Software Requirements Specification

For

Registration and Student Card Generation Management System

Prepared by

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Wednesday, April 21, 2021

"Table of Contents"

Revision History

Name	Date	Reason For Changes	Version

1. "Introduction"

This Project reviews the relevant research conducted on online student enrollment used by various universities. Includes essentials for online registration such as online registration program, online registration course, and others.

1.1. Purpose

The project provides services such as online enrollment and student profile creation thereby minimizing paperwork and the process of recording a record at an educational institution. Online Test / Quiz Module for the first test, give the test, calculate the results, save the test results, manage the question banks.

The Student Information System will keep all student details including their background information, qualifications, personal details and all information related to their progress.

1.2. Document Conventions

Following International standards for Document Conventions : -

- **Copyright being strickly followed through out the document**
- **Include the conventions as per our project application.**
- **Including time period, budget and all necessary requirements.**
- **Deeply analysis on Client requirements.**

1.3. Intended Audience and Reading Suggestions

We can't specify the target audience unless untill we're complete with the final user acceptance test. In which the final product project takes a proper shape.

- **A student, instructor, faculty members and registration mangement involve through out to access of the generation management system.**
- **There's no restriction on the target audeience while we have different kind of end-users specific, limited and restricted.**

1.4. Product Scope

To achieve this goal it is difficult to use the system as information is scattered, it can be cluttered, and collecting relevant information can be time-consuming.

- **It can be used by educational institutions or colleges to maintain student records easily. It also provides a time-consuming process to view, add, edit and delete student marks.**
- **The online registration system will allow online submission of student applications, Student Registrations, Online quiz or test. Saved test results, change student profile.**

1.5. References

Student management system (SMS) helps in managing data, communications, and schedules.

Some of the common & popular student management system are:

- **Blackbaud Education Management Solutions**
- **Skyward Student Management System**
- **PeopleSoft Campus Solutions**
- **PowerSchool SIS**
- **Infinite Campus**

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2. "Overall Description"

This session will provide an overview of the entire program.

The program will be explained in its context to show how the system interacts with other programs and present its basic functionality and finally, program presentations will be presented.

In the Student Registration Card Production Management System, the student simplifies the online student enrollment process, supplement courses, enrollment courses, fundraising, and various other student-related activities.

2.1. Product Perspective

Previously a standard student enrollment system relied on student record-keeping documents.

- **This software was developed to the student's flexible feeding requirements and is fully independent and efficient.**
- **Online registration and student card management systems reduce wasted time.**
- **It provides a simple database and a good level of standardization that will ensure students and users receive the various set of required reports.**

2.2. Product Functions

The primary function of the Student Management System web server is essential to save the whole system information sequentially into a database server.

- **The administration department will have access to the whole system environment and that can be modified as per their needs.**
- **It will allow access only to authorized users with specific roles for instance.**
- **Administrator for maintaining the purpose**
- **Institute for registration of the students**
- **Students for filling in the details**

❖ **Following are the system functions :**

Student role :

- **On the registration form, the student should enter all their details such as their name, number, email, contact number, address, and other basic details.**
- **And to add a course to remove the course which course to enroll after the system allows the student to change information and provide the function to change the password for the student.**

Administration role :

- **The system administrator must be able to deactivate and reactivate the student account login.**

2.3. User Classes and Characteristics

User profiles have been identified as having contact with the Student Management System so that anyone can register and log in to the program and use the necessary resources.

- **Students can easily fill out an online registration form and submit it. The supervisor will assess the relevant student information according to the admission process.**

- **Once a student has been successfully enrolled he or she may use the college, school, or university facilities according to the limits provided by the administrator.**

2.4. Operating Environment

The project could run on any operating system having IDE software for Java.

- **The code is intergrated on Net beans & IntelliJ IDEA.**
- **We could add more functionalities to made as a web-based portal for online student registration and student card generation.**
- **Our main backend core will be based on Java Using Object-Oriented Programming (OOP).**

2.5. Design and Implementation Constraints

Design and implementation Constraints is the stage in which we made the prototype just to configure out how our project is going to take a shape into a proper product.

- **In this phase, we considered different design Construction and Implementation aspects using chart, diagrams and define different penalties throughout them.**
- **There're different kinds of designs and Implementations using Flowchart, Class diagrams, Use Cases, UML, and QFTs.**

2.6. User Documentation

Any user of a software program is a target audience of user scripts generated by the software program.

- **A wide range of short text types for example guides, frequently asked questions in Portable Document Format (PDF) format.**
- **It should explain the use of the software as well.**

2.7. Assumptions and Dependencies

Major Assumptions and dependencies of our "Registration and Student Card Generation Management System" are given below: -

- **Brush up the abilities.**
- **Success is a smaller amount the belief.**
- **Motion of E-learning system.**

- **What's Subject to require the Registered.**
- **Needs of essential data.**
- **Needs of systematic data. Fusion of innovation and vision.**

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3. "External Interface Requirements"

Externel Factoes inolves though to design & development a system

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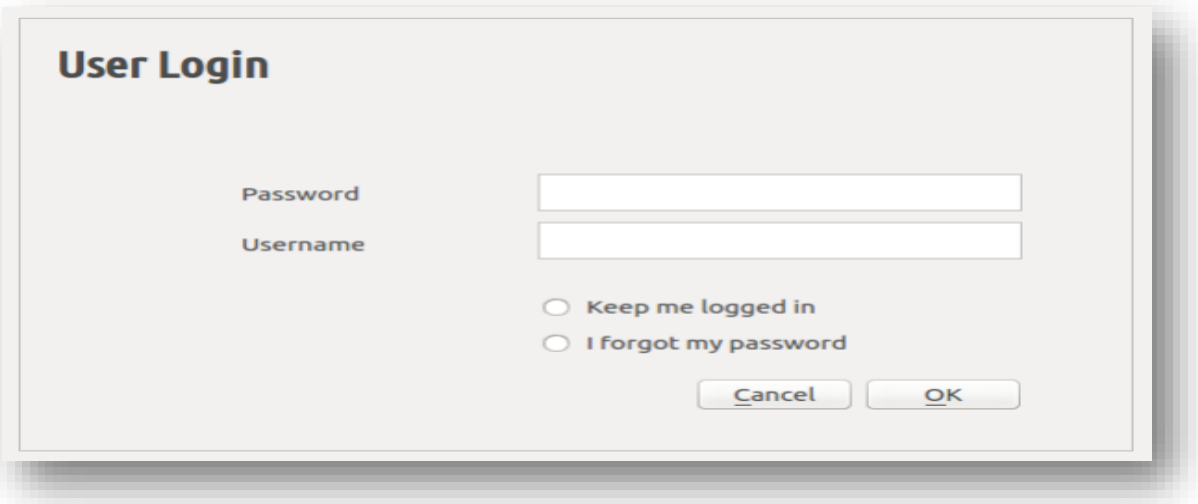
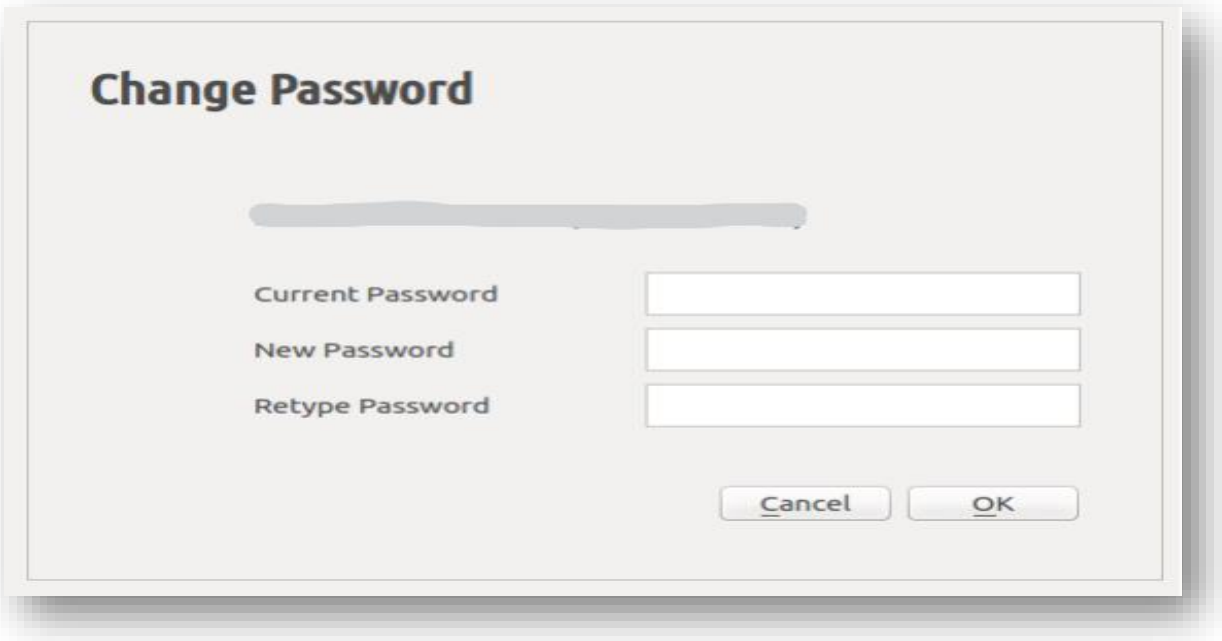
3.1. User Interfaces

User Interface design of Interface are given below moving forward to the Algothrim's

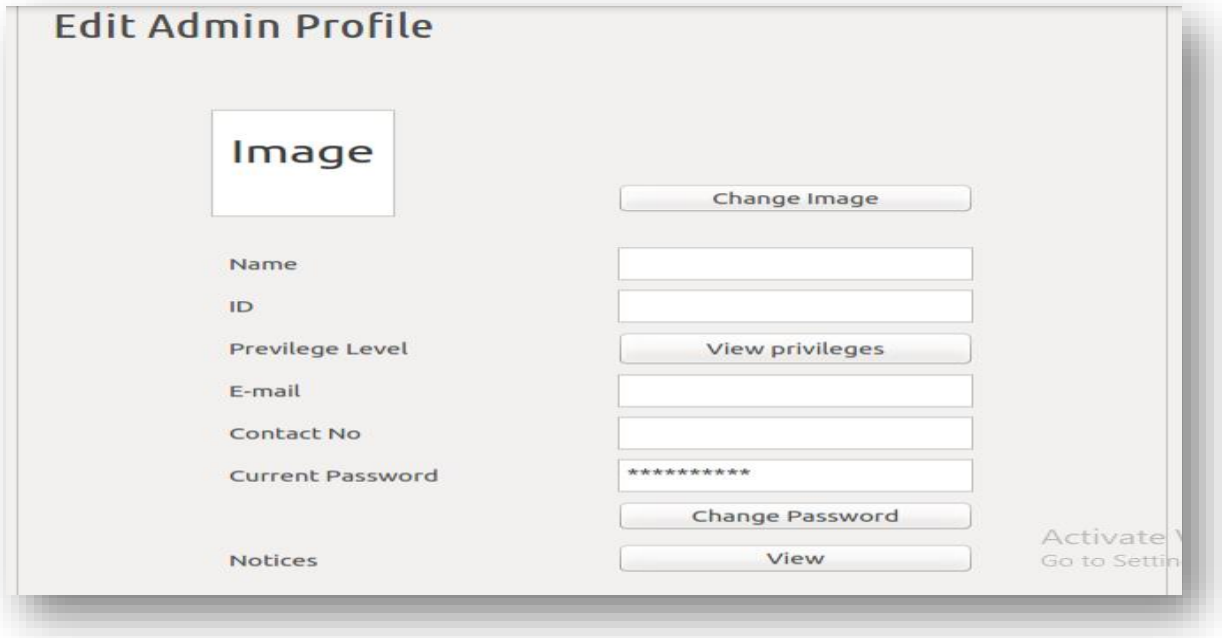
Interface No 1: Login To The System



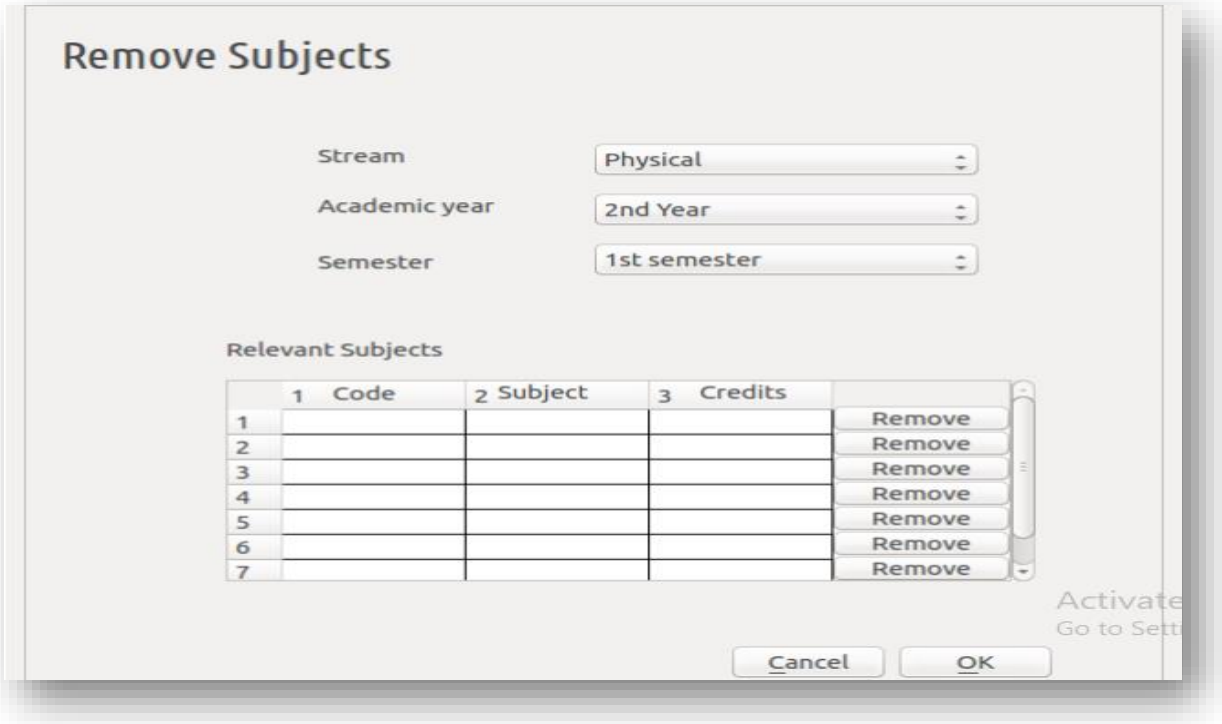
Interface No 2: Change Password



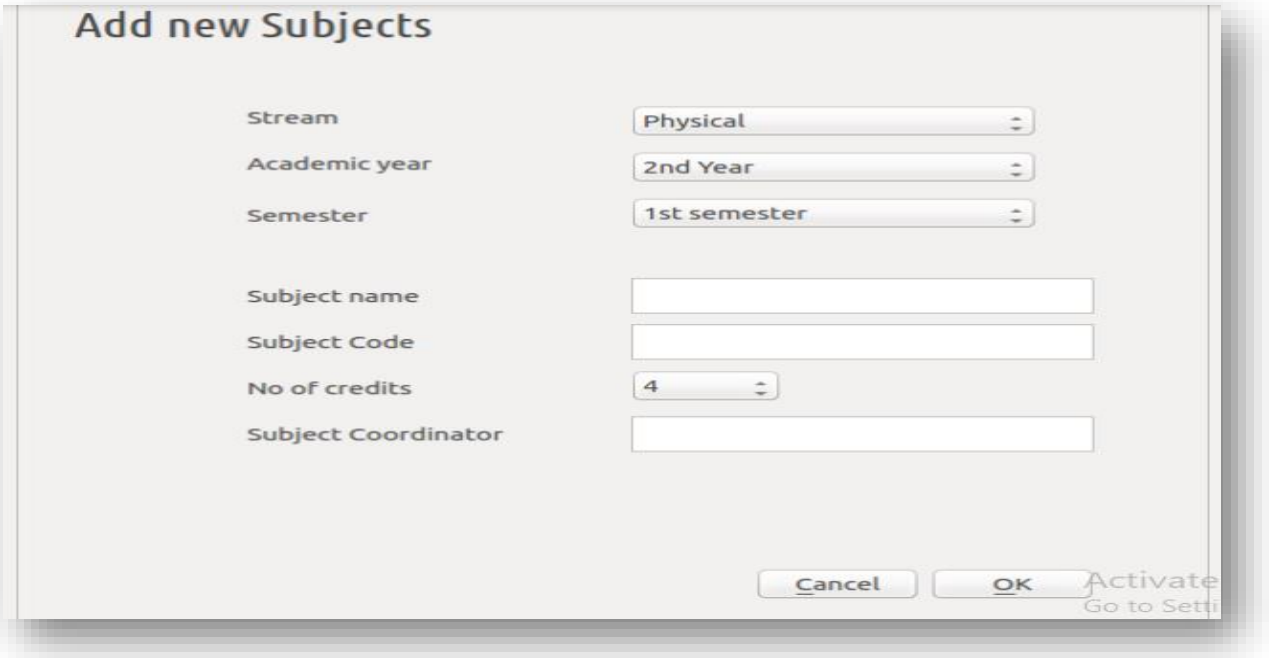
Interface No 3: Edit Admin Profile



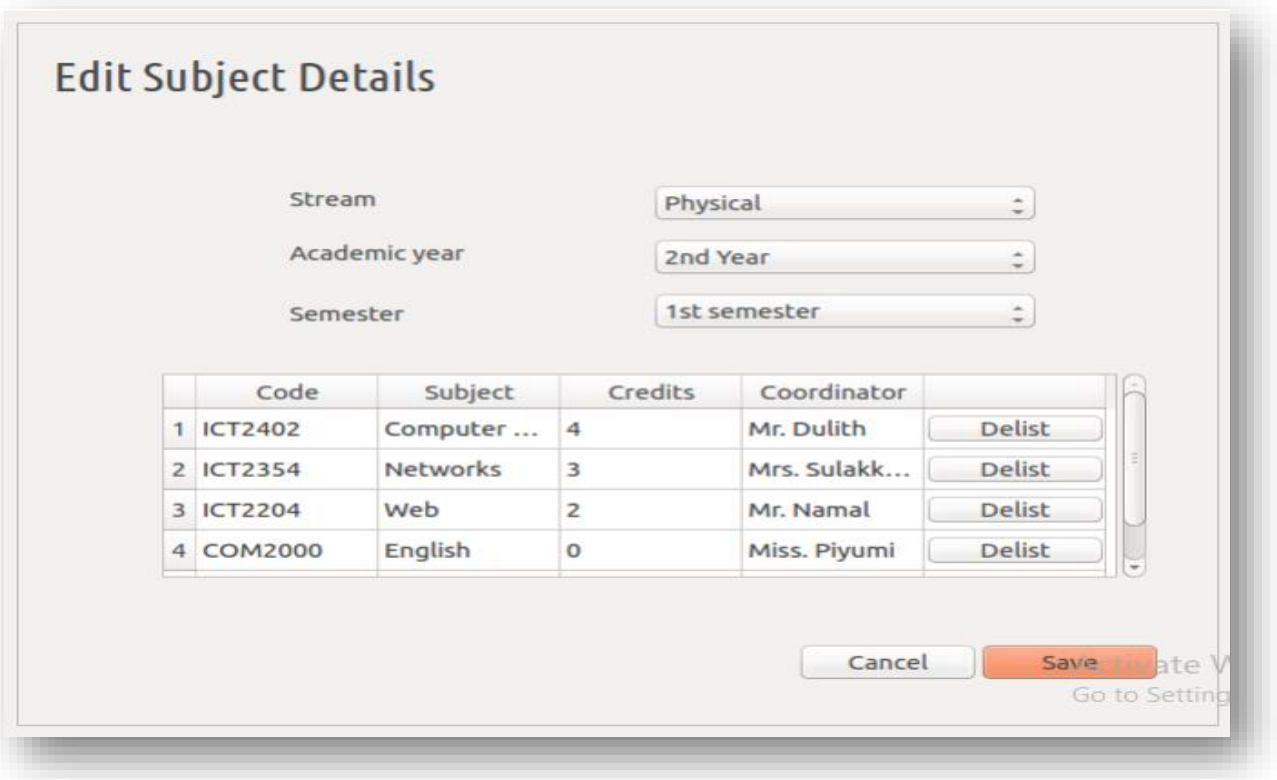
Interface No 4: Remove Subjects



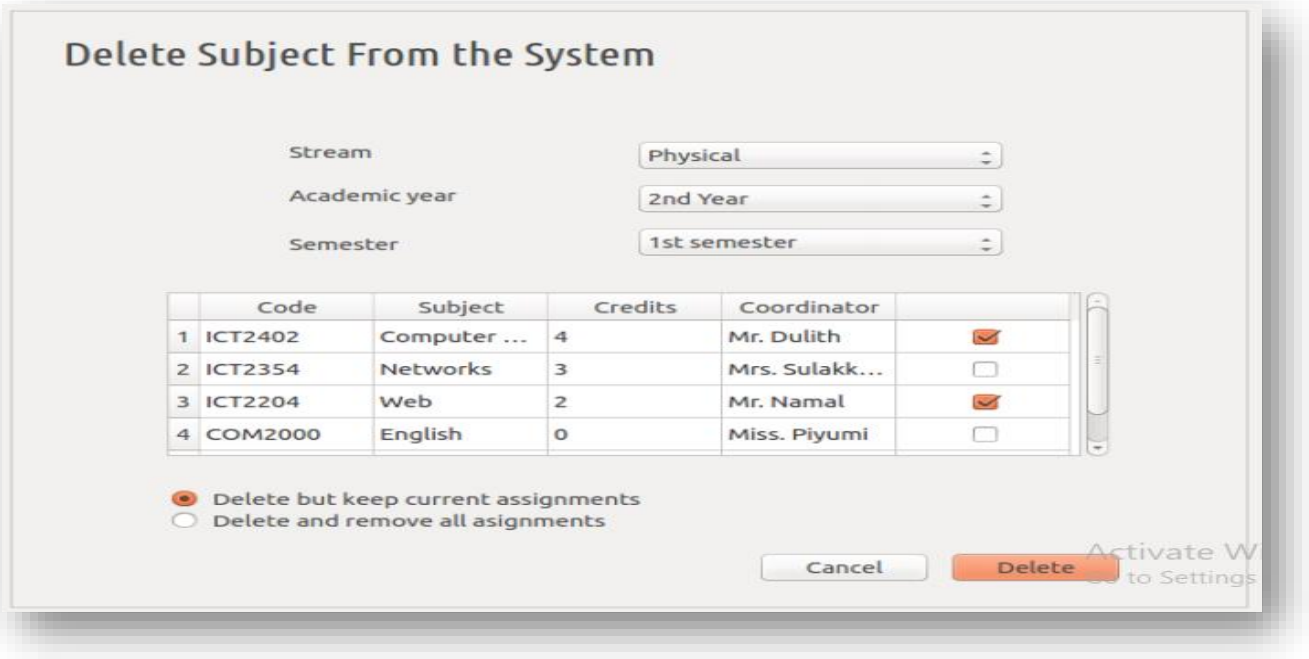
Interface No 5: Create New Subjects



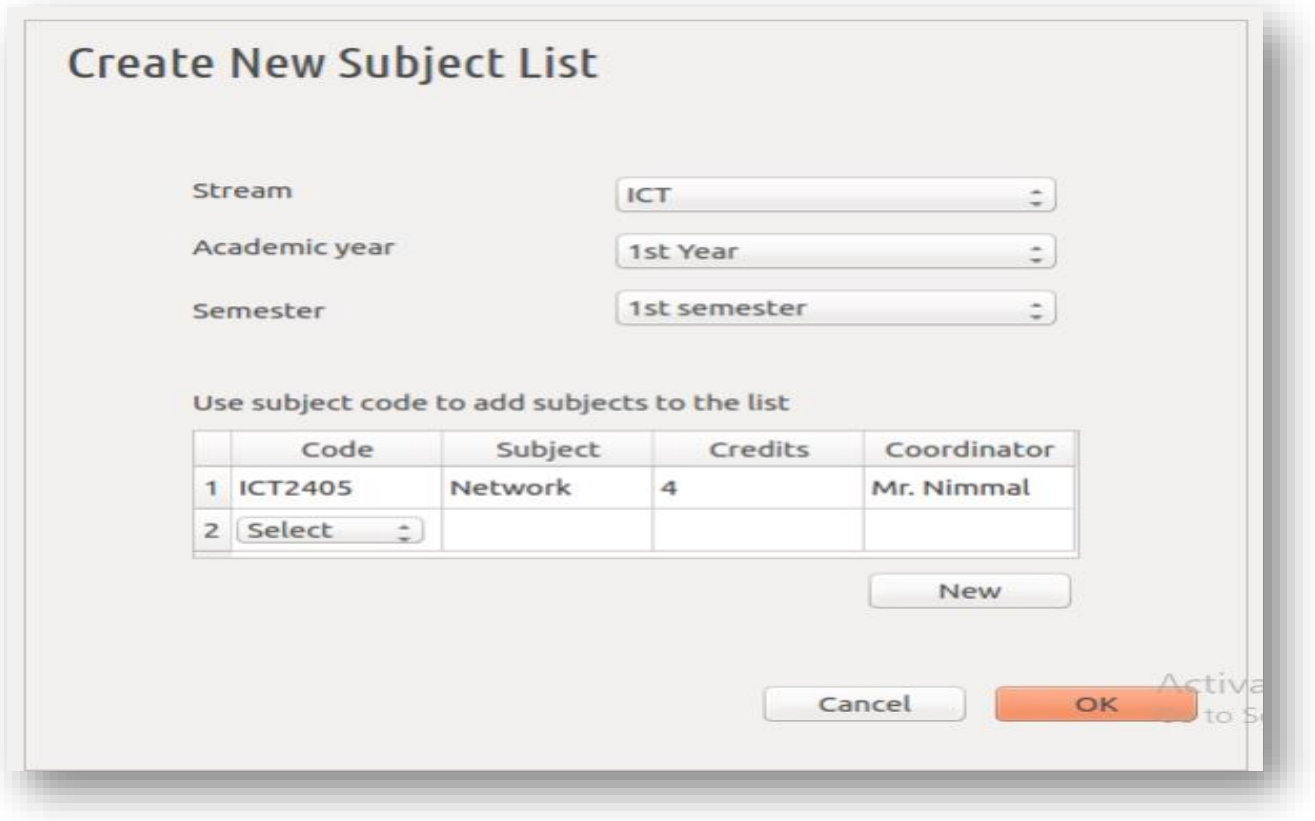
INTERFACE NO 6: EDIT EXISTING SUBJECTS



Interface No 7: Delete Subjects



Interface No 8: Create New Subject List



Algorithum Design:

Login :

1. Get Username and Password.

2. If user name is equal to the entered Username & the password is equal to the entered Password.

3. Then login successful.

4. Else login failed.

5. End If.

Student-Edit Profile :

1. Student login to account.

2. Select student personal details option.

Student-Views Previous Semester Information :

1. Student login account.

2. Select exam details option.

3. Then view previous semester result preview.

4. Exit.

Student Select & Remove Object :

1. Student login account.

2. Select student subject option.

3. Select academic year and the semester.

4. Then user selects subject from the appeared list as preferred.

3.2. Hardware Interfaces

Hardware Interface includes

- **Windows.**
- **A browser which supports Java**

Windows

Windows may be a graphical software system developed by Microsoft. It permits users to look at and store files, run the software system, play games, watch videos, and provides how to attach to the web.

It absolutely was discharged for each home computing and skilled works. Microsoft introduced the primary version as 1.0.

JAVA:

Java is associate degree object-oriented artificial language that produces package for multiple platforms.

Once a computer user writes a Java application, the compiled code (known as byte code) runs on most in operation systems (OS), as well as Windows, UNIX system and Macintosh OS.

3.3. Software Interfaces

It's an IDE-based product that also involves web therefore it can be used in any environment that allows access to the Web. The framework should need to be self-supporting since the student would be using to register for courses and to add details.

All stakeholders and students can have access to the framework.

- **Every student must have secure and private access to their data. The registrar can have access to every part of the system. All these accesses require identification through ID and password.**
- **The framework should have to be easily understandable design in order for students and users to use it. It should provide the necessary information when the user commits possible errors.**
- **It should indicate the several possibilities that the user has to go on in using the system.**
- **The operating system which is Windows 10 is used as the operating system because it is stable and it also supports more features and it is more user friendly**
- **JAVA language using object-oriented programming (OOP)**
- **Net beans IDE 12.3**
- **Language java (JDK)**
- **Windows 10**

3.4. Communications Interfaces

The only software a client or a user or we can say student need is to access this framework is a web browser and obviously internet connection.

- **Our Student Management System needs some specific set of devices and servers.**
- **The database server is used to store and manage data. Personal computer, notebook, smartphone, etc…is used to access the website. Modem, router, switch, Wi-Fi network or cable network, also need an Internet Service Provider are needed to have the internet connectivity.**
- **Any window-based operating system can have access to it such as Mozilla, Firefox, google chrome, etc… web browser can have access to it.**

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4. "System Features"

System Features are the "tools" you use within the system to complete a set of tasks or actions. Working out how those features work to give you the result you want.

4.1. System Feature (Functional)

The functional features are been divided into different sub-categories included Description, Response, Funcctional based.

4.1.1 Description and Priority

Here are some of the main features :

Maintains a unique id for all the registered students
Upload and store photos of registered students.
Saved contact details to send immediate alerts to parents.
Academic year records.

The student accesses the system and views the courses presently offered for him to register. He selects the courses and registers for them.

The system produced a unique ID for all the registered students.

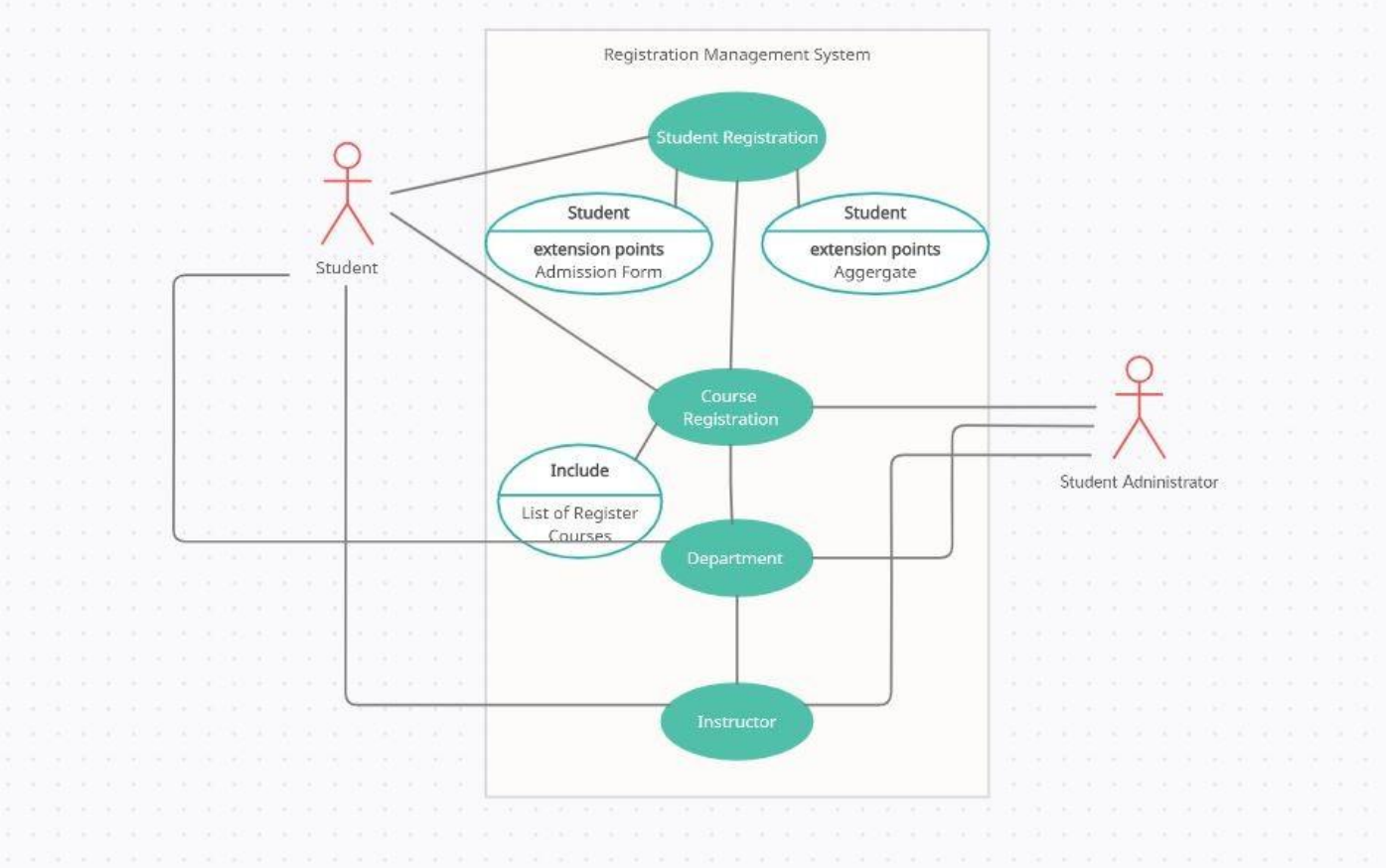
The Registered student uploads their photos and the system stores them in the memory.

The system saved contact details and maintain the academic year record.

4.1.2 Stimulus/Response Sequences

Use Case Diagram

"Student Registration Management Systen".



4.1.3 Functional Requirements

Functional features of our "Req-1:" of project are given below: -

Vendor software management provides

- **Storage of student information, including marks and visits**
- **Technical management**
- **Report production**
- **Tool-assisted editing**
- **Student and parent access**
- **Registration or subscription management**
- **Medical and health management**

- **Legal help**

Functional features of our "Req-1I:" of project are given below:

The various use cases will be

- **Add/Update/Delete Student Information**
- **Add/Update/Delete Subject Information**
- **Add/Update/Delete Student Subject's choice Information**
- **Generate Mark Sheet**
- **Create/Delete User accounts**

4.2. System Feature (Fully Dressed Use Cases)

Here're

"Full Dress Use Cases" to define the

System Feature

Student ID	SP20-BSE-000
Title:	**Student Course Registration**
Description:	**Student accesses the system and views the courses presently offered for him to register. Then he selects the courses and registers for them.**
Primary Actor:	**Student**
Pre-condition:	**Student Log into the system.**
Post-condition:	**Student is Registered for the course.**
Main Success Scenario:	**Student Select "New Registration"** **Than;** **Courses "From Menu"** 1. **System should display list of courses.** 2. **Student select on or more courses to register.** 3. **Student Press the "Submit" Button.** 4. **Student Receive a confirmation message on Screen.**
Extensions:	1. **System display Error messages.** 2. **System display Eligibility Criteria.**

	3. **System displays message speech none of the courses may be registered, in conjunction with a reason for every failure.**

EXPLANATION :

Here what these cases are for :

Title: Enter the goal of the utilization case – ideally as a brief, active phrase.

Description: Describe the goal and context of this use case. This is often sometimes a distended version of what you entered within the "Title" field.

Primary Actor: A person or a software/hardware system that interacts along with your system to attain the goal of this use case.

Pre-conditions: Describe the state the system is in before the primary event during this use case.

Post-condition: Describe the state the system is in in any case the events during this use case have taken place.

Main Success Scenario: As you'll be able to see, this field contains the instance from our previous post – i.e. the flow of events from pre-conditions to post-conditions, once nothing goes wrong.

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5. "Non-Functional Requirements"

Commonly defined Non Functional Requirement

in the table below :

❖ **In this system, the authentication of the user is a crucial issue.**

❖ **During this system, user authentication are going to be done by login by user name and Arcanum and classified by user sort.**
❖ **Users can get access to the system as permissions square measure classified for that style of user.**

The system contains a consistent interface in order that the system is simple to use and within the interface of our system buttons and forms square measure won't to enter knowledge associated with a selected module.

- **Performance**
- **Safety**
- **Security**
- **Software Quality & Maintainability**
- **Design & Implementation Constraints**
- **Business Rules**

5.1. Performance Requirements

There're numbers of internet & externel factors that can impact the Performance though out the project and later on as well. Performance requirements depends upon the Operating System, IDE and Hardware factors as well.

5.2. Safety Requirements

The Safety Requirements assists in risk assessment, cost management, and quality control. software and data from the vendor; measuring human performance, processes and frameworks that support software delivery, and assist in acquisition and governance danger to our project.

5.3. Security Requirements

Security is a statement of the required security performance that ensures that one of the many software security sites is satisfied. quality or safety condition:

In summary, security requirements should cover areas such as:

Password verification and management
Approval authorization and management
Audit and analysis
Network and data security
Code integrity and verification testing
Cryptography and key management
Data verification and cleanliness
Third-party analysis

5.4. Software Quality Attributes

Software quality attribute features that simplify software product performance measurement by Software Testing experts

Availability: This attribute indicates whether the app will perform the tasks assigned to it
Interoperability: Software-run programs may need to communicate and work collaboratively to resolve specific tasks
Performance: Actual software perform an operation without having any kind of errors or hang.
Testability: Software should acquire some basic user acceptance test
Security: There should be a protective layer for each of the user (Student, Teacher or Faculty member)
Usability: The actual usability of the software while it's in the working process
Functionality: Actual Feature ion which the management system performs different operations
Maintainability: The end System should require an additional layer of maintainability as per the usage

5.5. Business Rules

The cost of student management systems varies greatly depending on the size and needs of the university, college or school.

- **Additionally, student management system vendors often disclose price information.**
- **Talk to a dealer or customers for a detailed description of your needs.**
- **Setup up duration to deliver the end product to the owner.**
- **Eventually having additional maintainability factors renders the project which has proper maintenance guidelines.**

6. "Other Requirements"

Futher requirements could be measure depending on the depth of project. A managment system usully improve as the time goes on. There're some Glossary, Analysis Models and To Be Determined List measures given below.

Appendix A: Glossary

The glossary contains practical definitions of words and classes in the Course Registration System.

- **This glossary will be extended throughout the life of the project.**
- **Any descriptions not included in this document may be included in the Rational Rose Model.**

Different subject selection

A student may choose to enroll in one or more different courses, provided one or more basic options are not available.

Payment System

Part of the university's financial plan used to process payment information.

Required

The university needs additional courses where a student has passed one or more courses in order to be able to enroll in a particular course. These are known as prerequisites.

Choosing basic subjects

The reader should prioritize the selected selection. The system will want to implement the main options first.

Remote access

Any system access obtained by remote dialing or internet connection.

University art objects

A common term used to collect business associations associated with the University.

Appendix B: Analysis Models

Analysis Model technical representation of the system. It serves as the link between system description and construction model.

- **In the Analytical Models, the knowledge, functionality, and functions of the system are defined and interpreted in the structure of the structure, component, and structure of the physical interface in the construction model.**

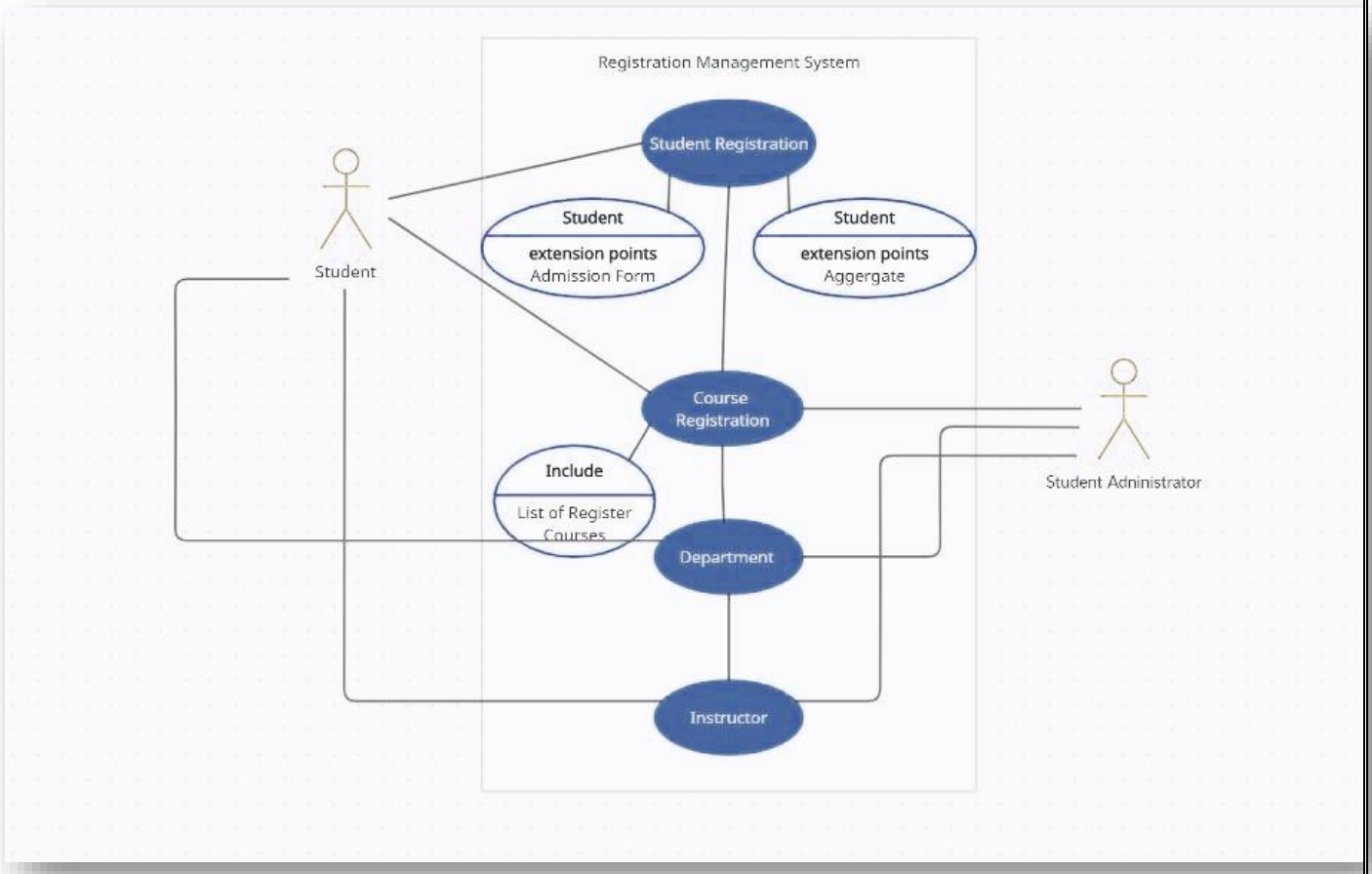
Appendix C: To Be Determined List

In the Determined List reference regarding the project so they track closure to understanding.

- **The Determine list involves the student, instructors, faculty member, and other staff.**
- **We're dealing with a Student Registration Management System.**
- **It involves each & every member having their own involvement.**

Use Cases / Full Dressed Use Cases

Use Cases



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○ Full Dressed Use Cases

Student ID	SP20-BSE-000
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Extensions:	**4. System display Error messages.** **5. System display Eligibility Criteria.** **6. System displays message speech none of the courses may be registered, in conjunction with a reason for every failure.**

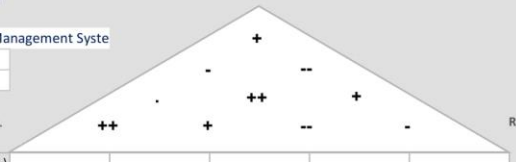
Quality Function Deployment (QFD) & Activity Diagram

Quality Function Deployment (QFD)

Quality Function Deployment

Project Title: Registration and Student Card Generation Management Syste
Project Leader: Ossama Mehmood
Date: 27-Apr-21

You need only to fill the white and blue cells.



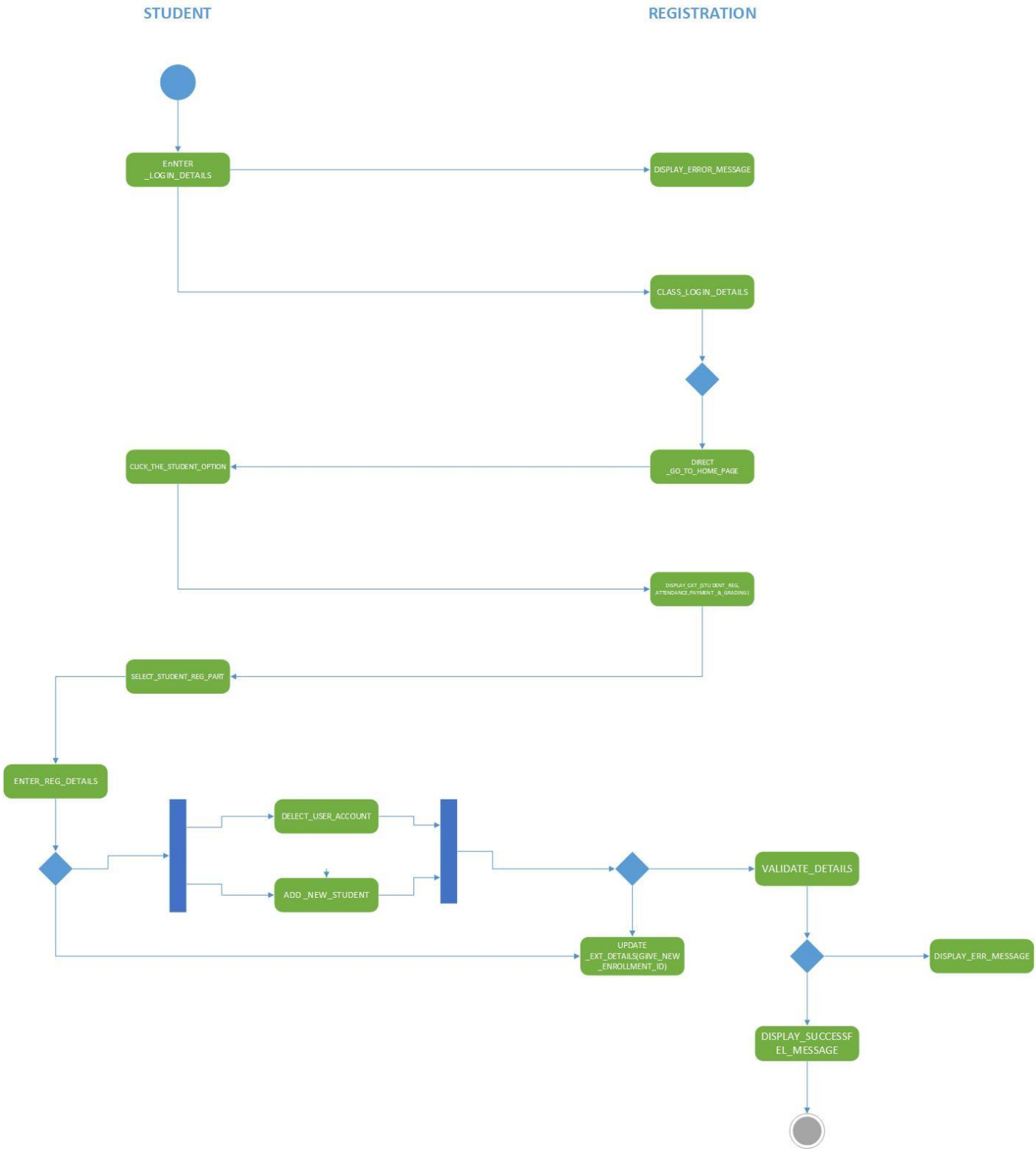
Correlation:	++	+	.	-
	Stong Positive	Positive	No correlation	Negative
Relationships:	9	3	1	
	Strong	Moderate	Weak	None

		Desired direction of improvement (↑,0,↓)									
	1: low, 5: high	**Functional Requirements (How) →**						Competitive evaluation (1: low, 5: high)			
	Customer importance rating	**Customer Requirements - (What) ↓**	Student Information	Course Information	Registration Information	Evaluation Information	User Profiles Information	Weighted Score	Satisfaction rating	Competitor rating 1	Competitor rating 2	Competitor rating 3
1	4	Offered Programs		9				36				
2	4	Education Details	9		9			72				
3	3	Eligibility Criteria	3		9			36				
4	5	Log in / Sign up	3	3	3	3	9	105				
5	2	Personal Details	9				1	20				
6	1	Address	3		3			6				
7	5	Fee Status	3		9		3	75				
8								0				
9								0				
		Technical importance score	96	51	126	15	62	350				
		Importance %	27%	15%	36%	4%	18%	100%				
		Priorities rank	**2**	**4**	**1**	**5**	**3**					
		Current performance										
		Target										
		Benchmark										
		Difficulty						1: very easy, 5: very difficult				
		Cost and time						1: low, 5: high				
		Priority to improve										

Comments/Conclusion:

The **final** conclusion based on the result indicates that the **student information** is the most important and everything relates to it. **(Strong reelation overall)**

Activity Diagram

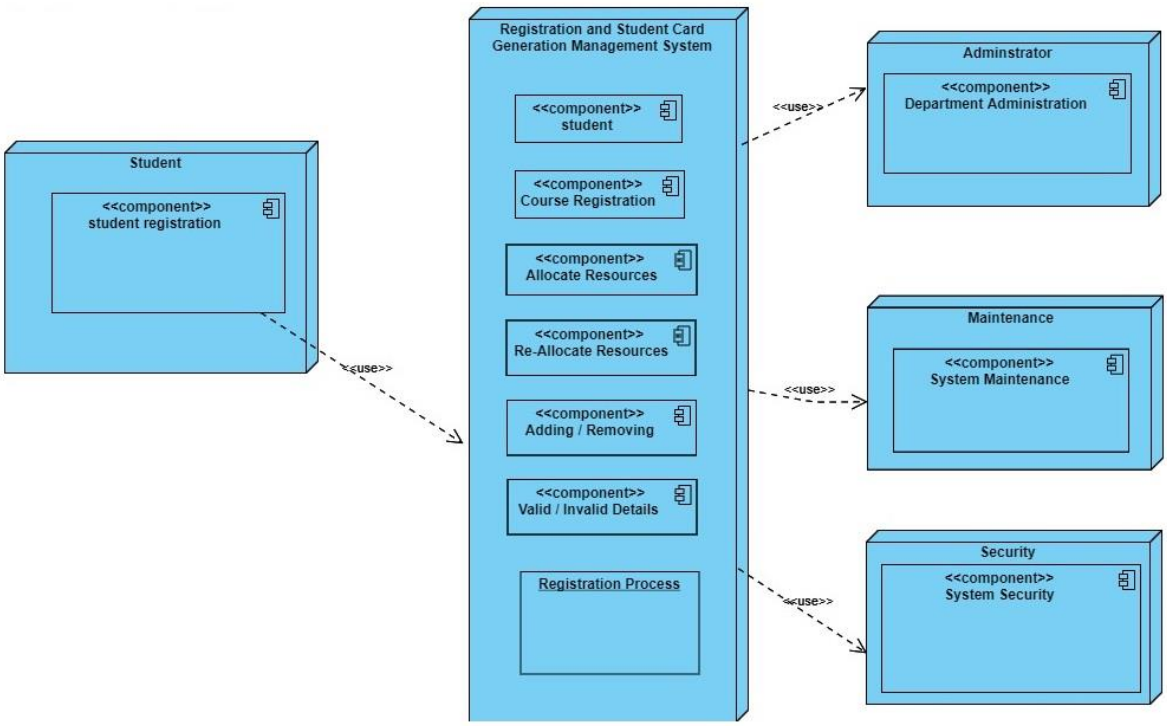


Drawn Diagram For "Registration and Student Card Generation Management System" :

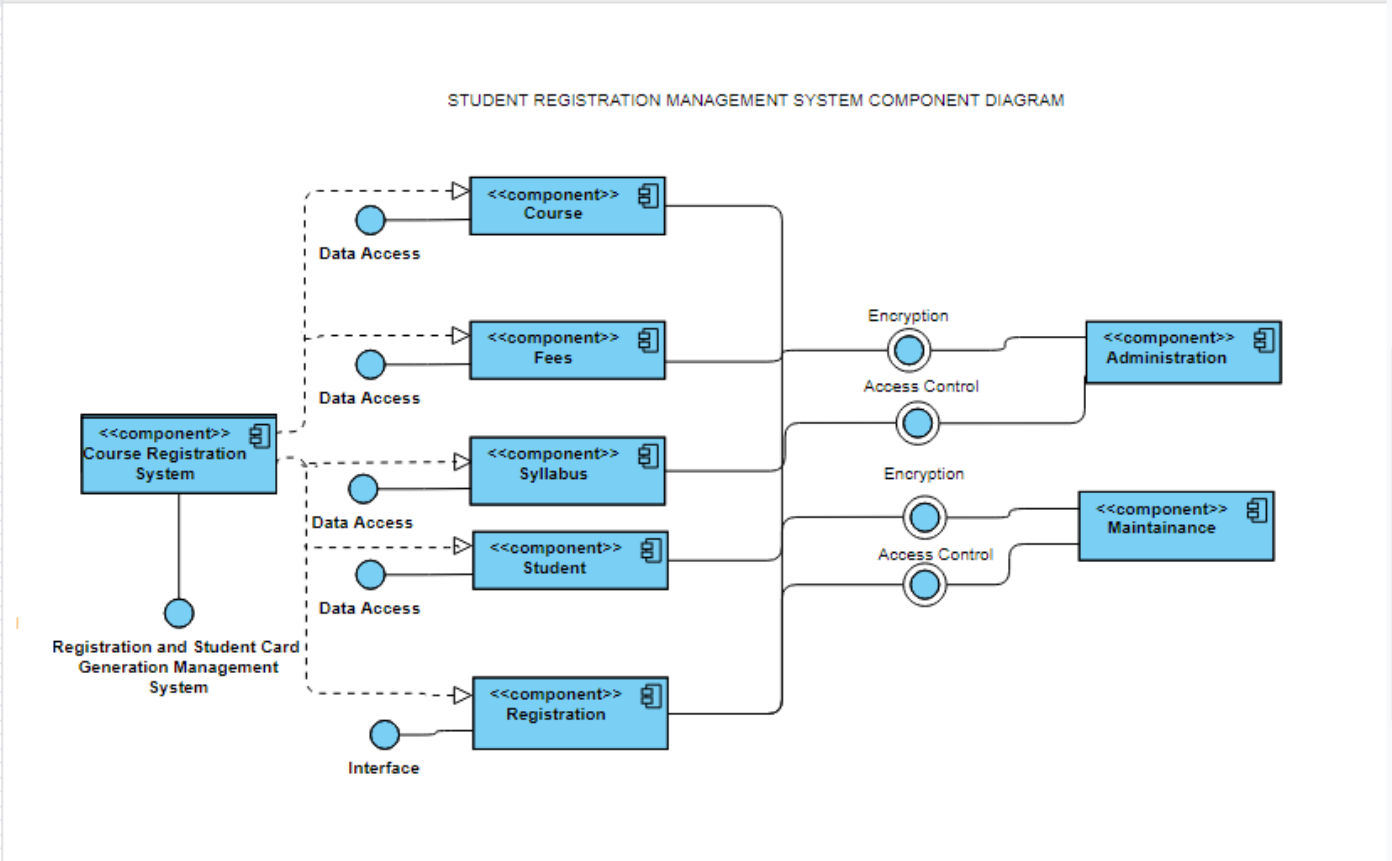
---------- **Diagrams** ----------

- **Deployment**
- **Component**
- **Sequence**
- **State**

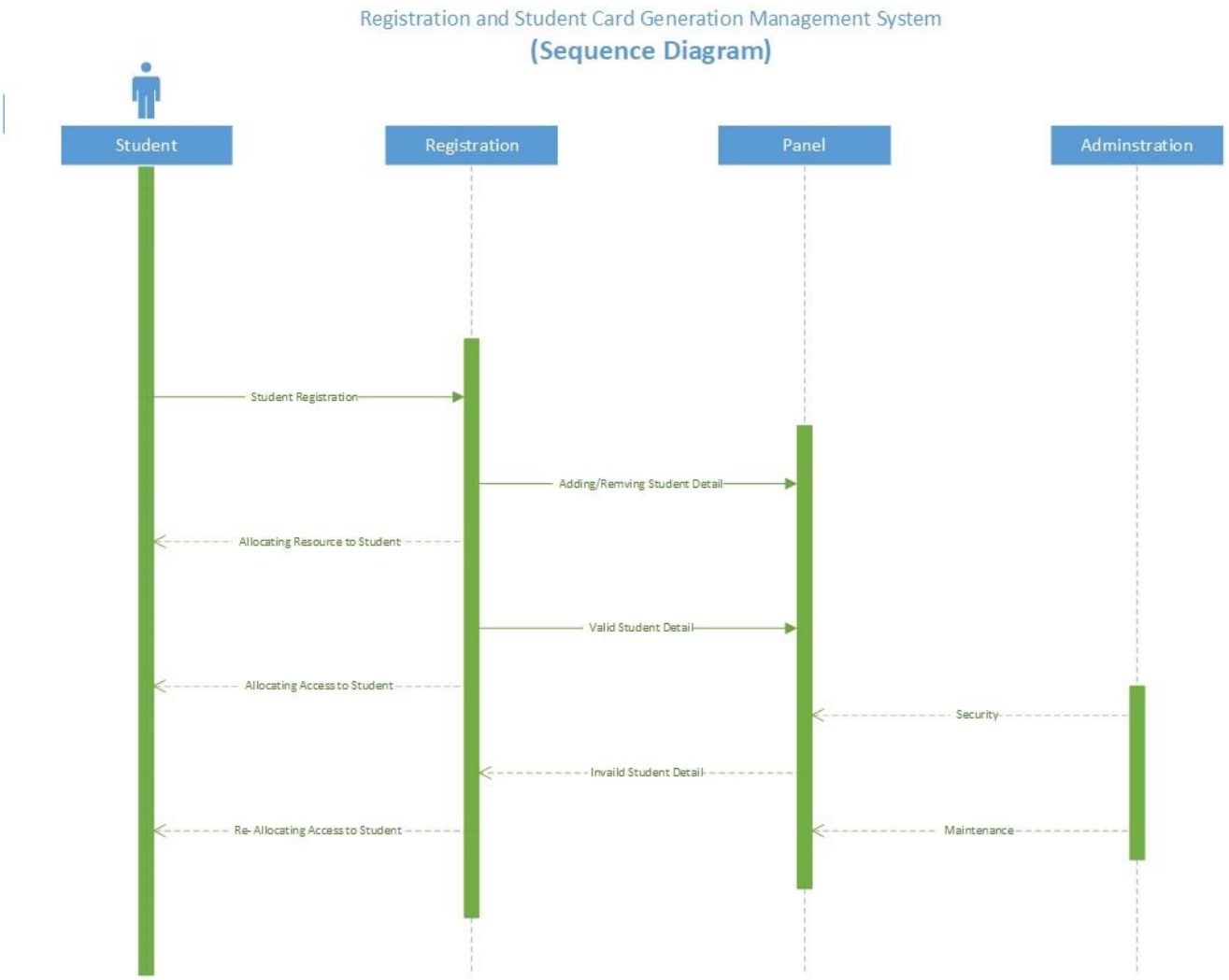
Deployment Diagram



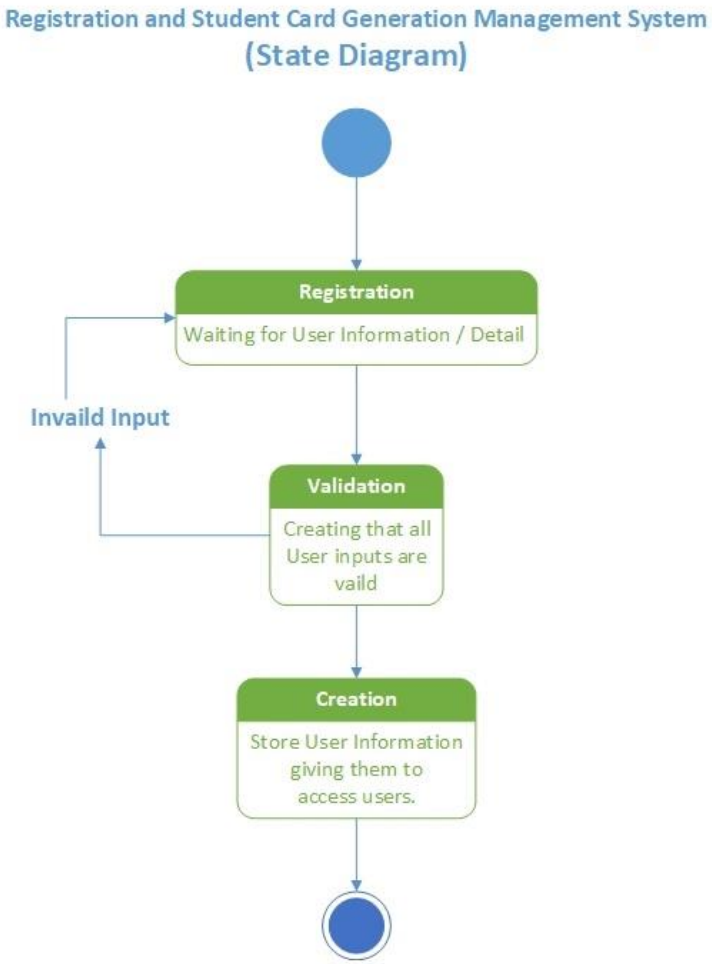
Component Diagram



Sequence Diagram



O State Diagram



“ Software Requirement System (SRS) - Completed (Jazak-Allah) ”

“ Thank You So Much, Respectful Course Lecturer,

(Ma’am) Ayesha Hussain ”

`

ITSE (CSE291)

Pleasure & Warm Regards,

Attendees / Students

From: (SP20) – BSE-3B

(Project Leader) : Ossama Mehmood (069)

(Project Team Mate's) : Hamza Altaf (048) & Sara Sultan (063)
