, Shafaqat ali	
		1.2.2	Determine Project Team & responsibilities	2	M.Bilal,	
		1.2.3	Develop Project Plan	5	M.Bilal	
		1.2.4	Submit Project Plan	4	Team	
		1.2.5	Project Plan Approval		Team	
	1.3 Execution	1.3.1	Gather Requirements	10	Team	
		1.3.2	Verify & Validate Requirements	3	Team	
		1.3.3	System Design	20	Team	
		1.3.5	Testing Phase Test cases Test plans	14	Team	
			Implementation		Team	
	1.4 Close	1.4.1	Update Records			
		1.4.2	Effectiveness of change			

1.2. Table: Role & Responsibility

1.2.1. Gantt chart:

The “fig: Gant Chat” shows the execution of project with the respect of passage of time step by step.

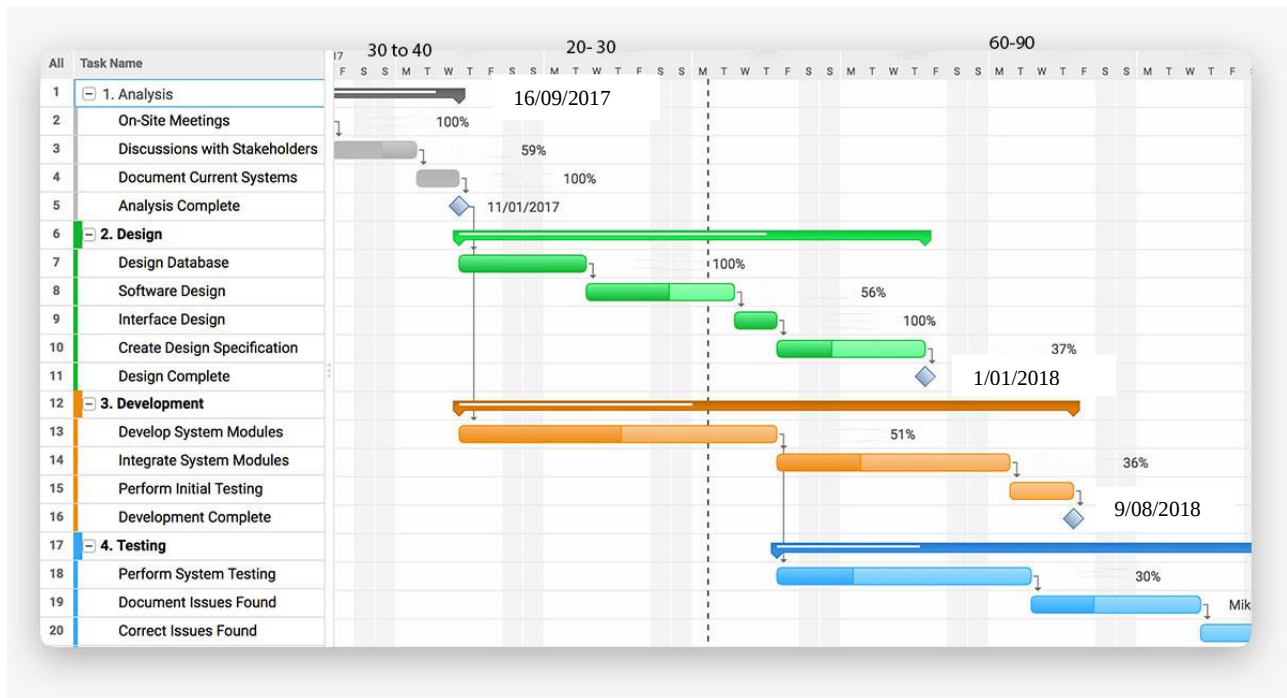


Figure.1.2.1: Gantt Chart

Chapter 2

Software Requirement Specifications

2.1. Introduction

2.1.1. Purpose

This is a communication gap, which has to be effectively bridge requirement specification is done in order to understand the problem the software system is to solve. For large system that have many features and that need to perform many different tasks, understanding the requirements of the system is a major task. The emphasis in requirement analysis is on identifying what is needed from the system, not how the system will achieve its goals. This task is complicated by the fact that there are often at least two parties involved in software development a client and a developer. The developer usually does not understand the issue involved in software system analysis.

2.1.2. Document Conventions

There are two major activities in this phase:

- **Problem Analysis or Understanding**
- **Requirement Specification**

In the problem analysis, the analyst has to understand the problem and its context. Such analysis typically requires a thorough understanding of the existing system, part of which has to be automated. A clear understanding is needed of the important data entities in the system, major Centre where action is taken, the purpose of the different action that are performed and the inputs and outputs. This requires interacting with clients and end users,

as well as studying the existing manual procedures. With the analysis of the current system, the analyst can understand the reason for automation and what affects the automated system might have.

2.1.3. Intended Audience and Reading Suggestions

This document is intended for all individuals participating in and/or supervising the “Online university finder” project. Readers interested in a brief overview of the product should focus on the rest of Part 1 (Introduction), as well as Part 2 of the document (Overall Description), which provide a brief overview of each aspect of the project as a whole. These readers may also be interested in Part 6 (Key Milestones) which lays out a concise timeline of the project. Readers who wish to explore the features of “Online university finder” in more detail should read on to Part 3 (System Features), which expands upon the information laid out in the main overview. Part 4 (External Interface Requirements) offers further technical details, including information on the user interface as well as the hardware and software platforms on which the application will run. Readers interested in the non-technical aspects of the project should read Part 5, which covers performance, safety, security, and various other attributes that will be important to users. Readers who have not found the information they are looking for should check Part 8 (Other Requirements), which includes any additional information which does not fit logically into the other sections.

2.1.4. Product Scope

MODULE: University finder contains following modules:

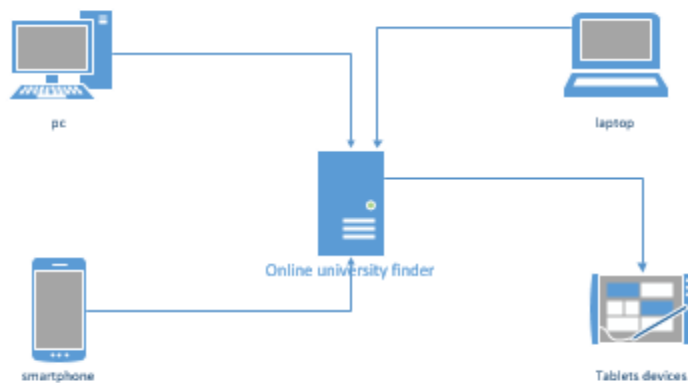
1. **Student Module:** Students can register themselves in this module and can access any information about the university they wish to get, can get via this module. Students need to register compulsorily so that they can access the hidden details also. Also, after registration students can get timely update about the latest trends too.
2. **University Details Module:** All the university details such as outlines of university, placements, fields in which they are best at, locations, emails, phone numbers and all other details are put up in this module.
3. **Admin Module:** In this module admin check overall activity he has authorized access to remove and add students.

4. **Test Sample:** If a student got his/her eligible university according to their marks and he can get admission info and admission test samples about the desire university.
5. **News Feed:** In this section we provide latest admission scholarship info about university and other facilities to the student.
6. **Alumni Portal:** Get information about alumni's and also gets job opportunities.
7. **FAQ** in this content user can contact with us and get help from our community online.

2.2. Overall Description

2.2.1. Product Perspective

3. Online University finder application will be a new application/website in Pakistan that provide a better solution and facilitate the students for better guidance.



2.1. Fig: Server Computer Interaction (Online University finder)

2.1.1. Product Functions

The product should have an easy to use main menu, from which the rest of the features or functions can be accessed. These main features as listed are: basic viewing and account login.

Privilege is the important function, which gives user's accessibility to different modules of this system.

Different privilege is assigned to different roles such as moderator, general user.

Message passing using student forum is an important feature of the system.

Student can upload there Resume is an additional function given to the users.

Student forum creation is the function, which facilitates students to create a unique discussion platform to share new ideas or views related to his filed.

2.1.2. User Classes and Characteristics

2.2.3.1 Customer

Our application hopes to draw on three main user groups. The students almost all of them have smartphones. About half of those smartphones are Android, and more than half of those Android phones are fit to run university finder application. These users are passionate with social media, and almost all of them actively use at least one of the following: Facebook, Twitter, and Instagram.

The application will be helpful to parents, prospective students, professionals, or speakers those are not familiar with many of the campus and buildings. Members of this group may be interested in learning more about university campus history.

2.1.3. Operating Environment

The application will only be available for the Android operating systems. The application shall only be used with compatible android devices. The user shall use this application on Android OS 2.2(API 8) or any later versions of the Android OS. The following diagram shows how the application shall interact with the eclipse API and cloud database.

2.1.4. Design and Implementation Constraints

Implementation language restrictions

- The programming language shall be Java for the main application.
- The programming language shall be SQL for the cloud targets database

Resource limits.

- The users" device shall have a working data plan or Wi-Fi connection.
- The users" device shall have sufficient memory storage to install the application.
- The users" device shall have sufficient battery life to run the application

Hardware.

2.1.5. User Documentation:

- Tutorial.
- The user shall be able to see a tutorial the first time they start the application.
- The tutorial will be a series of splash screens that illustrates how to use each feature.
- This tutorial will not automatically show more than one time.
- There will always be a "help" button available in the menu if user needs revisit the tutorial.
- Online Help.
- There shall be contact information posted in "about" page.
- The user shall be able to contact the developers regarding any issues they encounter.

2.1.6. Assumptions and Dependencies

1. Time Dependencies

Dependencies

The application shall be used with the assumption that the Android API and licensing Agreement remains the same. Software Component Dependencies The application shall be used with the assumption that the built in camera application Operates correctly

The application shall be used with the assumption that the device's network interface Card and driver are operating correctly.

2. Hardware Dependency

The application is intended to be a stand-alone, single-user system. The application will run on an Android mobile device or an Android emulator. No further hardware devices or interfaces will be required.

2.2. External Interface Requirements

2.2.1. User Interfaces

In layout first page of website on the top left is our logo of website.

Then the 2nd slide bar on top we include 6 buttons or menu bar.

- Home
- Test Sample
- Scholarship
- Alumni
- About us

Software Interfaces

The software will run on the Android operating system, specifically version 2.3 (Gingerbread) and above.

The major part of our application is connectivity to SQL lite database that stores the data of every user which is registered in our app or website in registration from information that we get such as (first name 'last name' gender' date of birth' city' Contact number 'Email ')

Operating systems that we use is window XP and android Verification through Facebook and Gmail. And other social networks protocols. The data that will be shared across software components is based on user which type of user and what they want. If the data sharing mechanism must be implemented in a specific way (for example, use of a global data area in a multitasking operating system), specify this as an implementation constraint.

Communications Interfaces

The application shall communicate with the various databases and software services via API function calls. Because the application will be written in Java, Java functions will make these

calls to the APIs. The exact formats and protocols for incoming and outgoing messages should be abstracted by the APIs.

We used communication materials for our project that are Facebook and Instagram, Google That is helpful to our user we make discussion portal or form to our Website user can ask and share their problems and discussed about the related things like feedback and comment section.

2.3. System Features

Website Design

A good website design must meet three needs. They are referred as AAA website Configuration.

* **Authentication**- Verifying a User's Identity.

Authorization -Specifying permissions for a user.

* **Accountability**- Monitoring a User's activities.

2.3.1. System Feature 1

User Registration and welcome

1. Description and Priority

This feature will give the user a secure and simple login screen. The login is enabled for the online university finder.

Administrator use only and is not accessible to any other than the university administrator. It has only limited and handful of input capability of limited number of administrator in the university. Any student cannot enter the routine settings and hamper the system.

2. Stimulus/Response Sequences

It will consist of two basic fields, Username and Password. A message is boldly displayed at the screen defining the login is for the administrators only. There is a button Login for submitting the entered username and password. On successful entry the user will be provided with the administrator control page to control all the settings of the database and on unsuccessful login the user is directed again to the same login page with an error message.

3. Functional Requirements

The most important function of the login page is to provide access only to the registered university administrators. The university must provide the users for the post of administrators and those who will be modifying the routine.

REQ-SF1- Providing the users to be listed as the administrators.

REQ-SF1-2: Correct username and password to enter into the administrator controls.

REQ-SF1-1: Notification.

Description and Priority

This feature will give the user real time update notification. The notification is enabled for the Appertains. Any student can get updated notifications as they are the obsolete users of the application.

2.1.1.1. Stimulus/Response Sequences

Only the Albertans can get updated notifications. Non Albertans are only provided with basic information about university campus and admissions.

2.1.1.1. Functional Requirements

The most important function of the notification is to provide important events and special occasions that are coming later.

2.1.2. University Location

Search match on the bases of some attributes.

2.1.2.1. Description and Priority

The application provides Location service. An outsider can access the university by location.

2.1.2.2. Stimulus/Response Sequences

Application is connected to the Google map, so the application connects to the Google map for route service.

2.1.2.3. Functional Requirements

This application requires a android smartphone with pre-loaded or online Google map for the location service.

2.2. Other Nonfunctional Requirements

2.2.1. Performance Requirements

Real-Time

The application will provide up-to-date information. It should display the latest results at all times, and if it lags behind, the user should be notified.

2.2.2. Safety Requirements

User needs to sign in with their account to prove their identity (Albertan) before using.

User shall not use our application while driving or biking.

2.2.3. Security Requirements

The security system features from having a login for all the users to access the applications full features. The login details will be used in the system also. So the chances of the application getting intruded are very less.

- Login Requirements.
- Password requirements.
- Online University Finder.
- Inactivity timeout.

2.2.4. Software Quality Attributes

- **Reliability**

The application will meet all of the functional requirements without any unexpected behavior. At no time should the gauge output display incorrect or outdated information without alerting the user to potential errors.

- **Business role**

List any operating principles about the product, such as which individuals or roles can perform which functions under specific circumstances. These are not functional requirements in themselves, but they may imply certain functional requirements to enforce the rules.

- **Other Requirement**

Define any other requirements not covered elsewhere in the SRS. This might include database requirements, internationalization requirements, legal requirements, reuse objectives for the project, and so on. Add any new sections that are pertinent to the project.

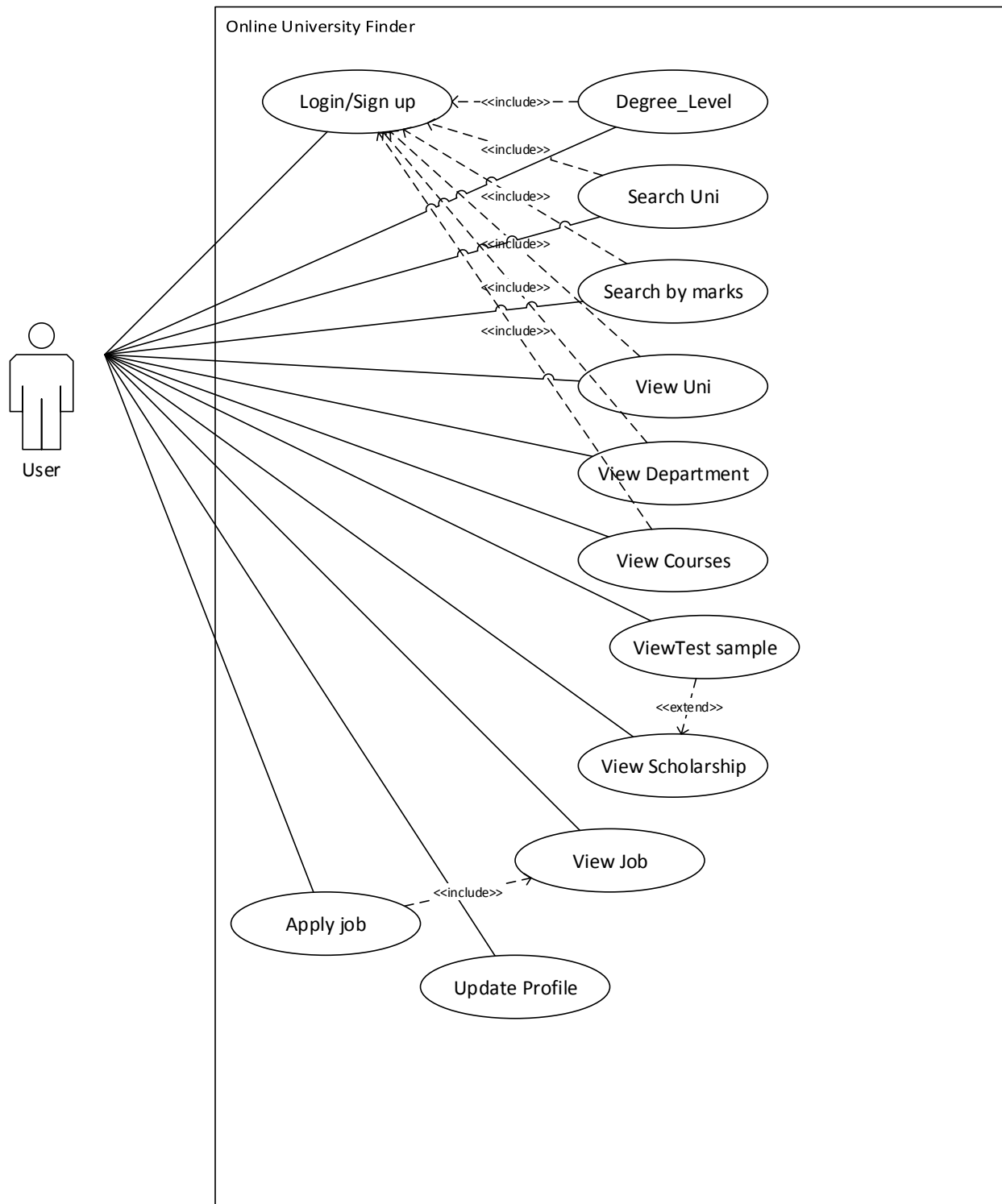
Chapter 3

Use Case Analysis

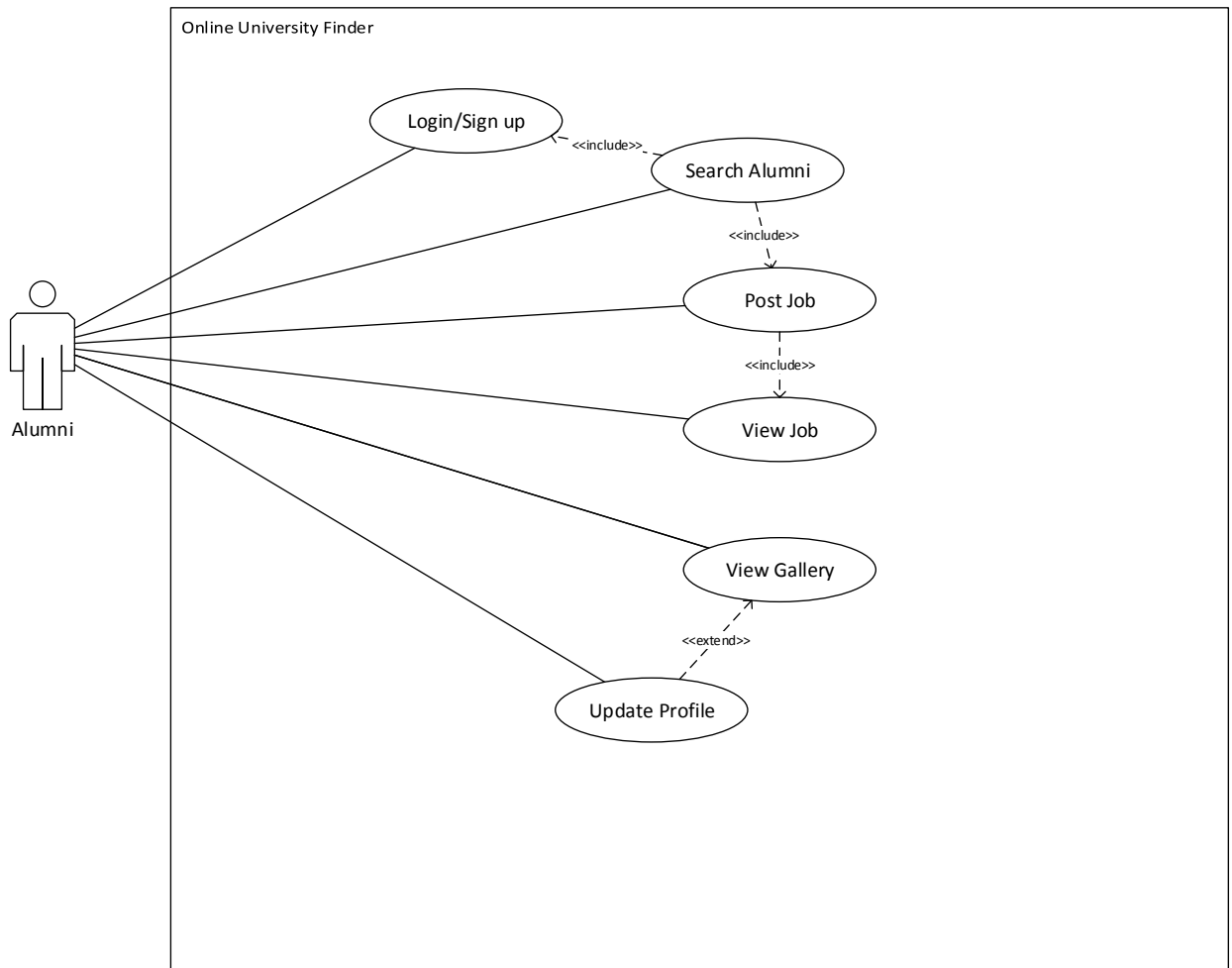
Chapter 3: System Analysis:

The system analysis chapter is about to all feature of the “Online university finder” project and also provides the description that preforms or can do what. This chapter contains the use case diagram of the “Online university finder” In which all factor is configure and the dependences relate to functionalities.

3.1. Use Case Model



3.1. Fig: Use Case1 for user

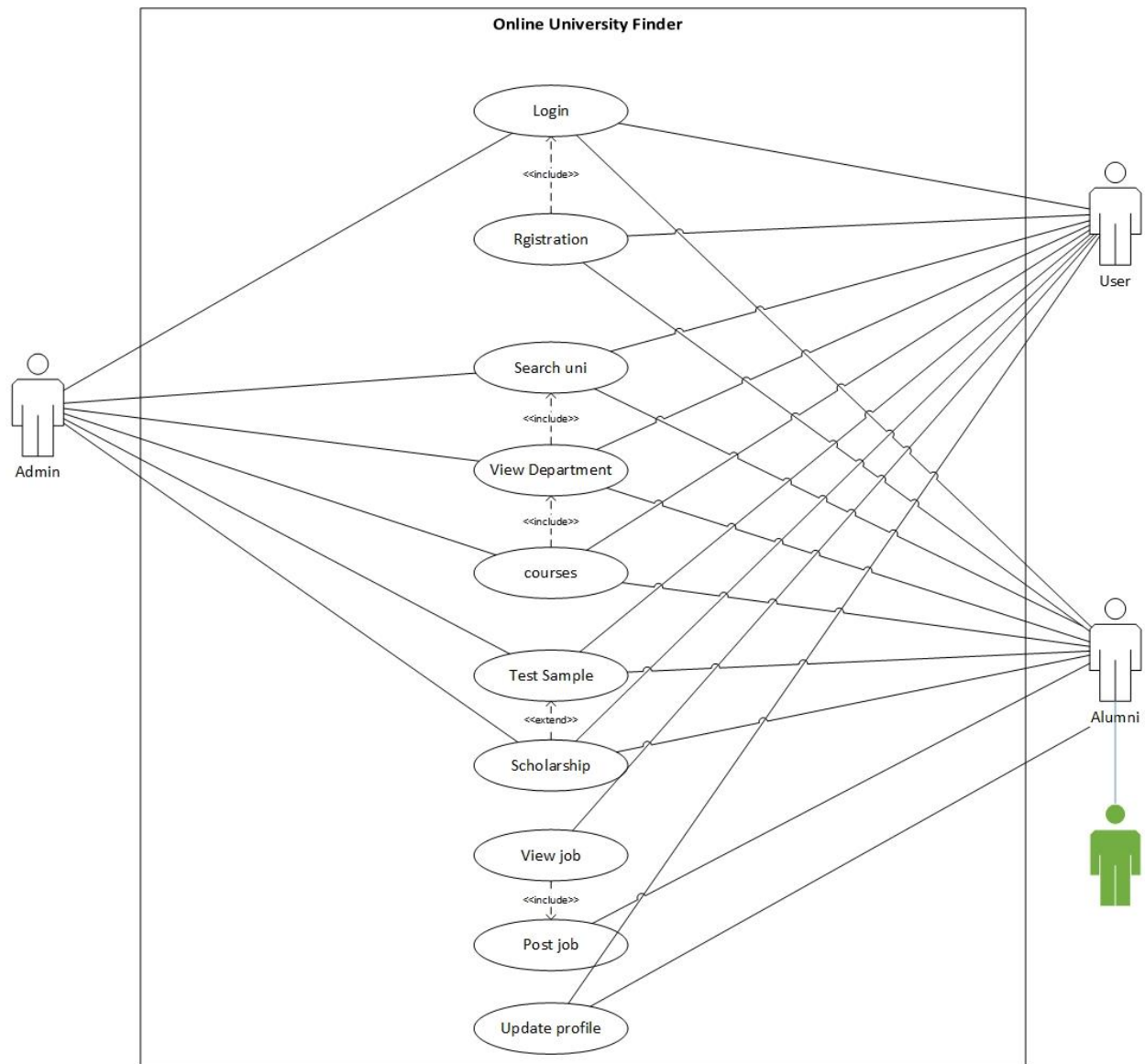


3.1. Fig: Use Case2 for Alumni



3.1. Fig: Use Case2 for Admin

3.2. Fully Dressed Use Cases:



3.2. Fig: Use Case Model

Use Case: 1**Name:** Signup**Actor:** Non Member (Student).**Description:**

This use case begins when any user wants to register with app. The app asks for his information. System will verify the provided information and on verification register user as member of online university finder. The user will now be allowed to interact with the app.

Precondition:

The user must have ID

Typical Course of Events

Actor Action	System Response
1. This use case begin when any user want to sign up the application.	1. System asks for user id
2. The user will provide his data	2. System will verify the user data
	3. System asks for other basic information
3. user provide the information	4. System save the information in repository
	5. Update the user list

Alternative Course:

4. Line 3: Wrong id entered; indicate error

Use Case: 2**Name:** Log/In.**Actor:** user or already member Activities.**Description:**

This use case begins when any actor of this app wants to login. The app asks for actor name and password. The actor will give the username, password. System will verify the provided information and on verification give access of application with predefined access privileges of actor.

Precondition:

The actor must have user ID and admin will also have a unique code.

Typical Course of Events

Actor Action	System Response
1.This use case begins when any actor of app want to login	1. System asks for username and password
2. The actor will provide username, password	2.The system will verify the username, password
	3. The system will determine the access privilege level of actor
	4. The system will also give access to actor with determined privilege level

Alternative Course:

Line 4: Wrong User name, password; System asks to re-enter.

Line 3: Actor is not a member; System will display a message to indicate him non member

Use Case: 4**Name:** Manage app (Administrative)**Actor:** user activities**Description:**

This use case begins when admin of app wants to update information about any related things. The system asks the information and record the updated information.

Precondition:

The admin Activities is logged in and has privilege of management, update and deletion.

Section Main:**Typical Course of Events**

Actor Action	System Response
1. This use case begins when admin wants to update a user/university record etc.	1. System asks about the user which he/she wants to update.
2. The admin will provide the information or select the user he wants to update	2. The system will display the options of updating
5. admin will select one of the option If wants to Add user, see section Add user If wants to Add Event, see section Add Event If wants to Take Report, see section Take Report If wants to Remove user, see section Remove user	3. Save the information
	4. Update repository

Section: Add_Sub_University_Campus**Typical Course of Events**

Actor Action	System Response
1.This use case begins when admin wants to add a sub category of university to an existing data	1. System asks for the name and information of data.
2. The admin of app activities provide the required information	2. System verifies the name of the user/university.
3. admin of app activities will inform about main activity	3. System asks about the main part of the app
	4. The system will create the sub category
	5. The system will save the provided information of about app and update data
	6. The system will publish the information
	7. The system will update the existing data and display the information

Alternative Course:

Line 5: user name already exist; indicate error; ask to re-enter

Section: Add Event**Typical Course of Events**

Actor Action	System Response
1. This use case begins when developer of app activities has received a request for an event by educational purpose.	1. System asks for the event information to which the event is supposed to be added
2. The Director of app will approve the event and wants to add the event himself	2. System asks for the event information
3. The admin provide the event information	3. The system will save the provided information of society event
4. The admin of the app provide the event information	4. If the event is in tentative calendar, it will be marked as coming event If the event is not in tentative schedule it is added in the event list
	5. The system will publish the information of add event

Alternative Course:

Line 6: Entered date already passed; indicate error; ask to re-enter.

3.2.Fig: Fully dressed Use Case

Chapter 4

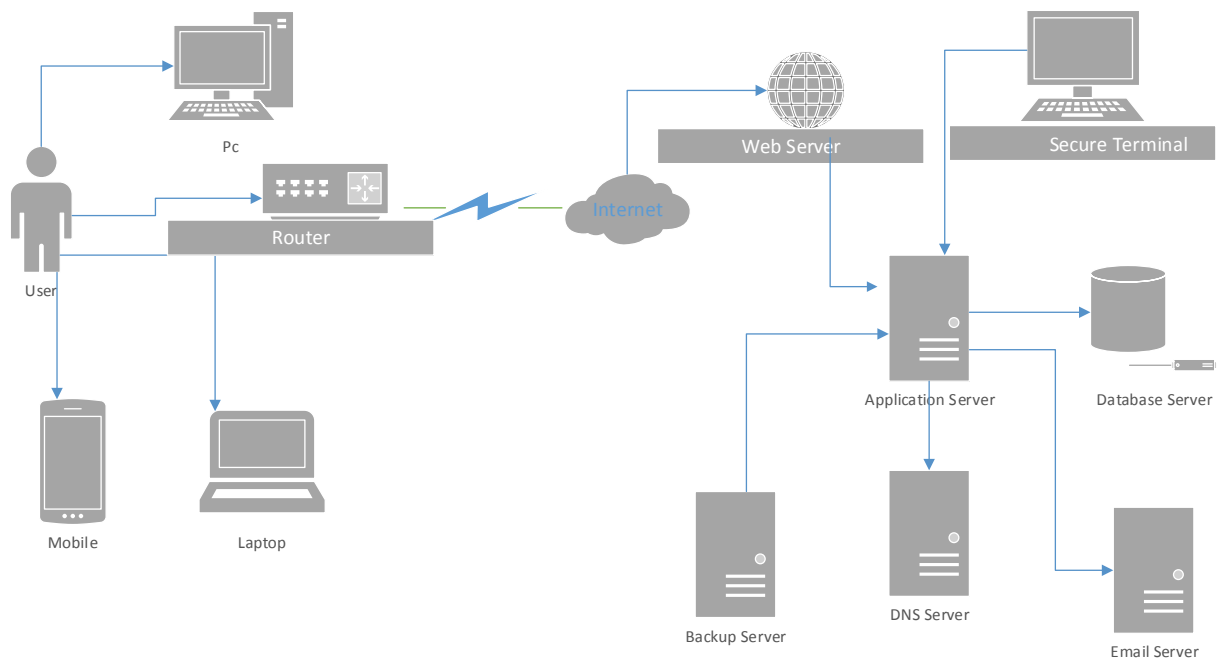
System Design

Chapter 4: System Design

The System Design consists of different types of “Online university finder” application’s diagram like class diagram, architecture diagram etc. All type of diagram have different quality attribute and different developers can’t understand all types of diagram they have different level of understanding so that’s way we make these diagrams.

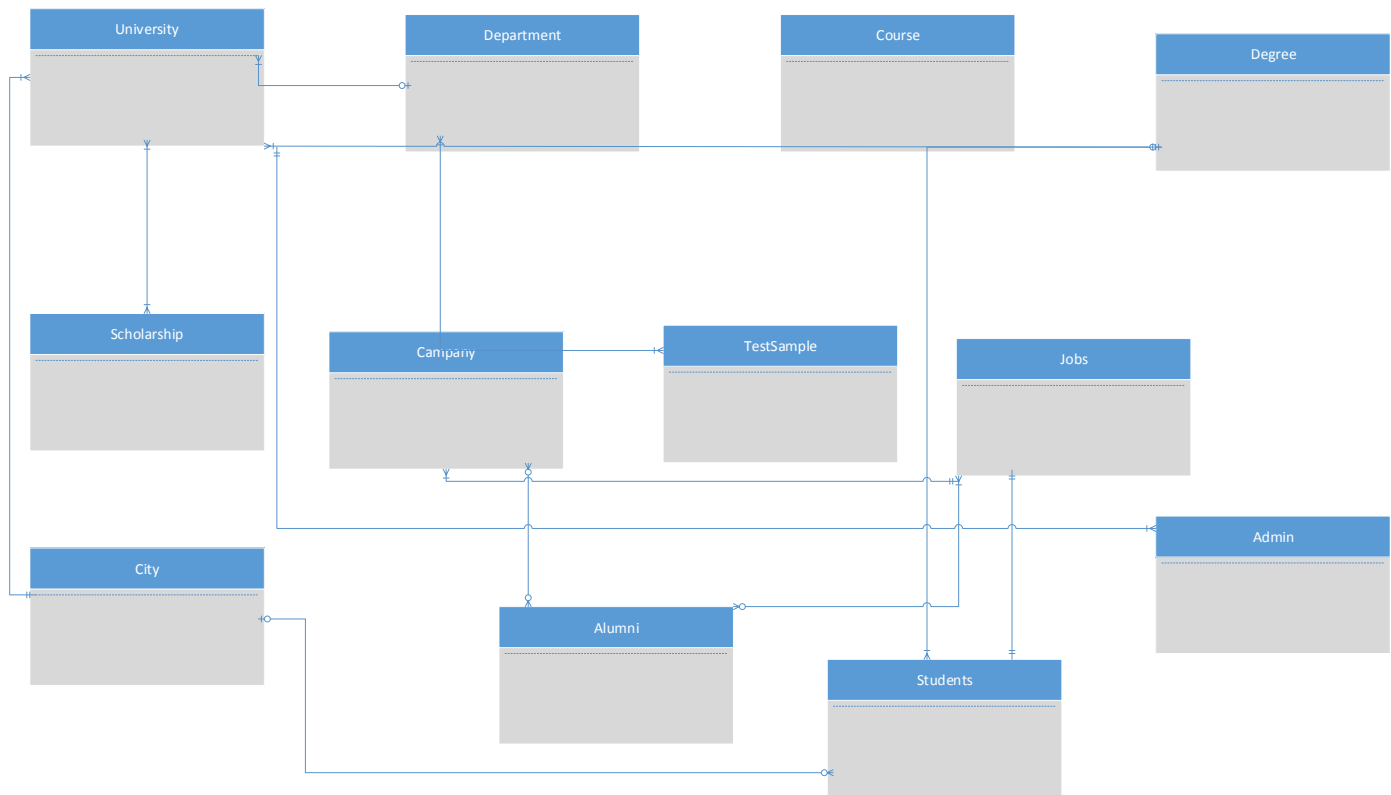
4.1. Architecture Diagram

Fig: Architecture Diagram shows the architecture of “Online university finder” system.



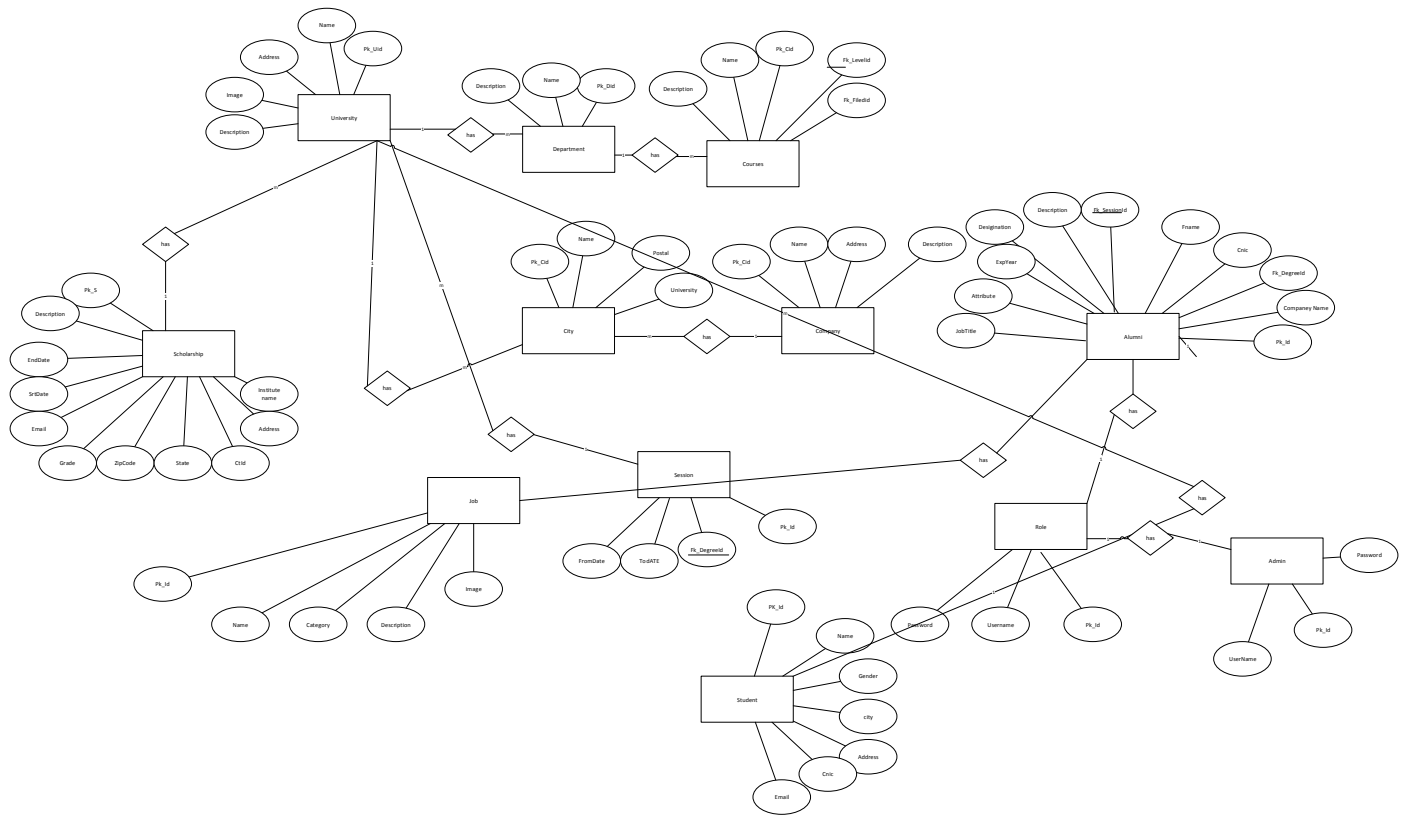
4.1. Fig: Architecture Diagram

4.2. Domain Model



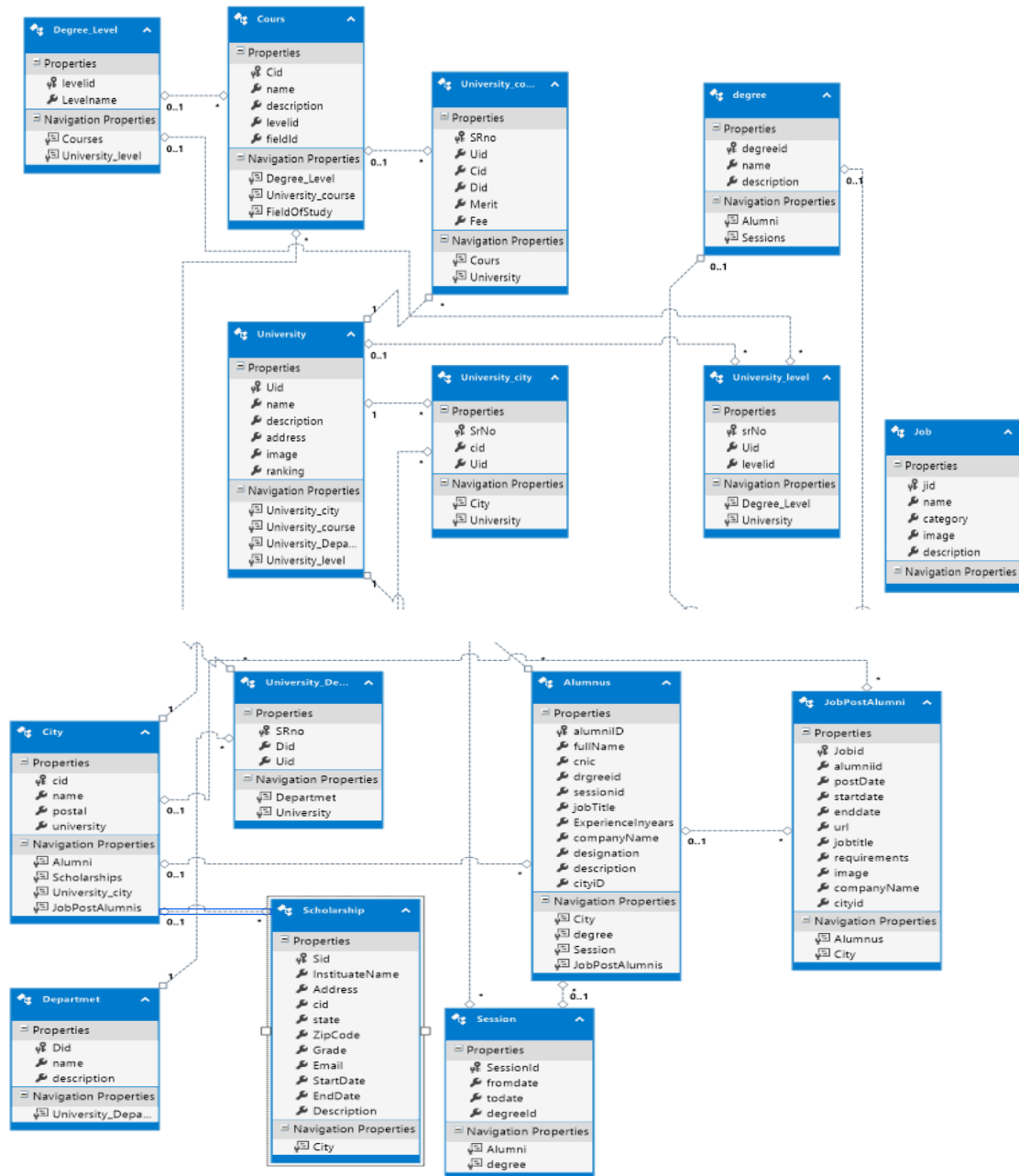
4.2 fig Domain model

4.3. Entity Relationship Diagram



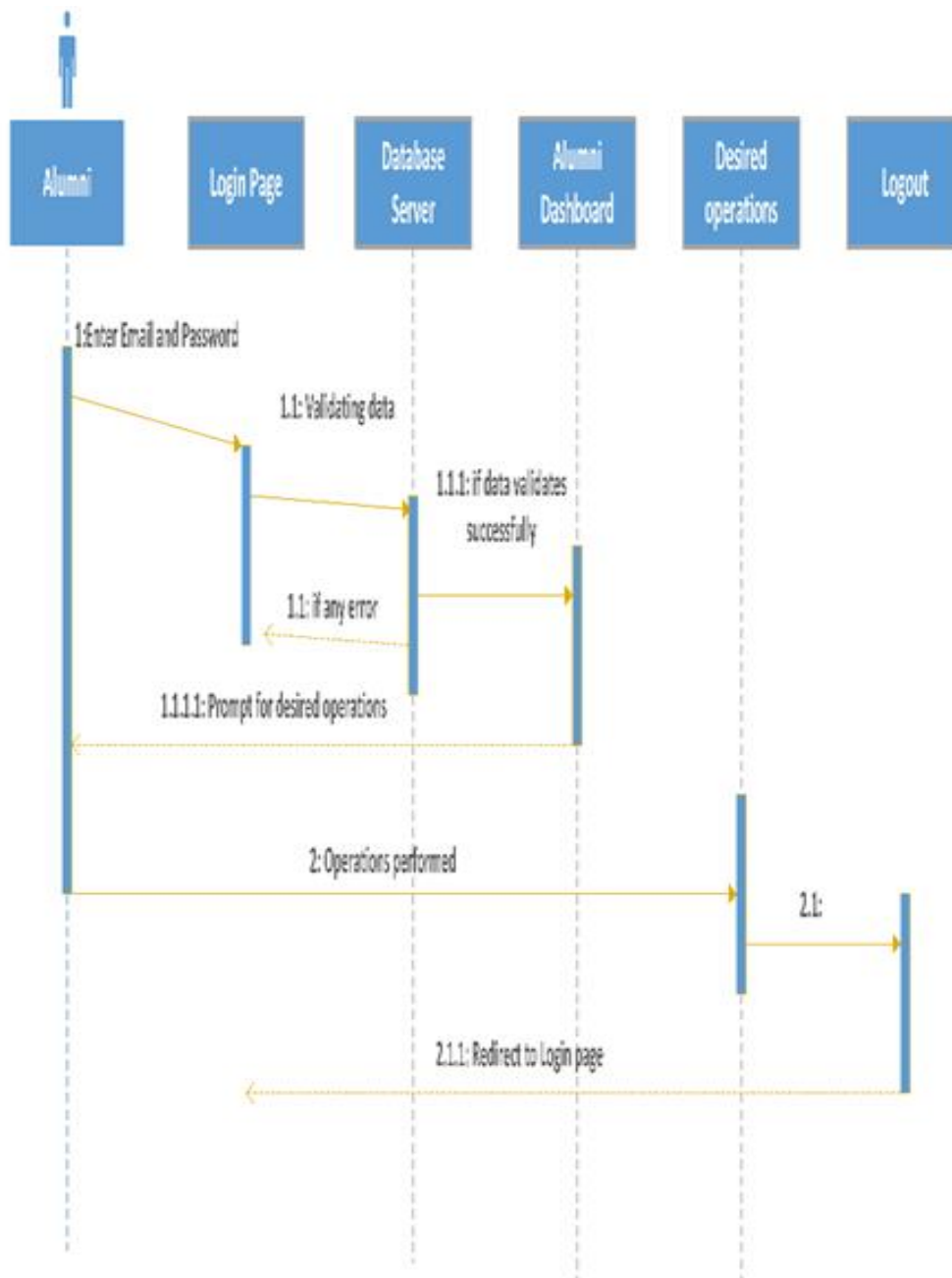
4.3. Fig: Entity Relationship Diagram

4.4. Class Diagram:



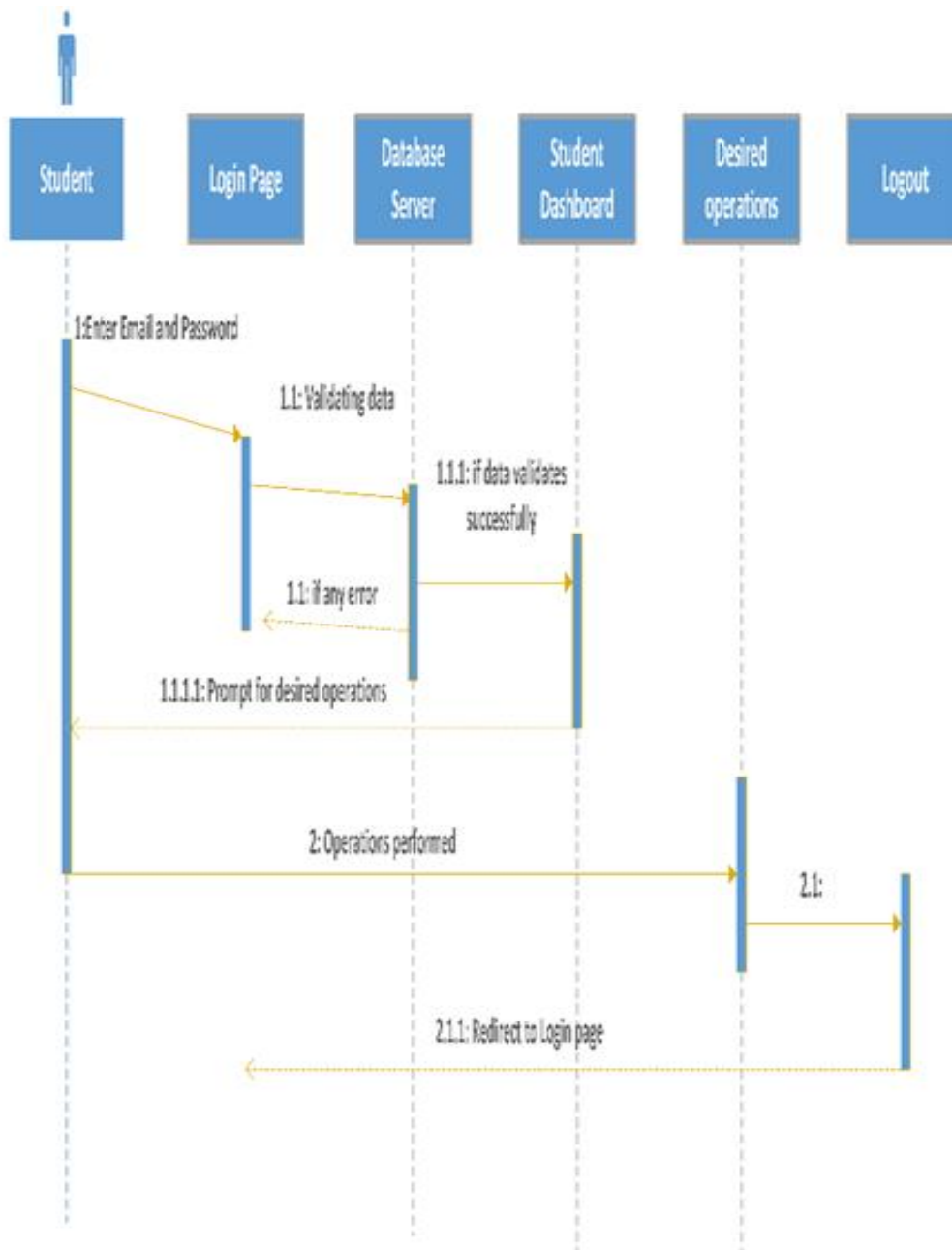
4.4.Fig: Class diagram

4.5. Sequence / Collaboration Diagram



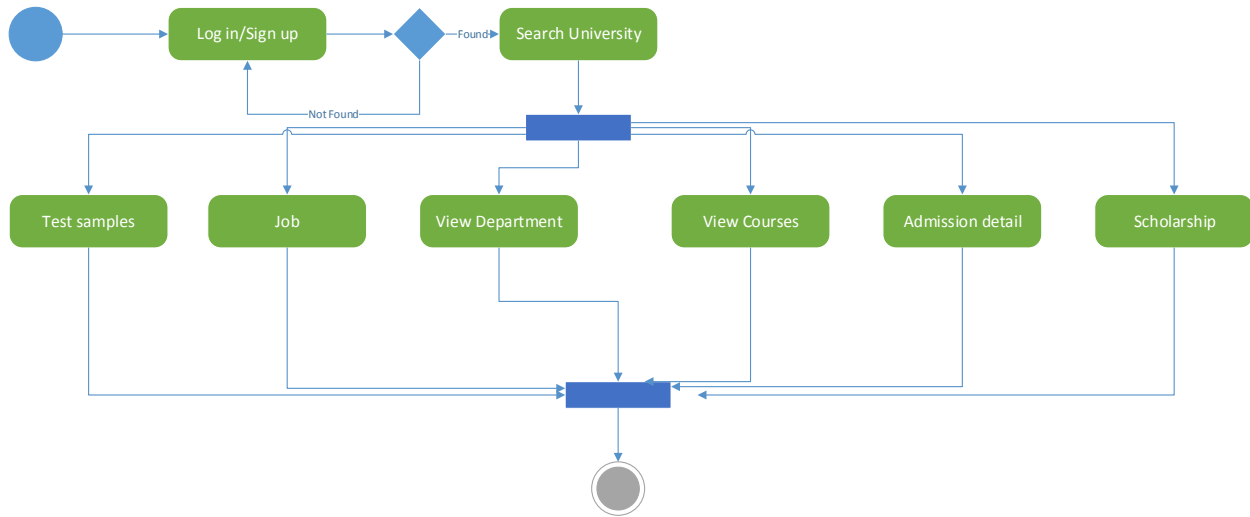
4.5. Fig: Sequence/Collaboration diagram

4.6 Fig: Sequence Diagram



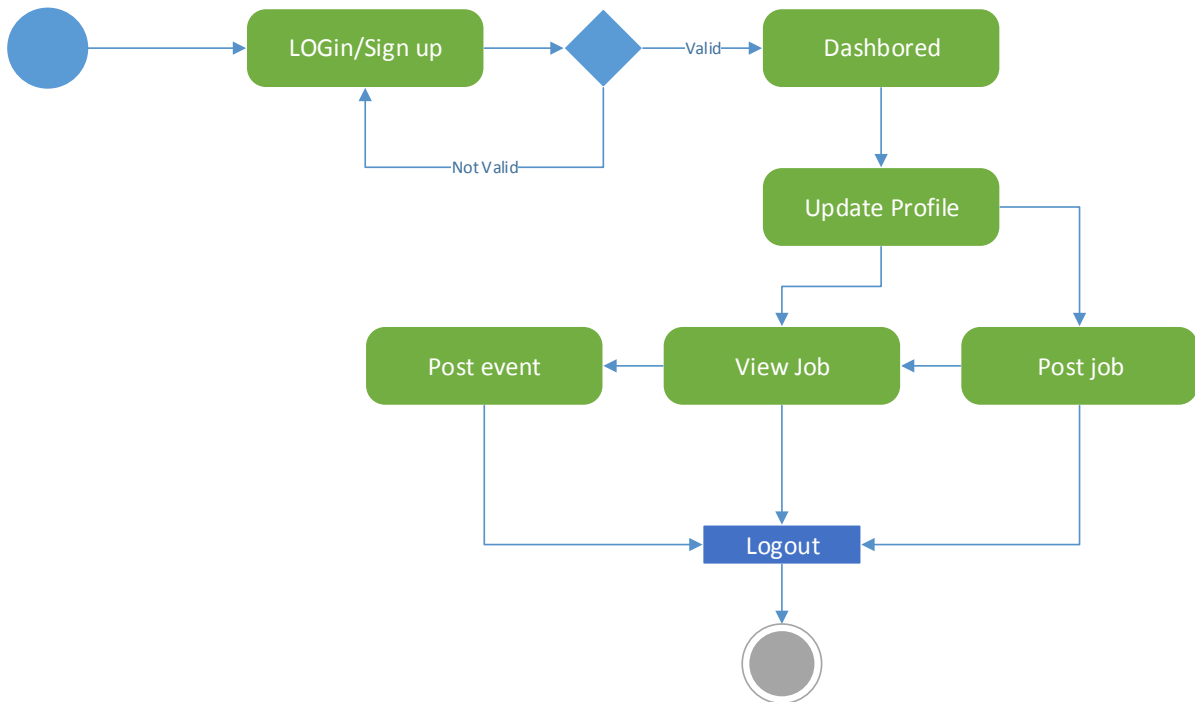
4.6. :fig Sequence Diagram

4.6. Activity Diagram

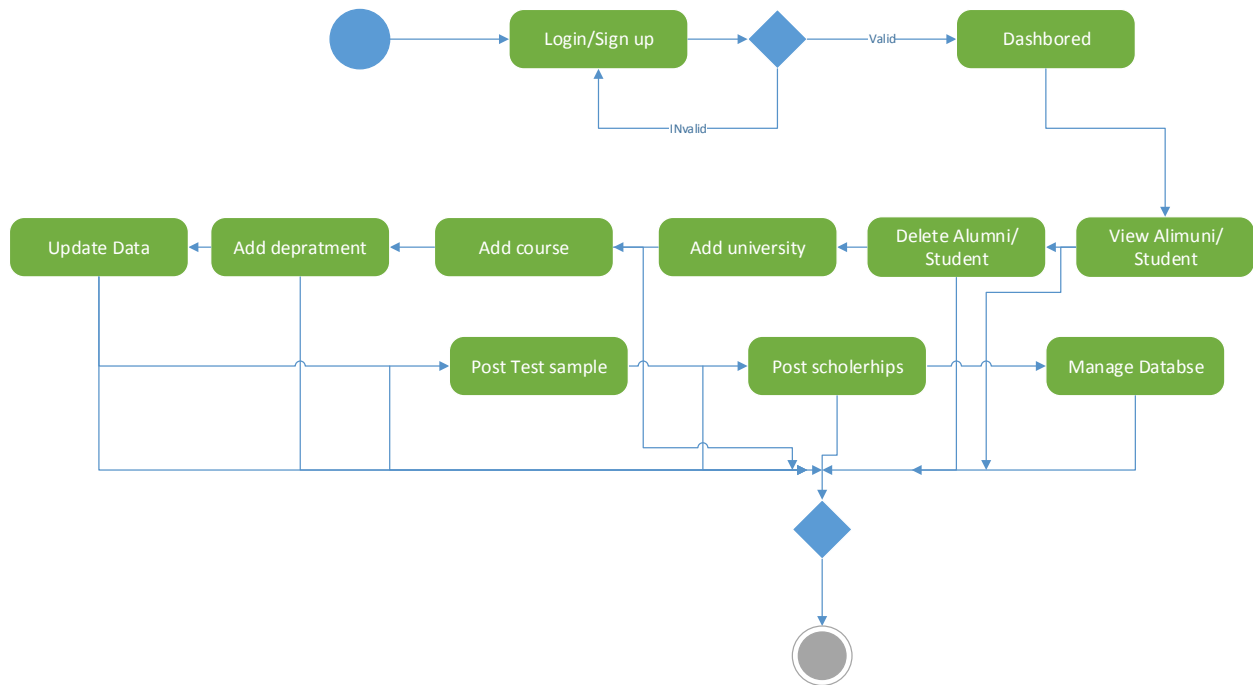


4.6. Fig: Activity Diagram for User

ALumni

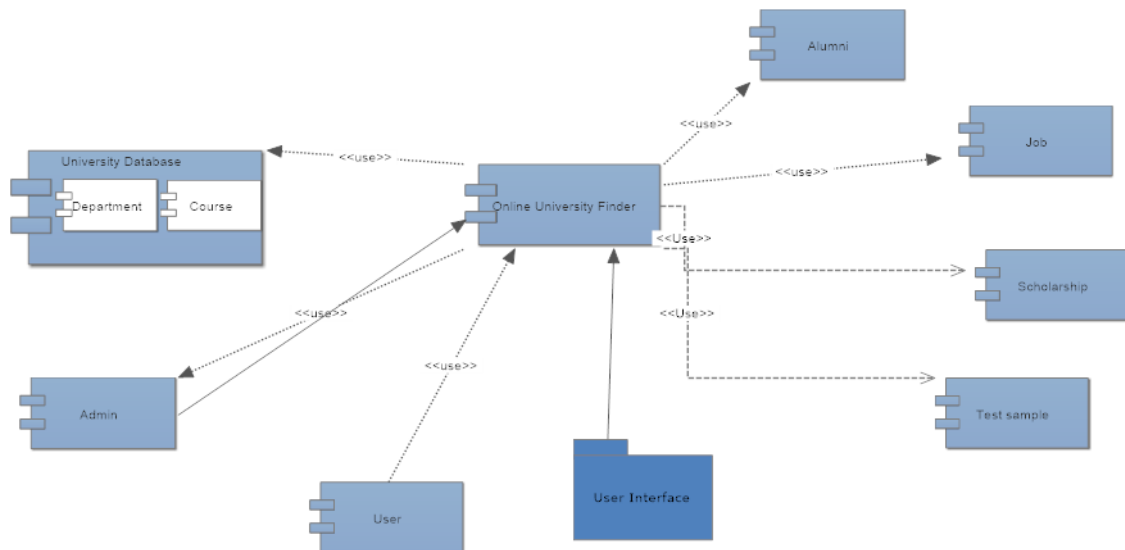


4.6. Fig: Activity Diagram for Alumni



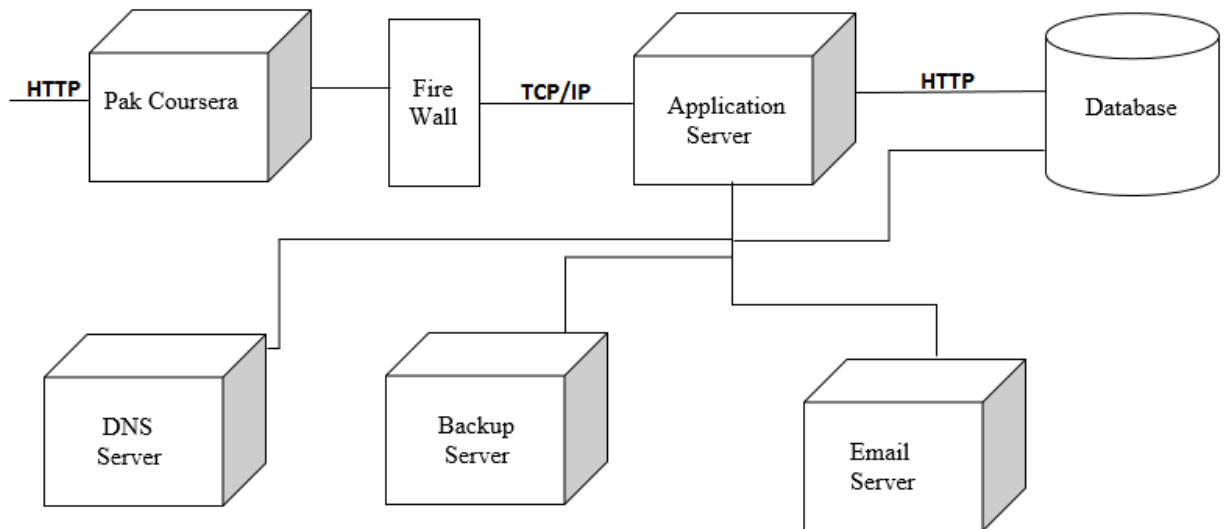
4.6. Fig: Activity Diagram for Admin

4.7. Component Diagram:



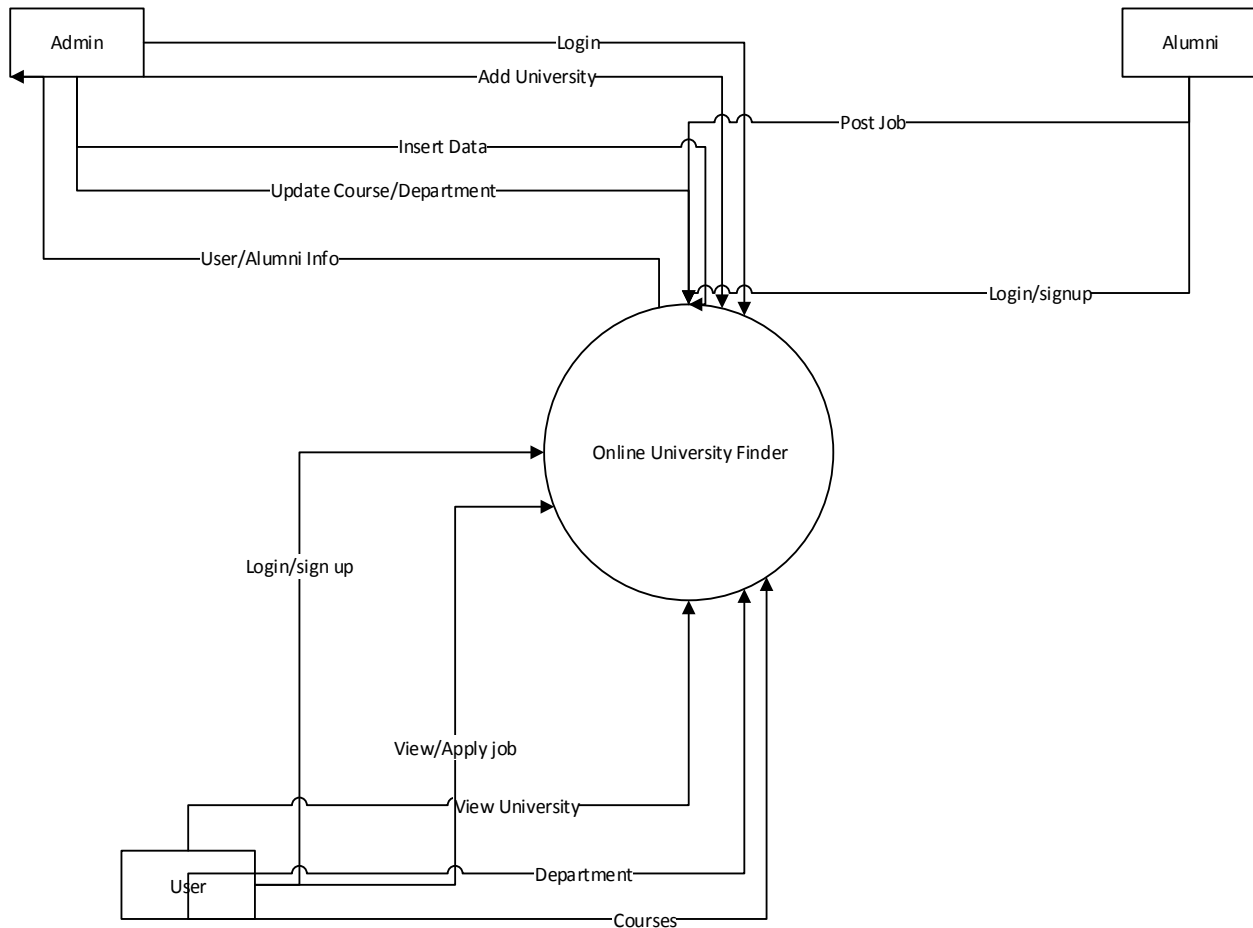
4.7. Fig: Component Diagram

4.8. Deployment Diagram:



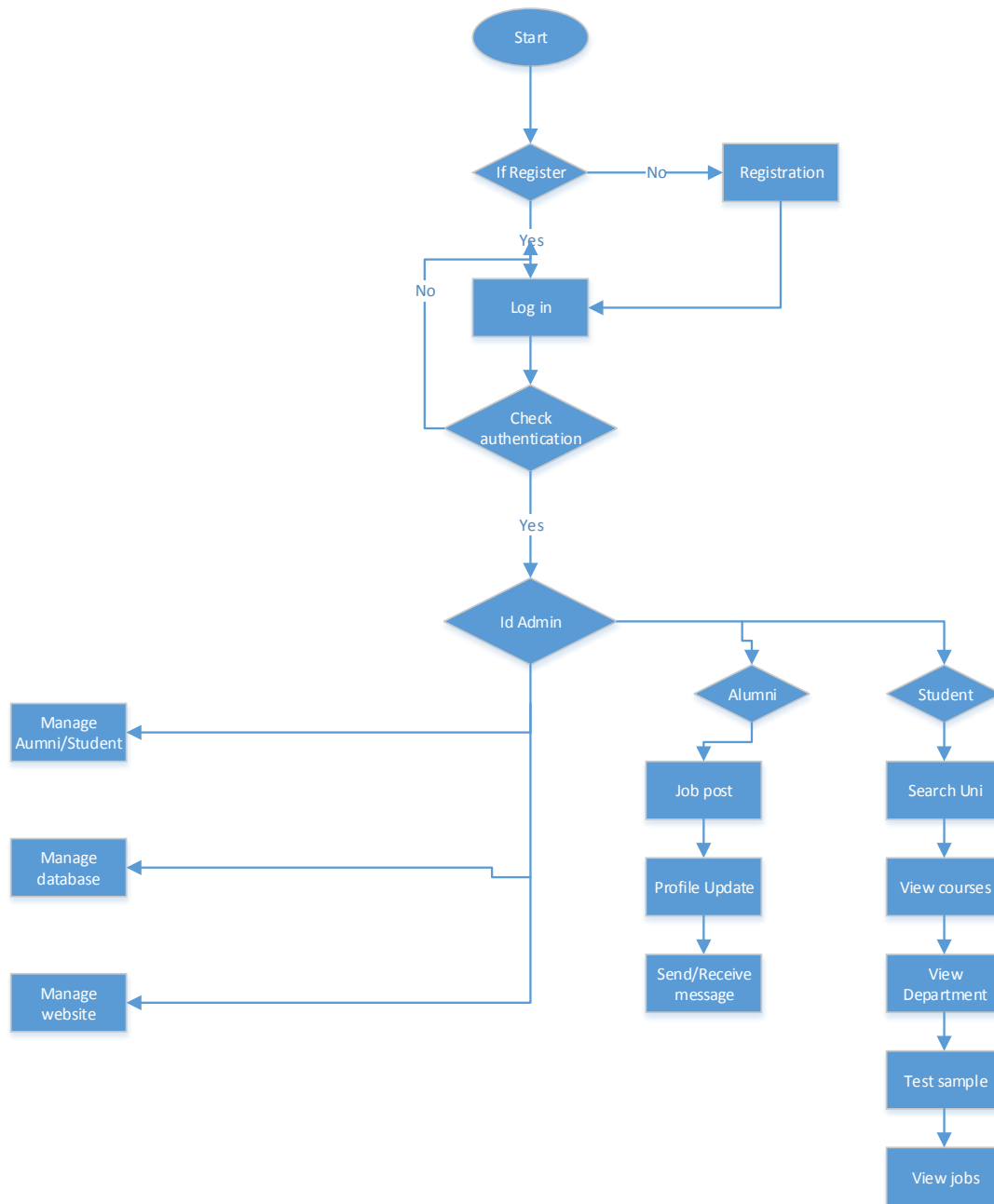
4.8. Fig: Deployment Diagram

4.9. Data Flow diagram (Only if structured approach is used - Level 0 and 1)



Level 0 Diagrame



Transition state:**4.9. Fig: Data Flow Diagram**

Chapter 5

Implementation

Chapter 5: Implementation

The implementation is the final and important phase .It Involve user training system Testing and successful running of the developed system. The user tests the developed system when changes are made according to their needs. Implementation is the stage where theoretical design turned into a working system Implementation is planed carefully to propose system to avoid unexpected problem.

5.1. Important Flow Control/Pseudo codes

- IF (New User)
- INPUT User account data or some authentications
- Search Match(On the bases of some attribute)
- Successful-match()
- IF(User-Account=="is already exist")Then
- User_access_services
- End-IF
- ELSE Then
- Provide Account info
- IF(User Select!=null)Then
- Store Data into Database and check info. Or authentication's
- END-IF
- END-ELSE
- END-IF
- ELSE If(User Already Exist)
- Login Authentication()
- Search Match(On the bases of some attribute)
- Accept-match()
- Send-Request()
- Logout()

5.2. Components, Libraries, Web Services and stub:

5.2.1. Components:

There are two main components of “Online university finder” system and that are listed below.

- Android Application
- asp.net website

Both type of application connected with a database which contains the all information of this system for searching or matching and account information and we use MS-SQLSERVER as database system.

5.2.2. Libraries:

- There some libraries which are mostly use in every project or software of asp.net and android java.

ASP.Net:

```
Using System;  
Using System.Collections.Generic;  
Using System.Linq;  
Using System. Web;  
Using System.Web.UI;
```

5.2.3. Web Services:

- SQL
- Web Application
- Java Platform Enterprise

5.3. Deployment Environment

Operating environment or Deployment Environment for the online university system is as listed below.

- distributed database
- client/server system
- Operating system: Windows, Android.
- database: MS-SQL

- platform: asp.net/Java/PHP

5.4. Tools and Techniques

The project “Online university finder” consists of two type of application. One is android application and the second is web application. Android app developed using android studio and the android SDK (Software development Kit) and the web application develop by using Microsoft Visual Studio tool in asp.net. Both type of application use the OOP (Object Oriented Programming) techniques which is the best technique.

5.5. Best Practices / Coding Standards

There four pillars of Object Oriented programming (OOP) are listed below which are very helpful for the reducing or reuse of program code and mostly developers use them.

- Inheritance
- Polymorphism
- Abstraction
- Encapsulation

There are some best practices/ coding standers are listed below which can help to understand the code of the application. If we don't follow these practices or coding standers we can't understand code after little time.

- Proper commenting at every condition's scope.
- No more than one statement per line.
- Line length should not exceed 80 or 100 characters.
- Test class must start with the name of the class they are testing followed by 'Test' Server Configuration test.
- One character variable names should only be used in loops or for temporary variables.
- Do not ignore exceptions that you caught.
- Do not catch broad exception classes like Exception or Runtime Exception.

5.6. Version Control:

Version control is a system that records changes to a file or set of files over time so that you can recall specific versions later. For the examples in this book, you will use software source code as

the files being version controlled, though in reality you can do this with nearly any type of file on a computer.

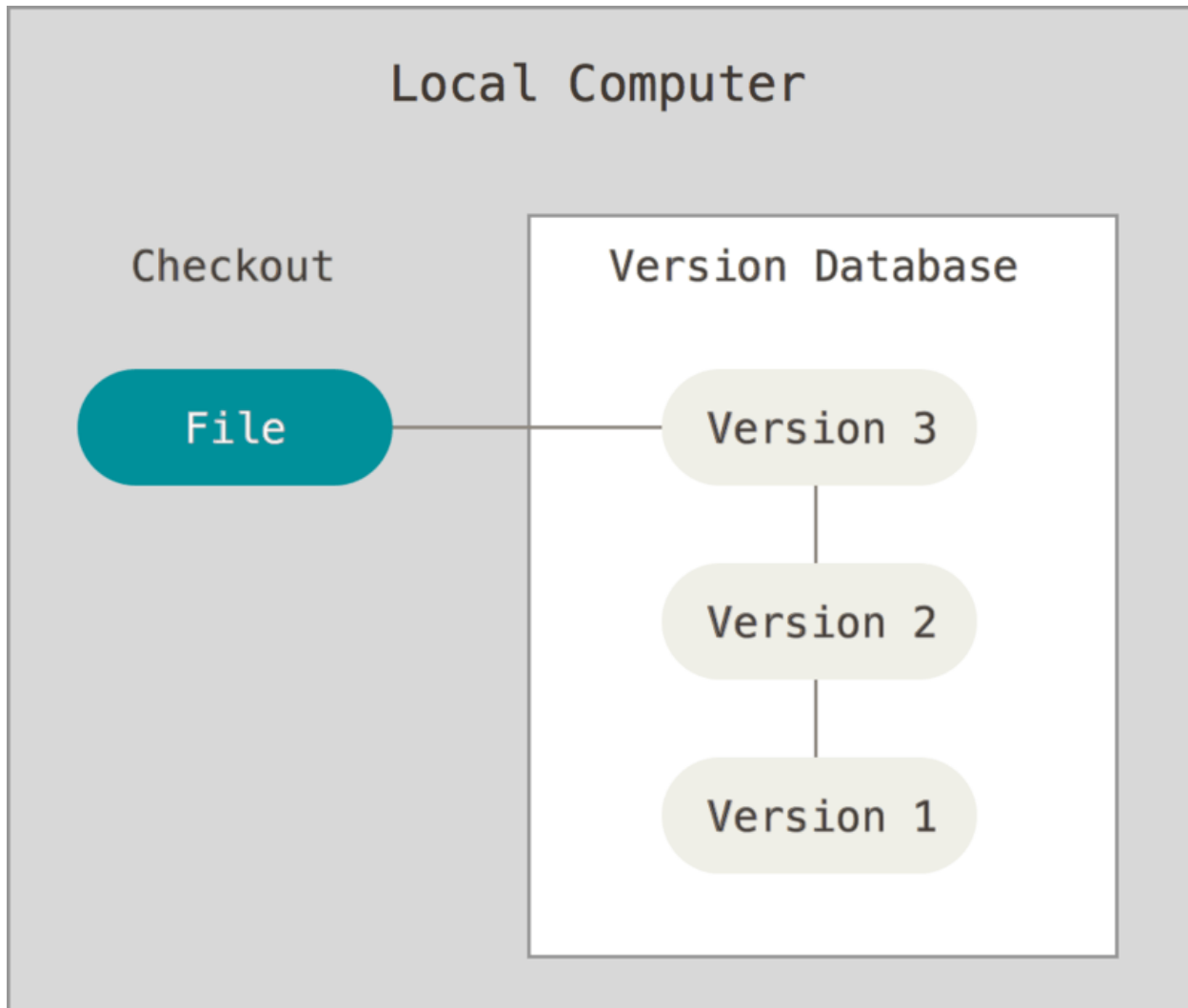


Figure (4.9) Version control

Chapter 6

Testing and Evaluation

6.1. Use Case Testing

4. Use Case Name	Login	
Use case Description	A user login to System to access the functionality of the system.	
Actors	Student, Alumni, Admin	
Pre-Condition	System must be connected to the network.	
Post –Condition	After a successful login a User Online Status will show to User	
Main Scenarios	Serial No	Steps
Actors/Users	1	Enter username Enter Password
	2	Validate Username and Password
	3	Allow access to System
Extensions	1a	Invalid Username System shows an error message
	2b	Invalid Password System shows an error message
	3c	Invalid Password for 4 times Application closed

6.1. Equivalence partitioning

We divided the input data of a software unit into parts of equivalence data from which test cases can be derived.

Test cases are considered to cover each part at least once.

Example, Medical university data, Engineering University data. We divide these into the parts according to their Data filed .

6.2. Boundary value analysis

Boundary testing is a system of testing among extreme ends between dividers of the input values.

- So these extreme ends like Start- End, Lower- Upper, Maximum-Minimum, Just Inside- Just Outside values are called boundary values and the testing is called "boundary testing".
- The basic idea in boundary value testing is to select input variable values at their.

6.3. Data flow testing

Data flow testing uses the control flow graph to explore the unreasonable things that can happen to data (data flow differences).

Data flow differences are noticed based on the associations among values and variables.

∅ Variables are used without initialized.

∅ Initialized variables are not used once.

6.4. Unit testing

Unit testing is a fragment of the SDP (software development process). Unit testing contains individually testing unit of code independently to make sure that it mechanism on its own, independent of the other units.

Unit testing is basically a set of path, test done to examine the some different trails through the components.

It's a action used to confirm that discrete units of source code remains working properly.

Sr #	Admin Use Case	Working
1	Home Link	Yes
2	Job Link	Yes
3	Login link	Yes
4	Register Link	Yes
5	Search bar	Yes
6	Log in button	Yes
7	Register button	Yes

8	Go to Up button	Yes
9	Contact Link	Yes
10	About Link	Yes
11	Slider Link	Yes
12	Main Page Slider	Yes
13	Social Links	Yes
14	News Link	Yes
15	Choose University links	Yes
16	Department Links	Yes
17	Scholarship link	Yes
18	Footer	Yes
19	Admin Logout link	Yes
20	Add Degree button	Yes
21	Add Degree level button	Yes
22	Add courses	Yes
23	Add University Courses	Yes
24	Add City	Yes
25	View University button	Yes
26	View Degree level button	Yes
27	View courses	Yes
28	View Department	Yes
29	View Job	Yes
31	View City	Yes
32	View Users	Yes
33	Admin navigation bar	Yes

6.5. Integration testing

Integration testing is a level of software testing where individual units are combined and tested as a group. The purpose of this level of testing is to expose faults in the interaction between integrated units.

Integration testing is done to test the modules/components when integrated to verify that they work as expected

i.e. to test the modules which are working fine individually does not have issues when integrated

When talking in terms of testing large application using black box testing technique, involves the combination of many modules which are tightly coupled with each other.

We can apply the Integration testing technique concepts for testing these types of scenarios.

6.6. Performance testing

Performance testing is a procedure of responsible the speed or efficiency of a computer network software program or device. This process can involve quantitative tests done in a lab, such as measuring the responsive or the number of MIPS (millions of instructions per second) at which a system functions. Qualitative attributes such as reliability, scalability and interoperability may also be evaluated. Performance testing is often done in conjunction with stress testing.

Sr #	Function Name	Performance
1	Application Loading	High
2	Database Connectivity	High
3	Store Data in Database	High
4	Retrieving data from database	High

6.7. Stress Testing

Stress testing is the procedure of defining the capability of a computer, network program to preserve a certain level of efficiency under harsh conditions. The process can include quantitative tests done in a lab, such as measuring the frequency of errors or system crashes.

Examples of Stress Testing:

Stress testing is a type of testing that is so tough, it is expected to push the program to failure. For example, we might flood a web application with data, connections, and so on until it finally crashes. Buffer overflows are classic examples of Stress test results.

Chapter 7

Summary, Conclusion and Future Enhancements

Chapter 7: Summary, Conclusion & Future Enhancements

7.1. Project Summary

This app works for all persons who are confused between the universities they wish to go. This app will let you discover the best university in any specific filtered city having ranks based on their locations and university services, Also a list of top universities in Pakistan and their eligibility criteria and admission details also available in this app.

It has tools where we can feed the filter conditions. On the basis of countless conditions provided, it helps to filter out and choose the best universities that suit us. University finder is a Static Android App /website i.e. it has the university data pre-defined and there won't be dynamic data available on run time.

Not only this, this app will also support you to select the universities as per your choice and also contact details of the related university administration staff will also get offered to you through this university selector app.

7.2. Achievements and Improvements

Achievements

We help those students who complete their studies and searching for job. Our website is a platform which help them to achieve their goals. We provide jobs opportunities according to their qualification in different depts. Our job portal updated on the daily basis and weekly basis. Student just need to connected our website. It will be very helpful for the job seekers.

Improvements

We add the alumni portal in our website. Alumni portal provide the jobs to the job seekers. Alumni portal provide the job in different depts. Those superior university students who passed out and working in top level organizations at different designation for the publicity of the superior university. It will be prove better inspirations for the students. And especially for the superior students who fed up from superior university.

7.3. Critical Review

Our Database is most critical part of our website. Because our database consist the important information if our database lost then it's a big disaster for us so we keep the backup to our database and implement security for safety from data loss.

7.4. Lessons Learnt

We develop the website with good interface and create multiple web pages with validation

We use OOP concept and technique of Data access.

We develop different types of web pages full validation and data store and update in a proper way.

We learnt .NET C sharp

We learnt in database (forign key , primary key ,tables & relations, store procedure of update, delete, Add , Search, Diagrams).

7.5. Future Enhancements/Recommendations

In future we update our website according to requirements and new trend and make it much attractive and user friendly and also update the website according to the user valuable recommendations.

Appendices

Appendix [B]: Glossary

OFFLINE USER

A user that has been added to the “Online university finder” server but does not have a copy of the application. These users can contact through email and/or SMS. An offline user may become an “Online University Finder” user by downloading the application and claiming their account.

Logout User

If a user logout from app they will again login app for further.

Admin

Admin can view update search delete record and upload data in a database.

References

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