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**Manoj Shrestha**

# **Abstracts**

We proposed a web-based desktop application ***Result Management System*** which will be used as a platform for the interaction between the facilitators, students and admins in order to prepare the result fast and efficiently. The main objective of this project is to computerize the paperwork of the result management process. The work will be automated due to this software. This will reduce the time and effort of the colleges and data can be easily accessed by the students with their handy devices. Similarly, it helps to detect the mistakes while entering the marks data and attendances.

This system uses **JAVA** as a programming language with its framework **Swing and JDBC** and **MySQL** as a database for the system. Thus, the main purpose of this system is to reduce time and cost. This system also reduces the amount of paper and time to get the results.

**Keywords used: JAVA, Swing, JDBC, MySQL, computerize**

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# **LIST OF ABBREVIATIONS**

|  |  |
| --- | --- |
| **ABBREVIATION** | **DESCRIPTION** |
| RMS | School Management System |
| MYSQL | Structured Query Language (MySQL in database engine) |
| DFD | Data Flow Diagram |
| ERD | Entity Relationship Diagram |
| SDLC | Software Development Life Cycle |
| RDBMS | Relational Database Management System |
| JDBC | JAVA Database Connectivity |

# **CHAPTER 1 : INTRODUCTION**

## **1.1 Problem Statement**

Recently different colleges of Nepal are facing a lot of problems due to COVID. Students are not able to get the results in proper time as the facilitators cannot meet regularly with the college result section employee/staff. Marks cannot be given in time which delays the result. Similarly, extra staff are required for the result making process and result declaring process which creates a financial hit on the college economy. Also, the students who are far away on vacation have to come to colleges in the middle of vacation in order to get the results. This has a bad reflection on the educational system about not being able to apply the technology in this sector.

## **1.2 Motivation**

The importance of the result is great in today's world. The growth of an individual highly depends upon the quality of result and present college education system. And in a good college the chief objective is to stimulate the interest and curiosity in the students and provide facilities to the students, facilitators and parents to achieve the desired goal in a better and easier way. So the motivation of our project is to make tasks related to result management easy for the students, facilitators and parents.

## **1.3 Objectives**

* To manage all the information about the facilitators and students.
* To update the information easily.
* To provide the results to the students easily.
* To reduce the time for the result making process.
* To build a software for result management.
* To facilitate the attendance entry process of students by facilitators.
* To computerize the paperwork in the system and automate the work.

## **1.4 Project Scope**

In this era of technology colleges are based on paperwork. This system is the model for the user-friendly and effective management of result processing tasks. The ***Result Management System*** manages the result management process of the administration and provides a popper communication between the students, facilitators, admins and parents.

## **1.5 Limitations**

* Result info doesn’t contain the remarks of the students.
* Students and facilitators cannot create their own user id.
* Requires skill and knowledge of computers.
* It can only mark one at a time.
* Cost of this system will be expensive.
* Cannot enter the data without the internet.

## **1.4 Report Organization**

**Chapter 1:** This chapter explains about the overview, introduction,problem statement, motivations, project scopes and limitations of the system.

**Chapter 2:** This chapter covers all the history, methods, requirement specification and feasibility analysis and structured system requirements.

**Chapter 3:** Design of the result management system is explained in detail with all the necessary diagrams and brief functionality.

**Chapter 4:** Process of implementation and testing is described along with all the tools used for the development.

**Chapter 5:** Conclusion and future scope of the application are explained.

# **CHAPTER 2 : REQUIREMENT ANALYSIS**

## **2.1 Literature Review**

## **2.2 Problem Definition**

## **2.3 Requirement Analysis**

### **2.3.1 Functional Requirement (Use Case)**

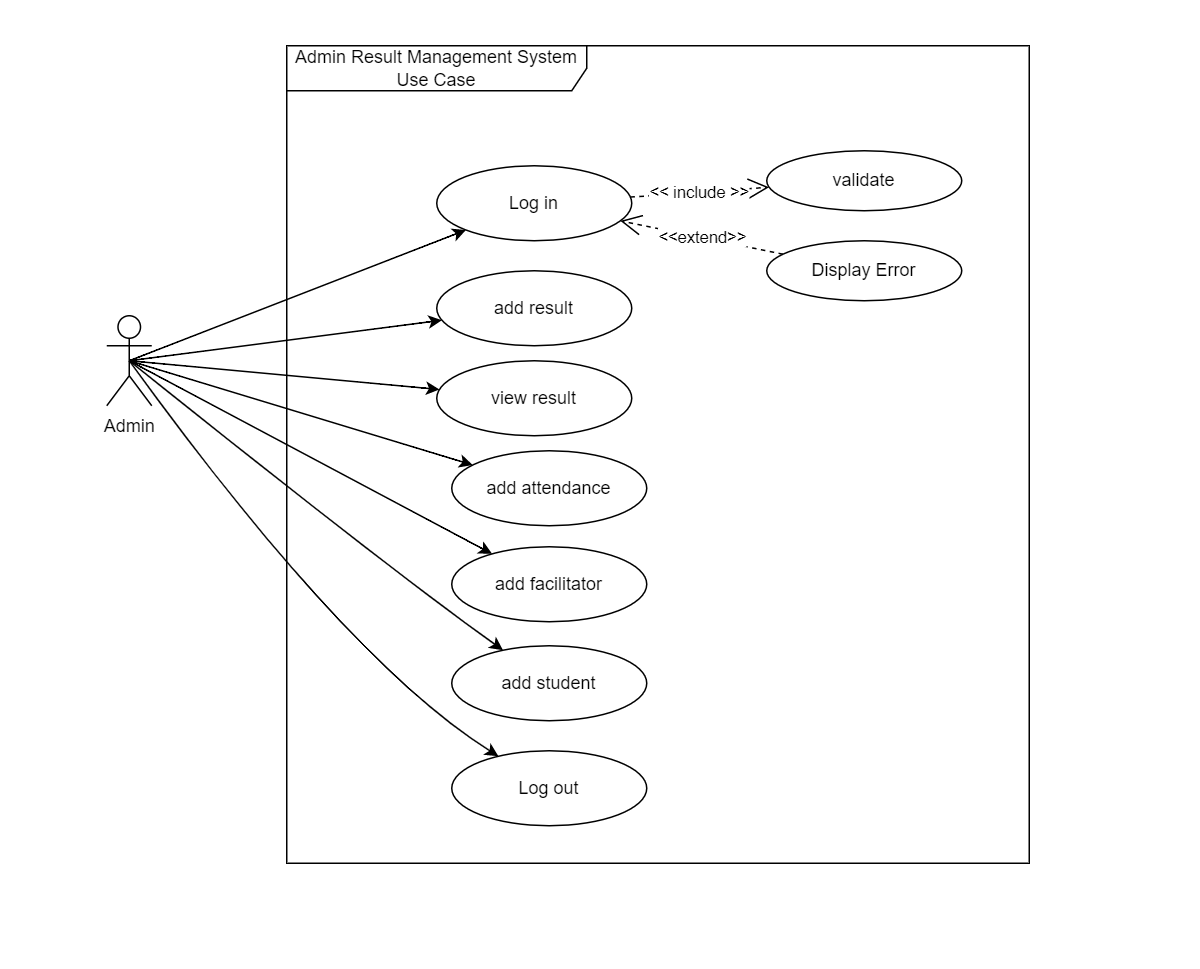


Fig 1: Use Case - Admin

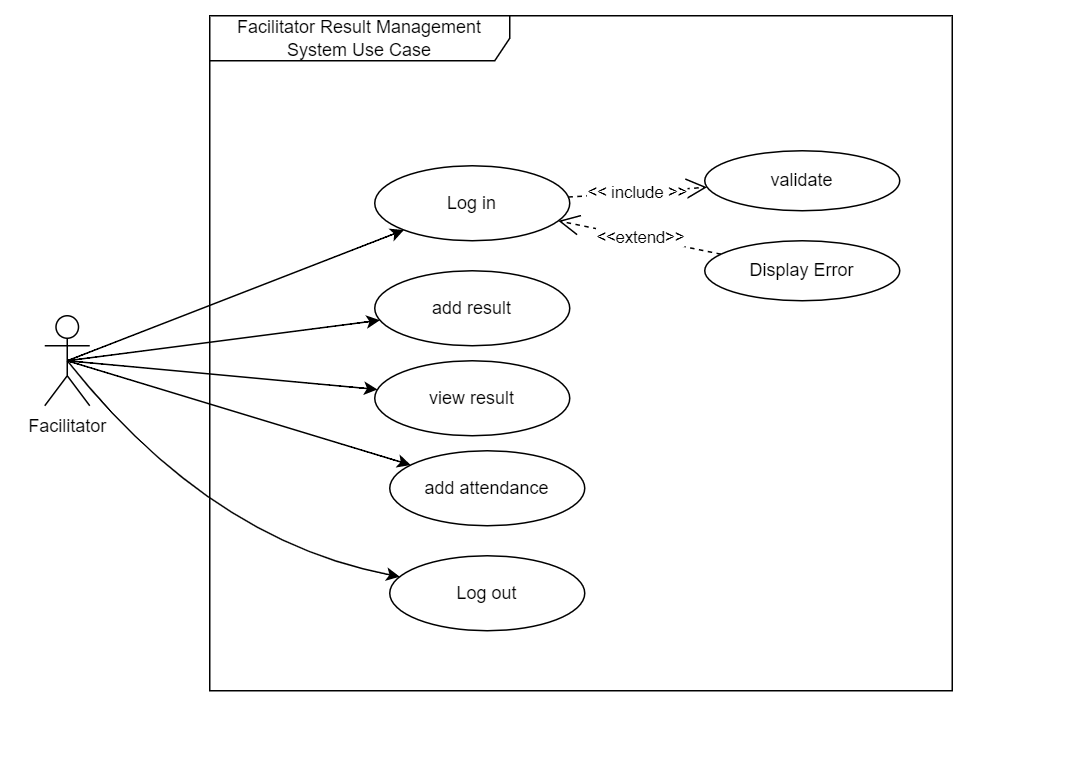


Fig 2: Use Case - Facilitator

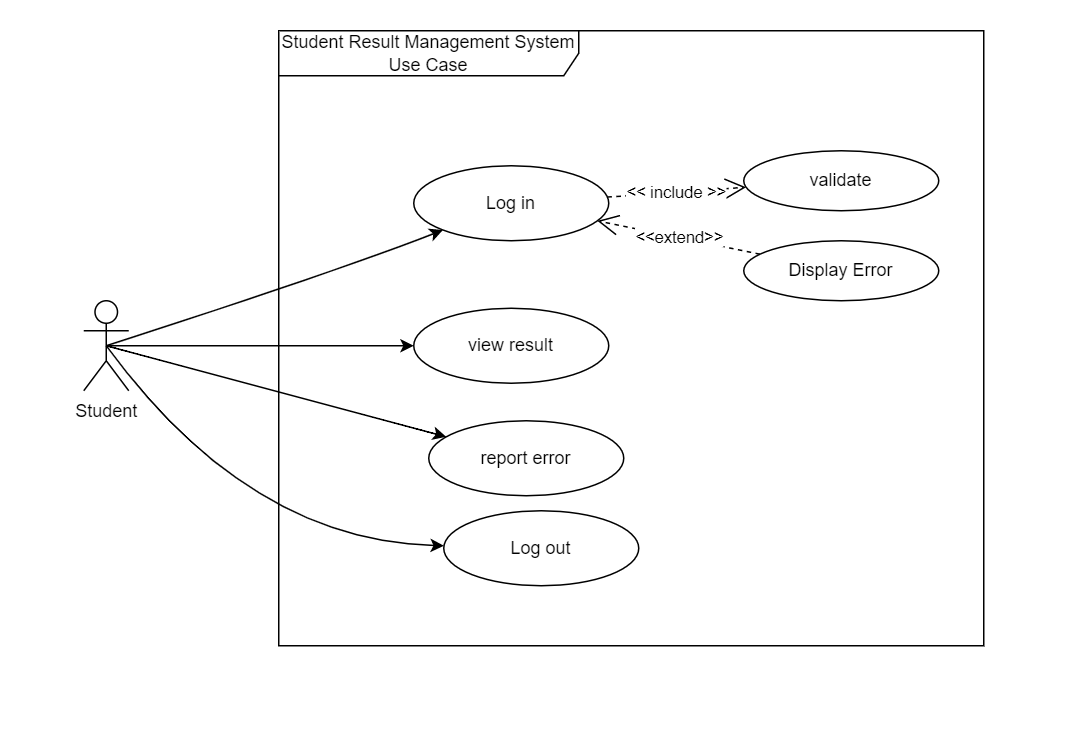


Fig 3: Use Case - Student

### **2.3.2 Non-functional Requirement**

## **2.4 Feasibility Study**

Feasibility study is an analysis of how successfully a project can be completed, accounting for factors that effect it such as economic, technical, legal and other factors, Similarly, we use feasibility studies to determine potential positive and negative outcomes of a project before investing a considerable amount of time and money into it..

### **2.4.1 Economic feasibility**

Economic feasibility is done in order to know whether the project is benefit-able or not. In economic feasibility we compare the cost and benefit involved in the system before, during and after the system has been completed. Here, the time is also considered to be as capital. Economic feasibility is done through several methods.

#### **2.4.1.1 Payback Analysis**

#### **2.4.1.2 Return on Investment**

ROI is the percentage rate that measures the relationship between the amounts business get back from the investment and the amount invested.

Lifetime ROI = (Estimated lifetime benefits - Estimated lifetime costs)/Estimated lifetime costs

So,

Estimated lifetime costs = Rs. 15000

Estimated lifetime benefits = Rs. 60000

Lifetime ROI = (60000-15000)/15000

=45000/15000

=3%

RMS is likely to give us 3% benefit from the project in our lifetime duration until its use for a particular organization.

#### **2.4.1.3 Net Present Value**

### **2.4.2 Technical feasibility**

Our system is built for any type of operating system. It can upgrade to the upgrades of software engineering principles.It uses JAVA as main programming language for production in which we can add new classes and modules as per the requirement.

**Hardware Specification**

* Laptop/Desktop

**Software Specification**

* SQL Server
* Intellij IDEA
* Windows/Linux
* Diagram Tool - draw.io

Each of the above resources are freely available and technical skills required are manageable.

Initially this desktop application will be provided locally through emails but later after it gets finished it will be available on different stores.Bandwidth application in this application is very low as it doesn't contain any multimedia aspect.

### **2.4.3 Legal feasibility**

RMS uses the freely available tools and will be easily available to the users. Only the maintenance cost will be charged from the main potential members.

This system is available for people for every background people. So it doesn’t cause any legal problems in the society.

### **2.4.5 Operational feasibility**

In operational feasibility,we look at the available resources whether they are available or not.

* RMS makes easy and fast for the access of the result and making it. Students can access 24 hrs after the result has been published. After the publish of the result students can access their reports 24 by 7. Next time the result will be updated. So it is feasible.
* This saves a lot of time for the admin and teachers along with students which gives a plus benefit for the user.
* After this system is developed, it will be surely used by the schools as they need this.
* There are sufficient developers so this project can be developed in time.
* The database will be well protected under certain security. Hence, information of the user will be secure.
* RMS has been started from the users needs of Result Making Software. So it will be feasible.

The above factors determines that RMS is operationally feasible.

### **2.4.6 Schedule feasibility**

|  |  |  |  |
| --- | --- | --- | --- |
|  | Starting | Ending | Duration |
| Requirement gathering and feasibility study | 10/1/2022 | 11/10/2022 | 40 |
| System Analysis | 11/10/2022 | 12/15/2022 | 35 |
| System Design | 12/15/2022 | 1/15/2023 | 31 |
| Coding | 1/15/2023 | 2/5/2023 | 21 |
| Testing | 2/5/2023 | 2/13/2023 | 8 |
| Debugging | 2/13/2023 | 2/27/2023 | 14 |
| Implementation | 2/27/2023 | 3/7/2023 | 8 |
| Maintenance | 3/10/2023 | 3/30/2023 | 20 |
| Documentation | 10/1/2022 | 3/30/2023 | 180 |

### **2.4.7 Risk feasibility**

While doing the project there are certain risk involved in that process . So here are what could be the risk in our project.

1. Will the project run on Linux OS too?

Yes, this project is platform independent that means it can run on Linux OS too.

1. Will it get hanged or not ?

It doesn't use multimedia aspects so it takes less bandwidth. It is less likely to get hanged as it takes less memory and less internet package..

1. Does this need any technical skills?

As it will be based on GUI system. A user with little knowledge of English language will be able to use this application easily.

1. Will this create a market or not ?

As nowadays there is time to time lockdown and all that problem is good to make our project successful. Schools are forced to take exams and publish result online. So, our project will take up the market.

1. Can the change in project be tracked throughout the software life cycle process?

GIT will be used to track the change that happen in the application.

1. Will the old algorithm be applicable for the result making process?

In order to solve this, a new algorithm will be generated for the result making process.

## **2.5 Structuring System Requirements**

### **2.5.1 ER Diagram**

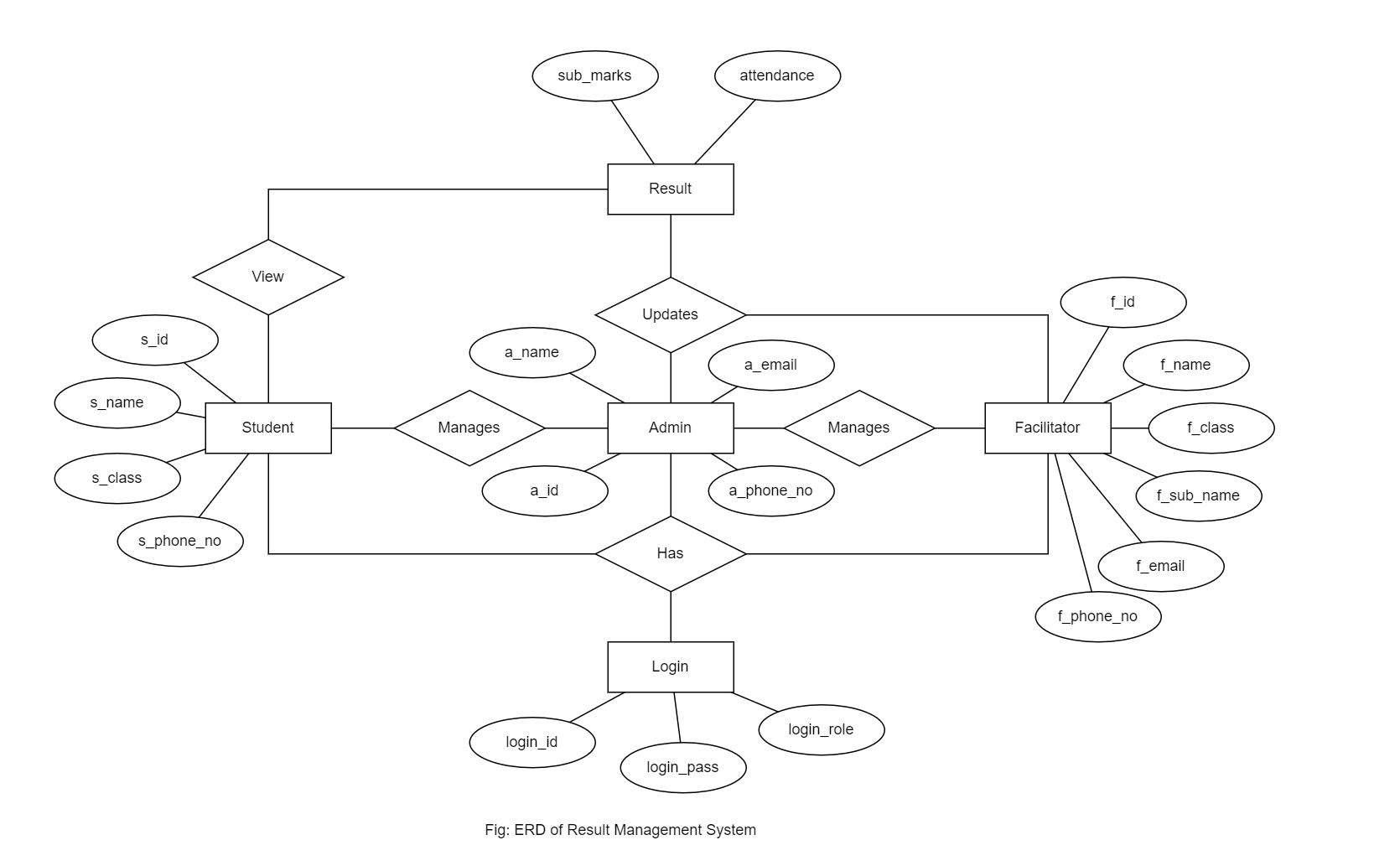


Fig 4: ER Diagram

### **2.5.2 Process Modeling(DFD Level-0)**

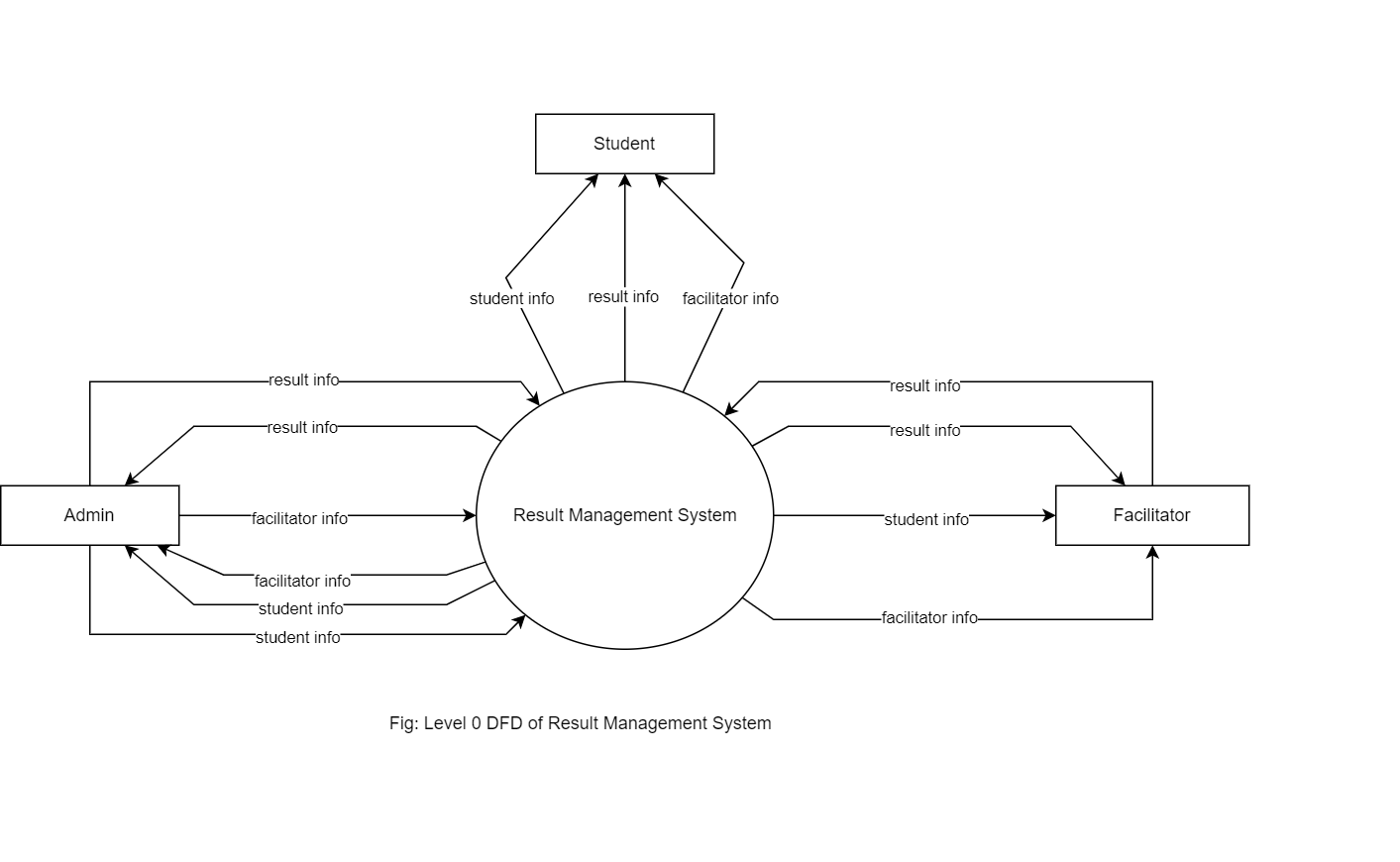


Fig 5: Level - 0 DFD

### **2.5.3 Process Modeling(DFD Level-1)**

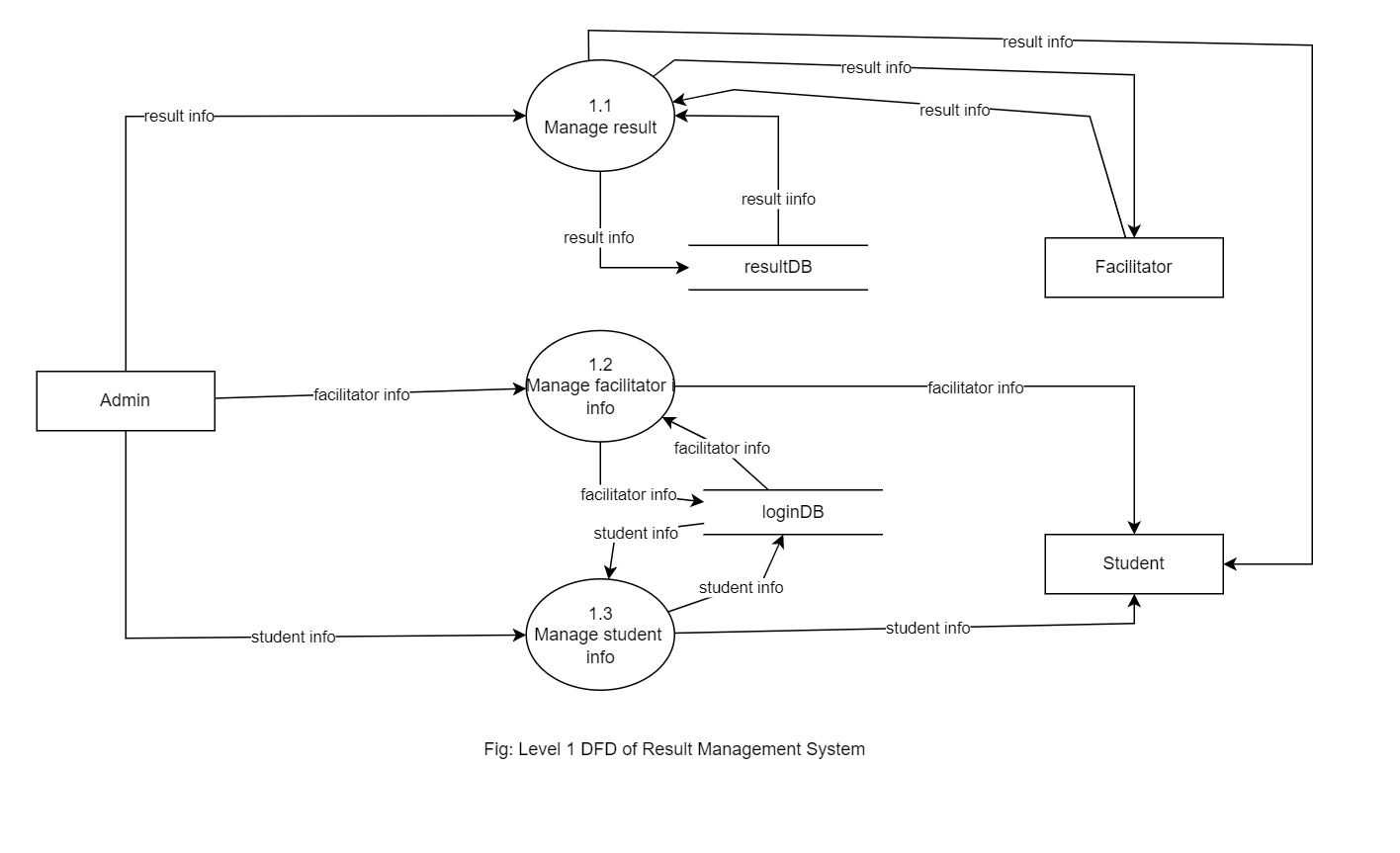


Fig 6: Level 1 DFD

# **CHAPTER 3 : SYSTEM DESIGN**

## **3.1 System Architecture and Overview**

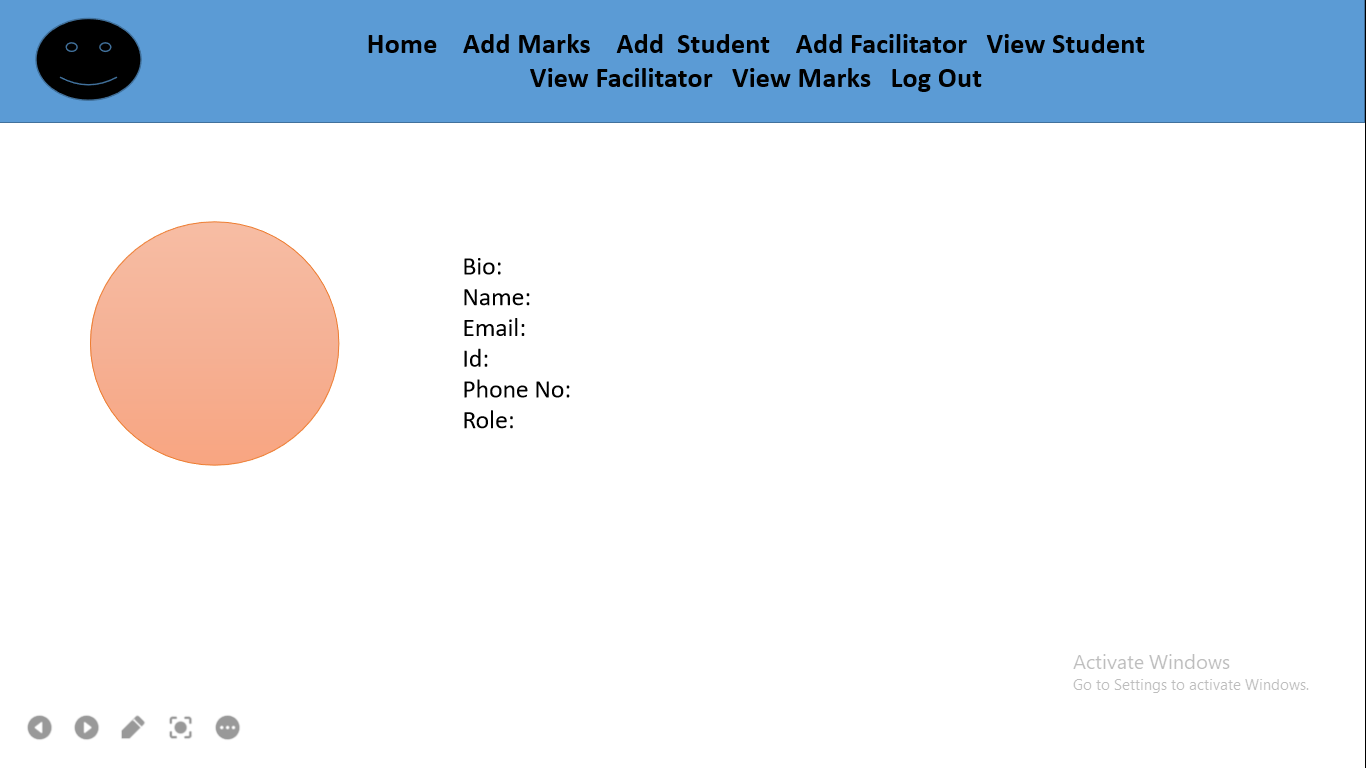
## **3.2 System Design**

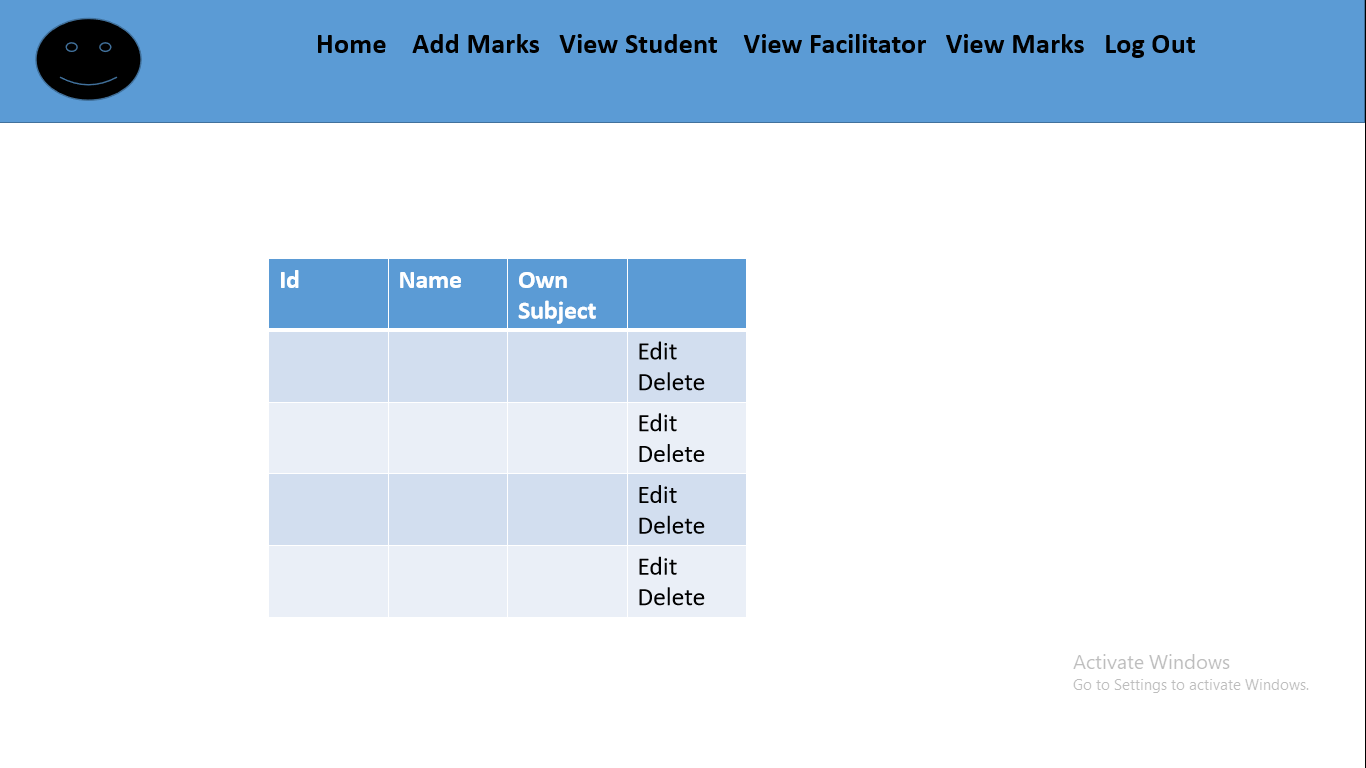
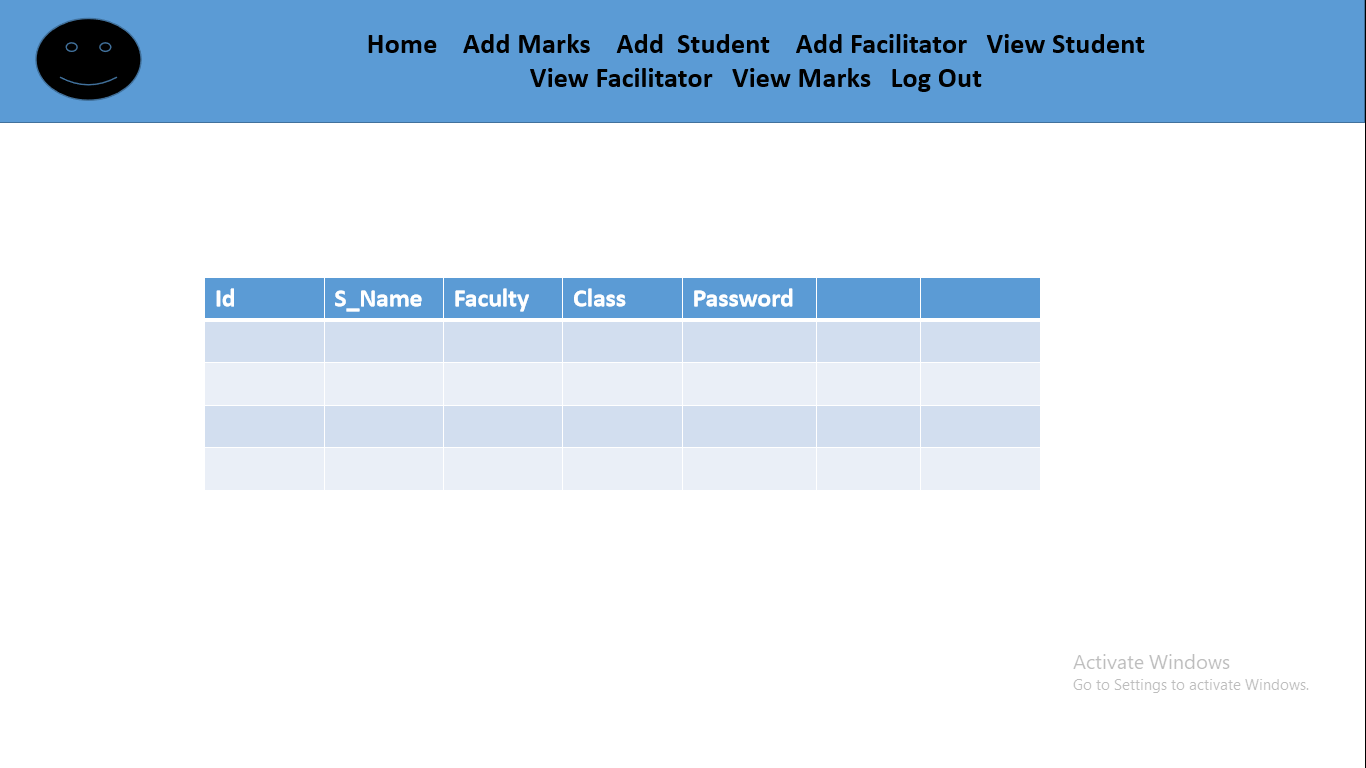
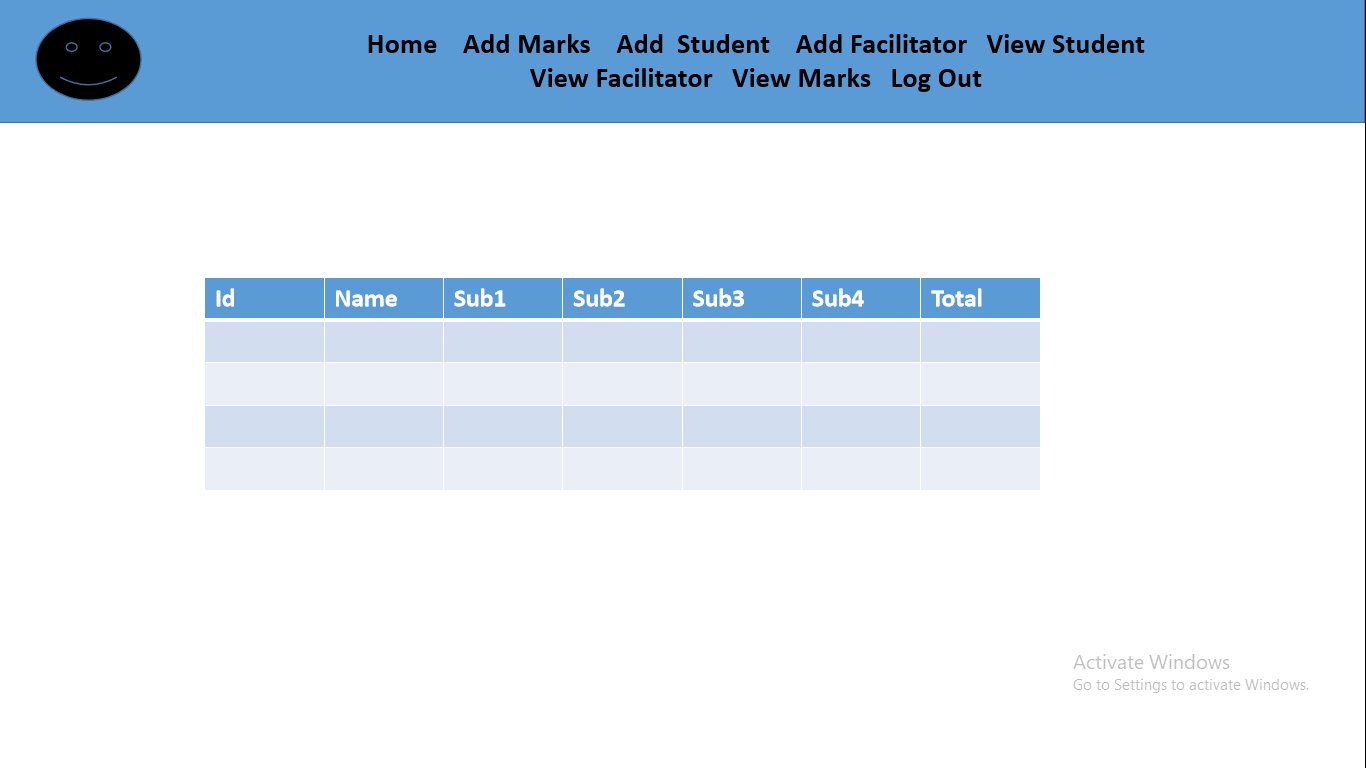
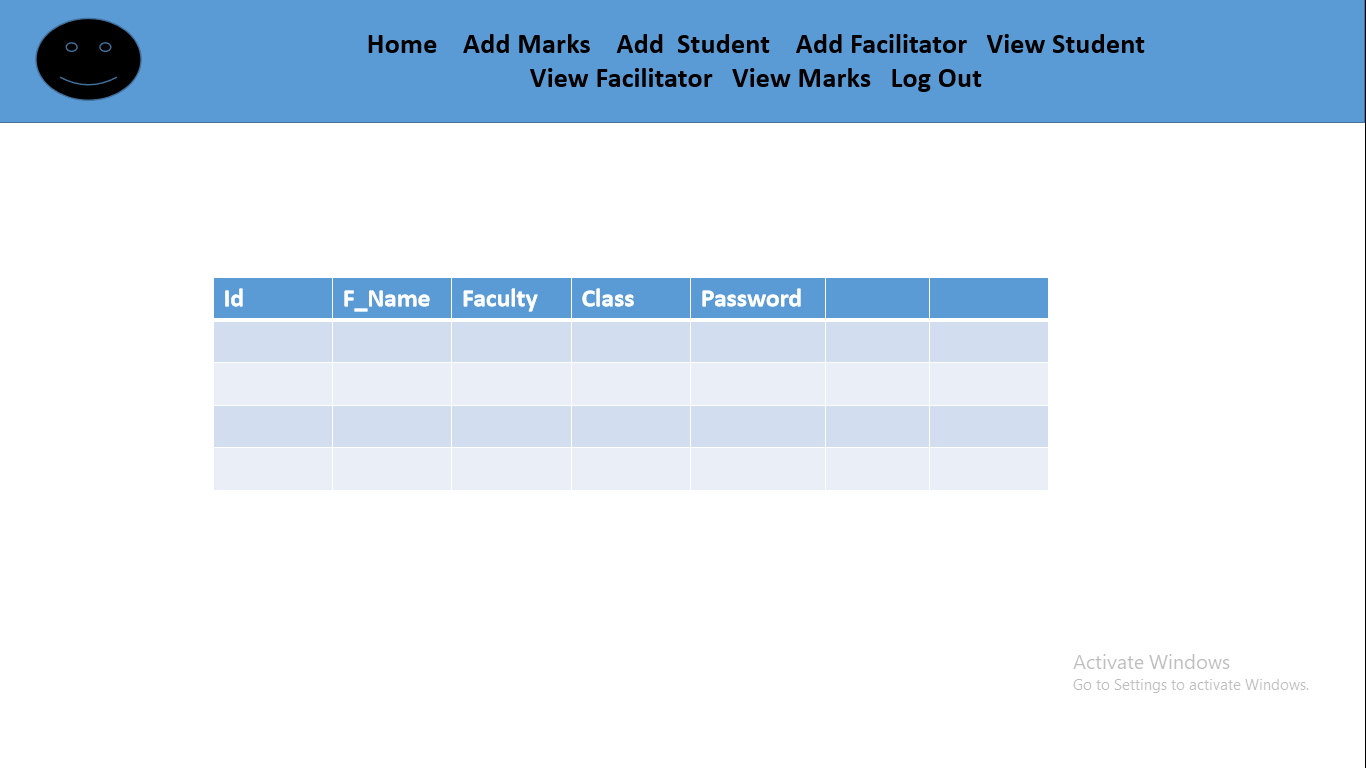
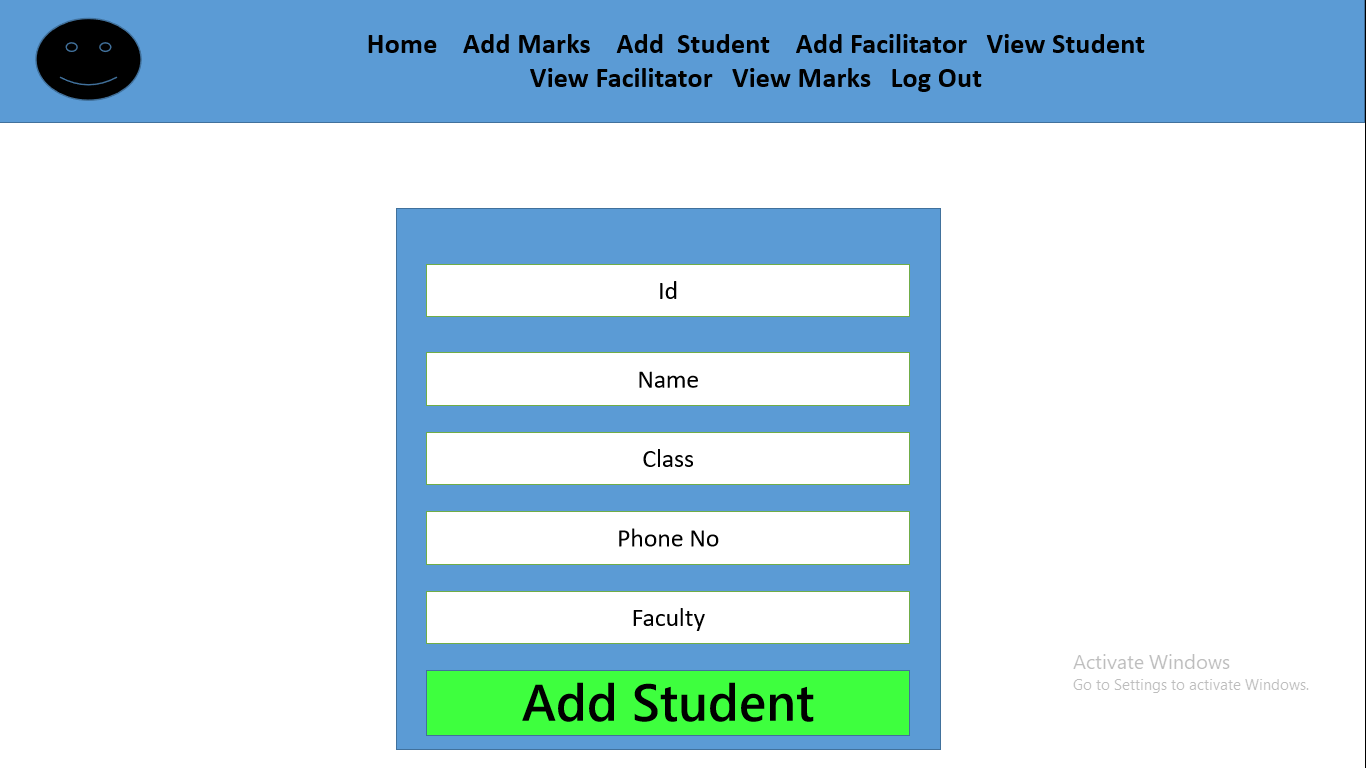
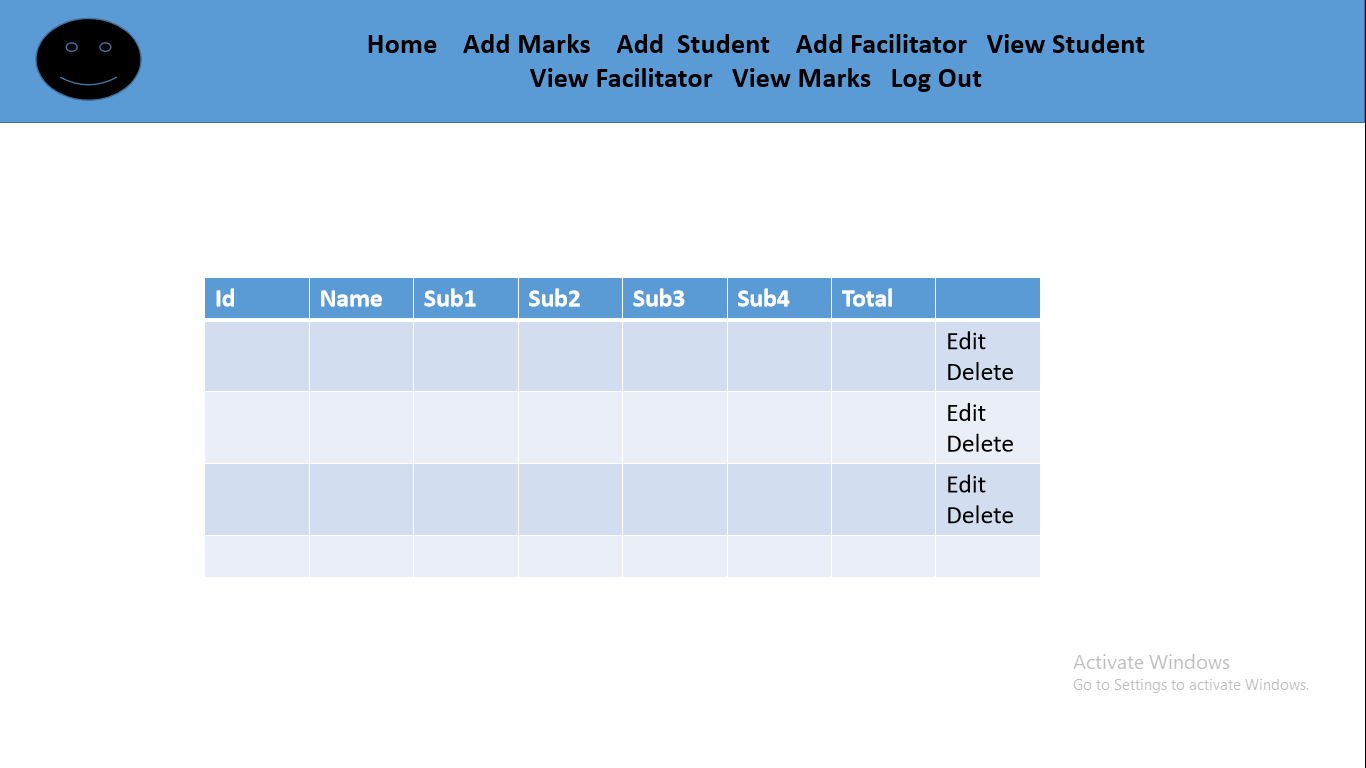
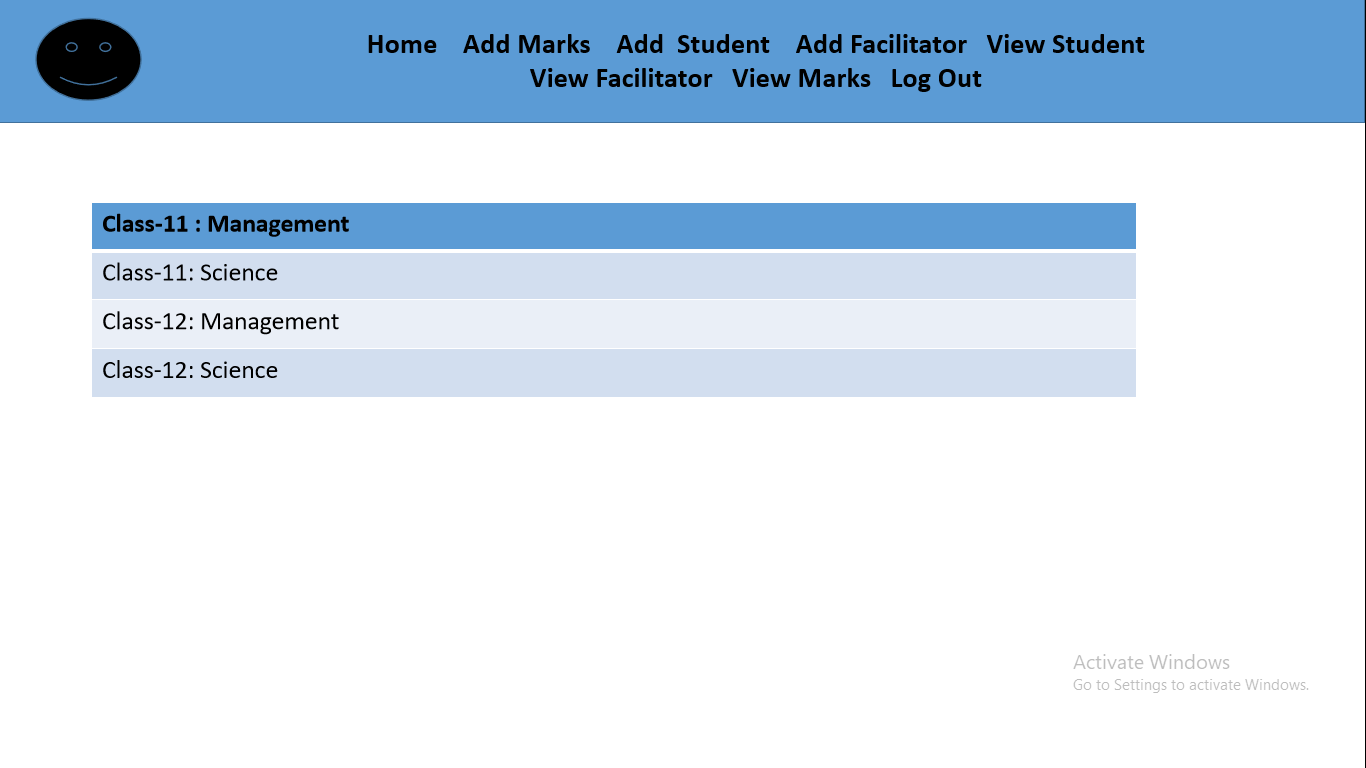
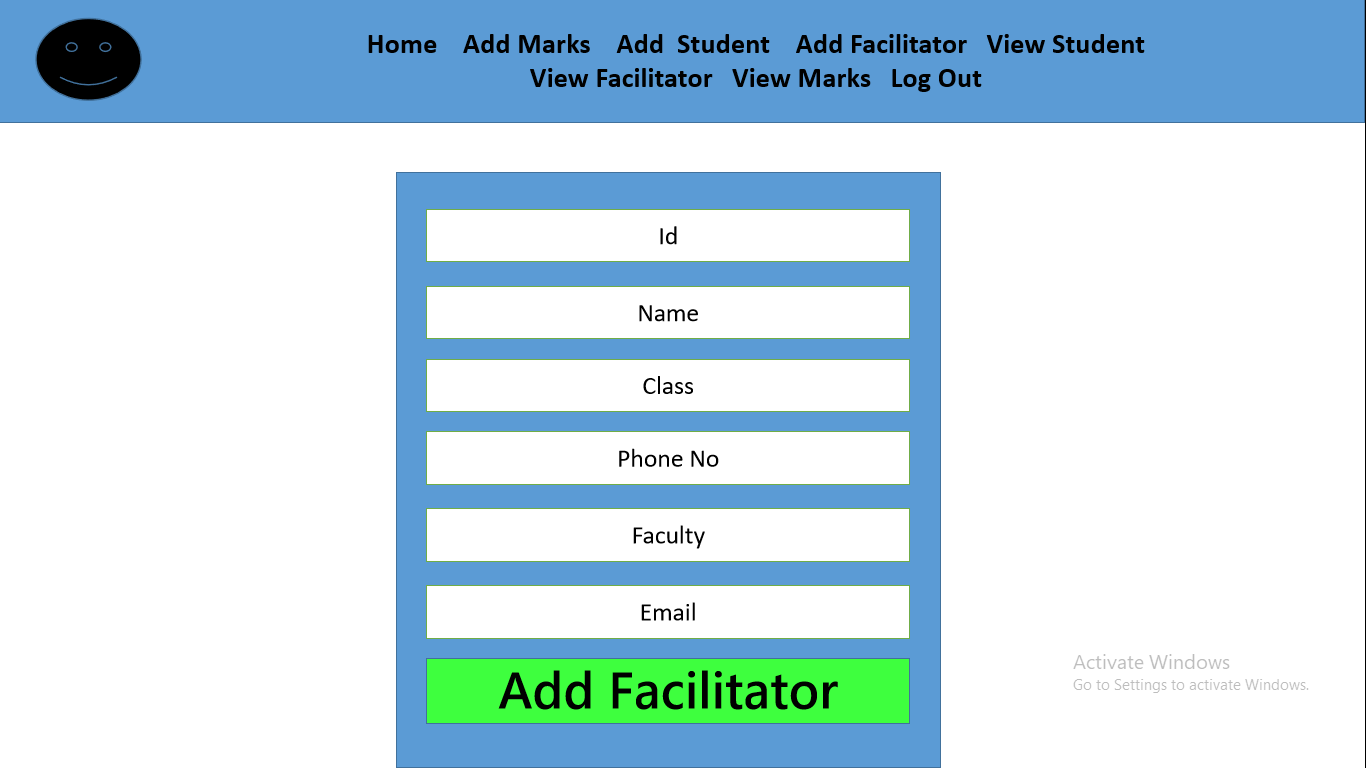
### **3.2.1 Database Schema**

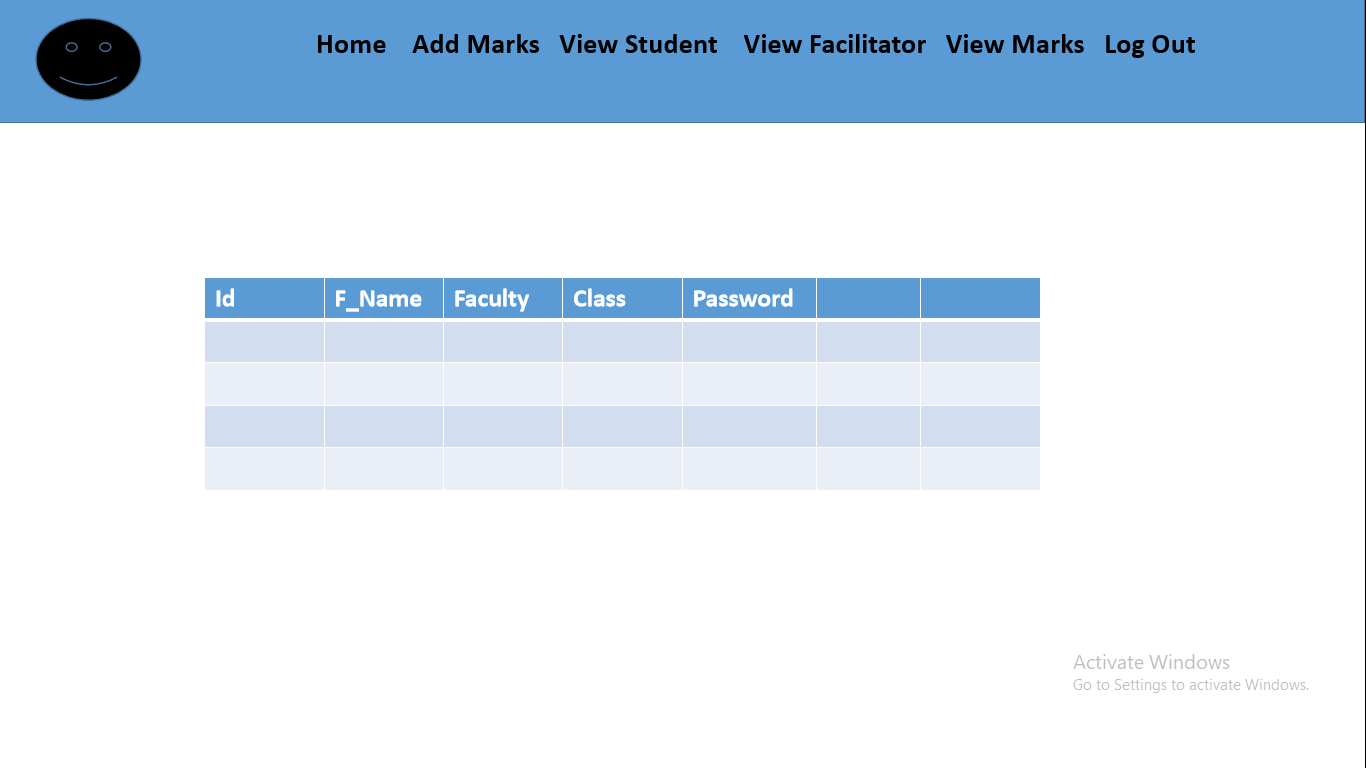
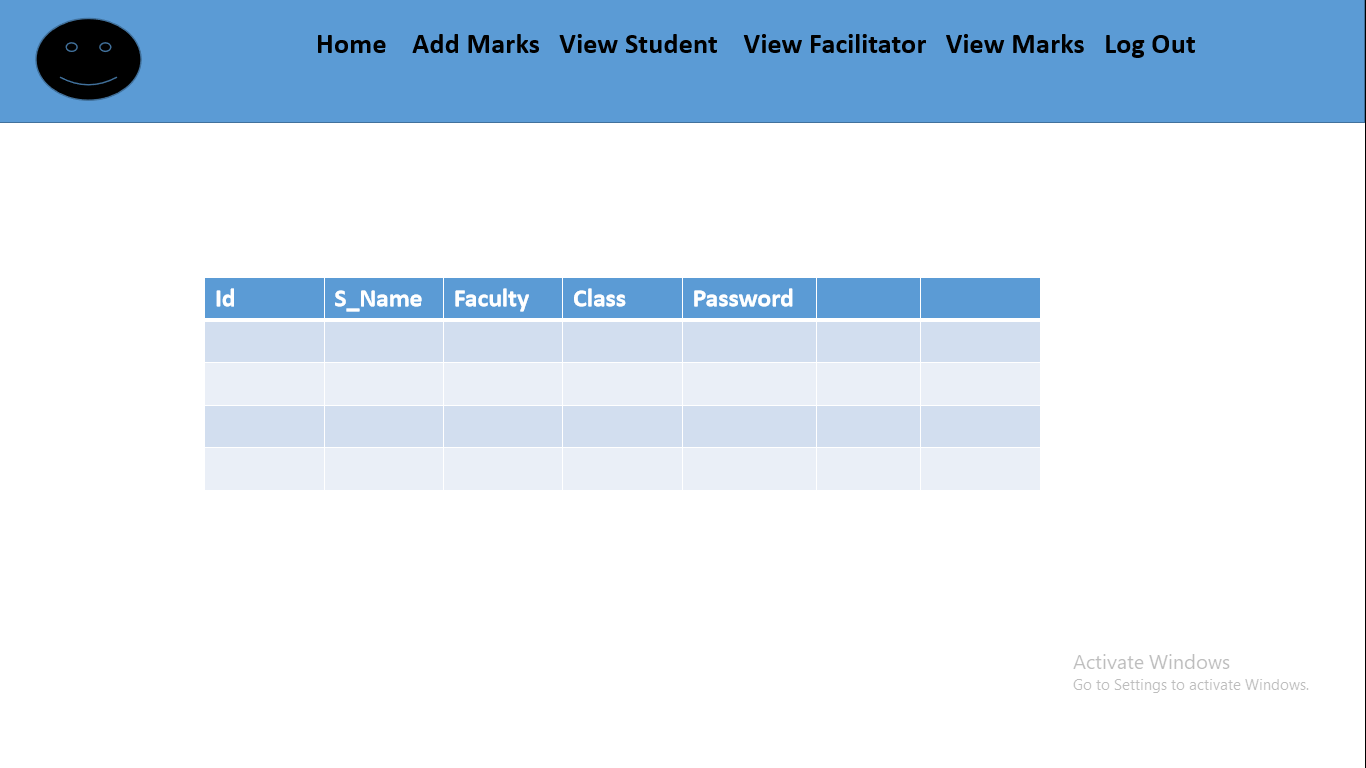
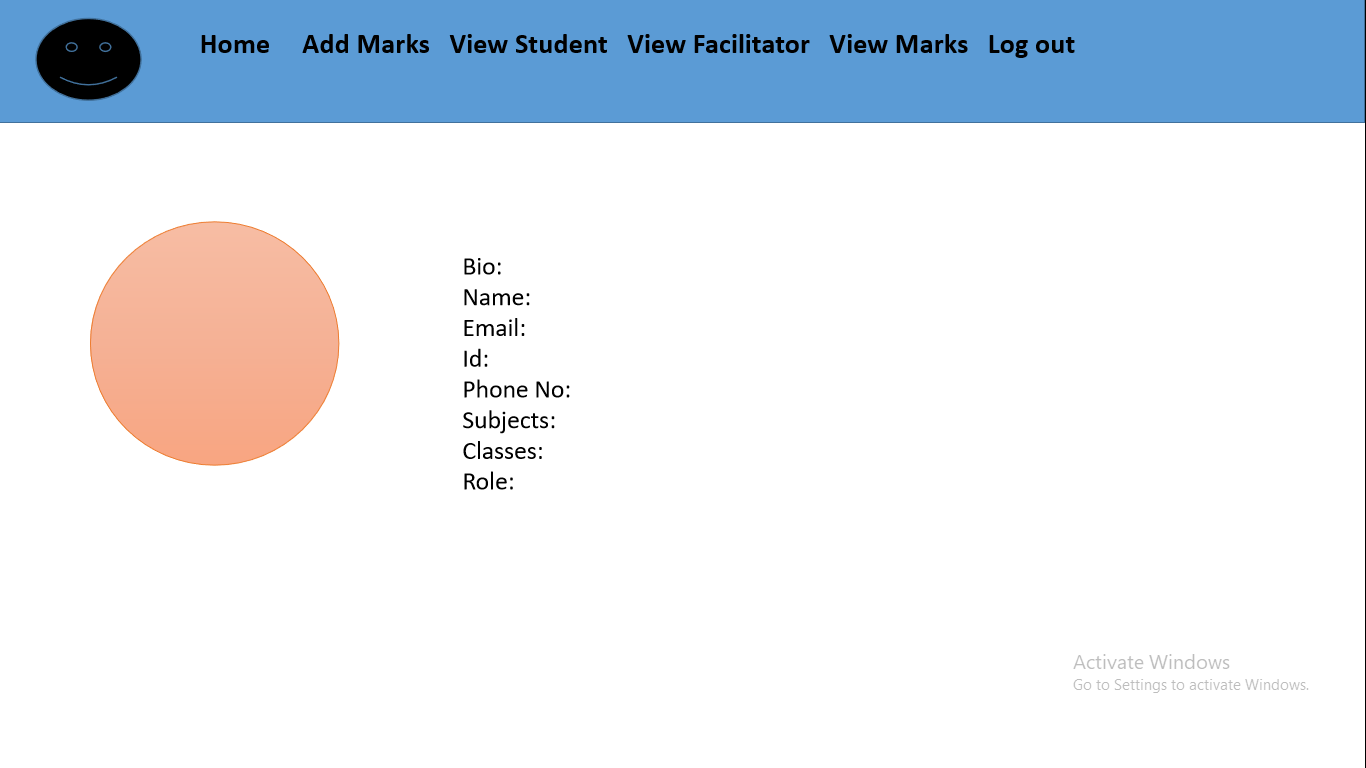
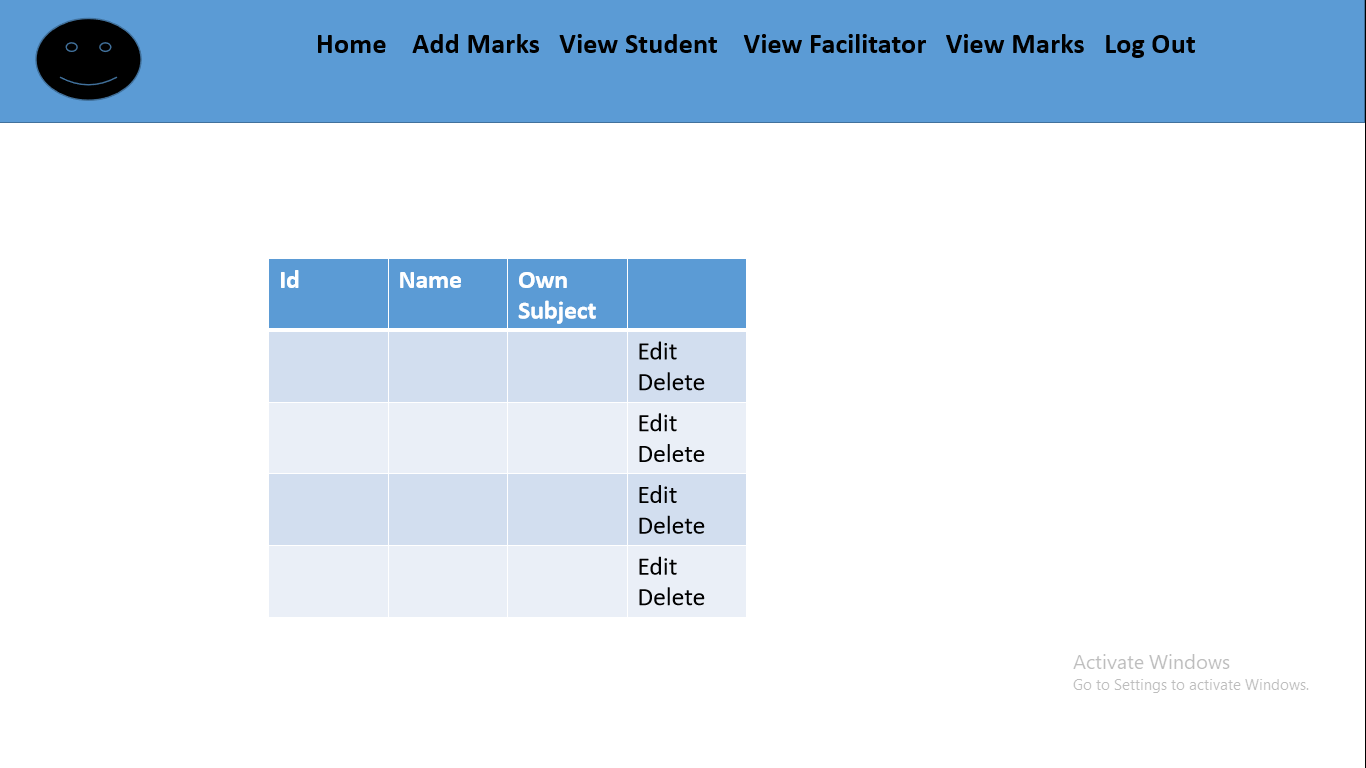
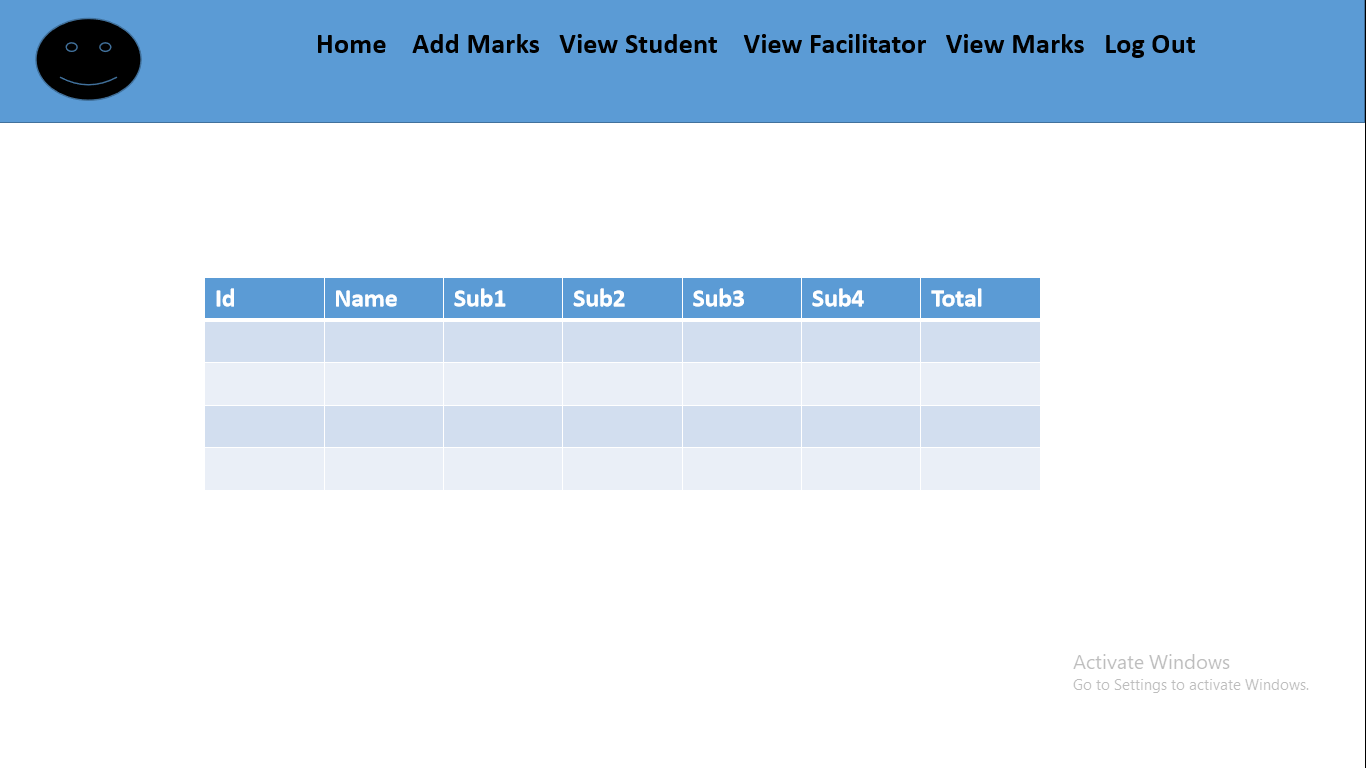
### **3.2.1 Data Dictionary**

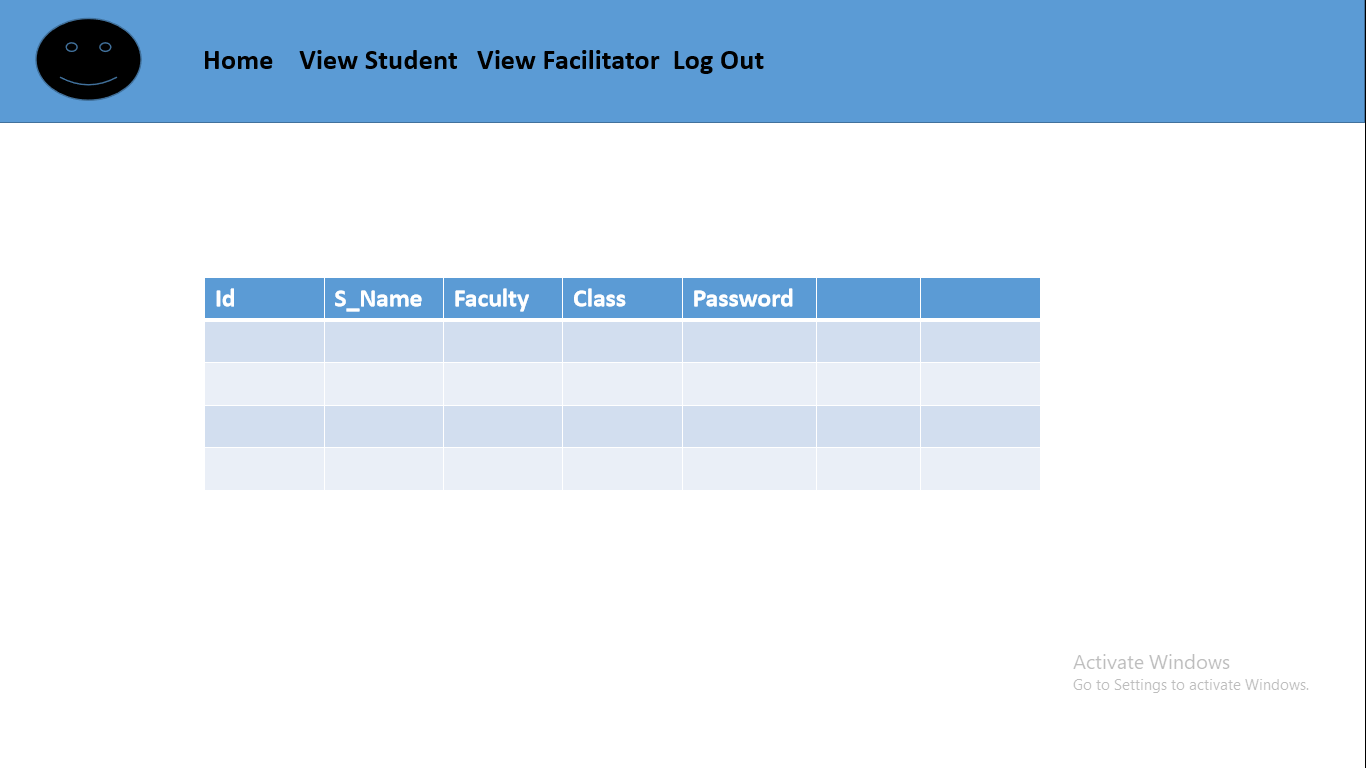
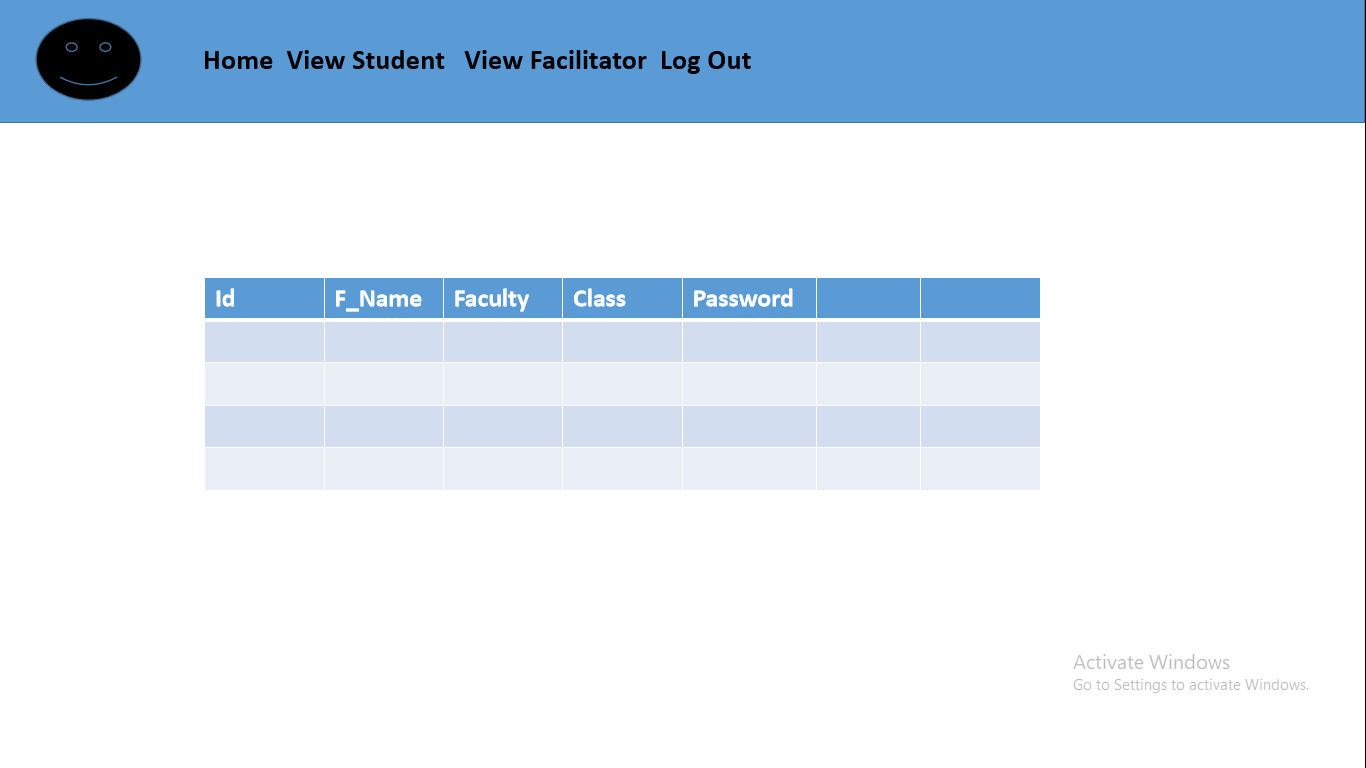
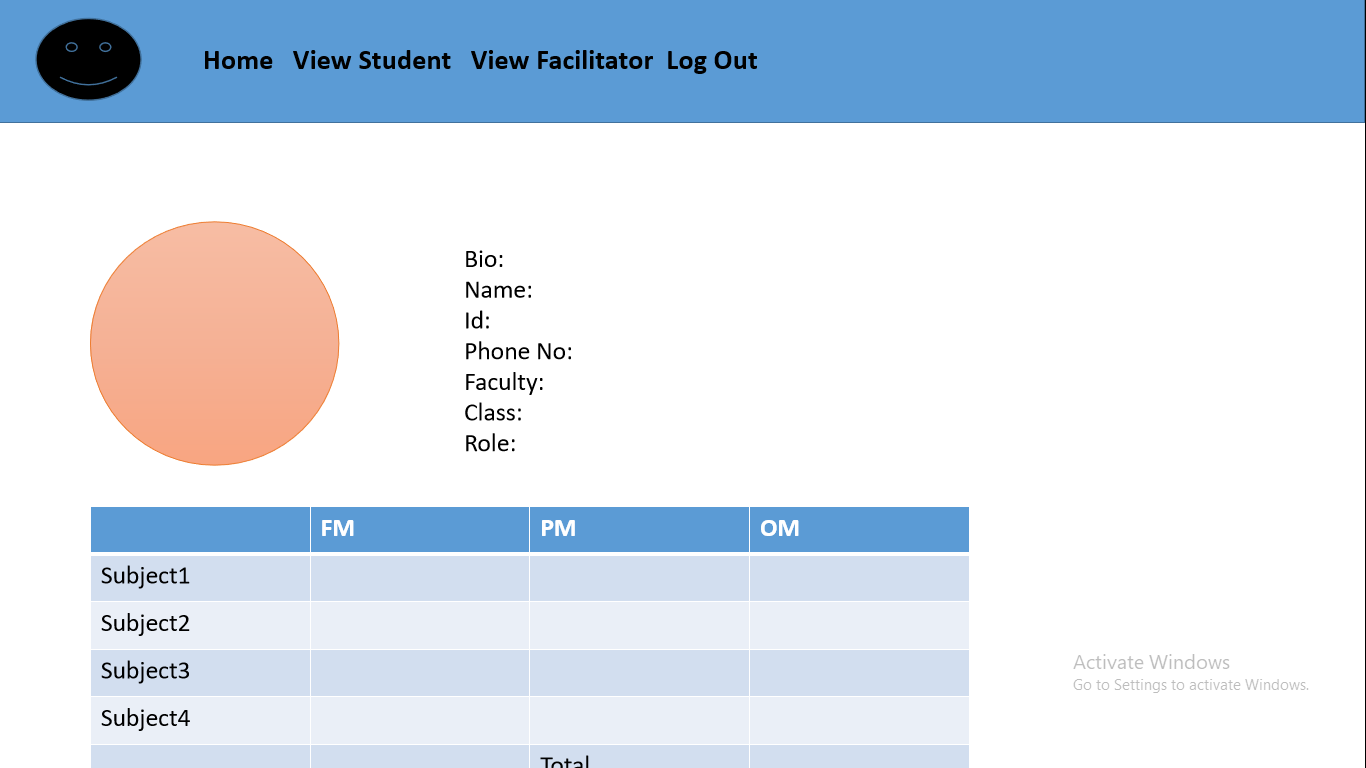
### **3.2.2 UML Class Diagram**

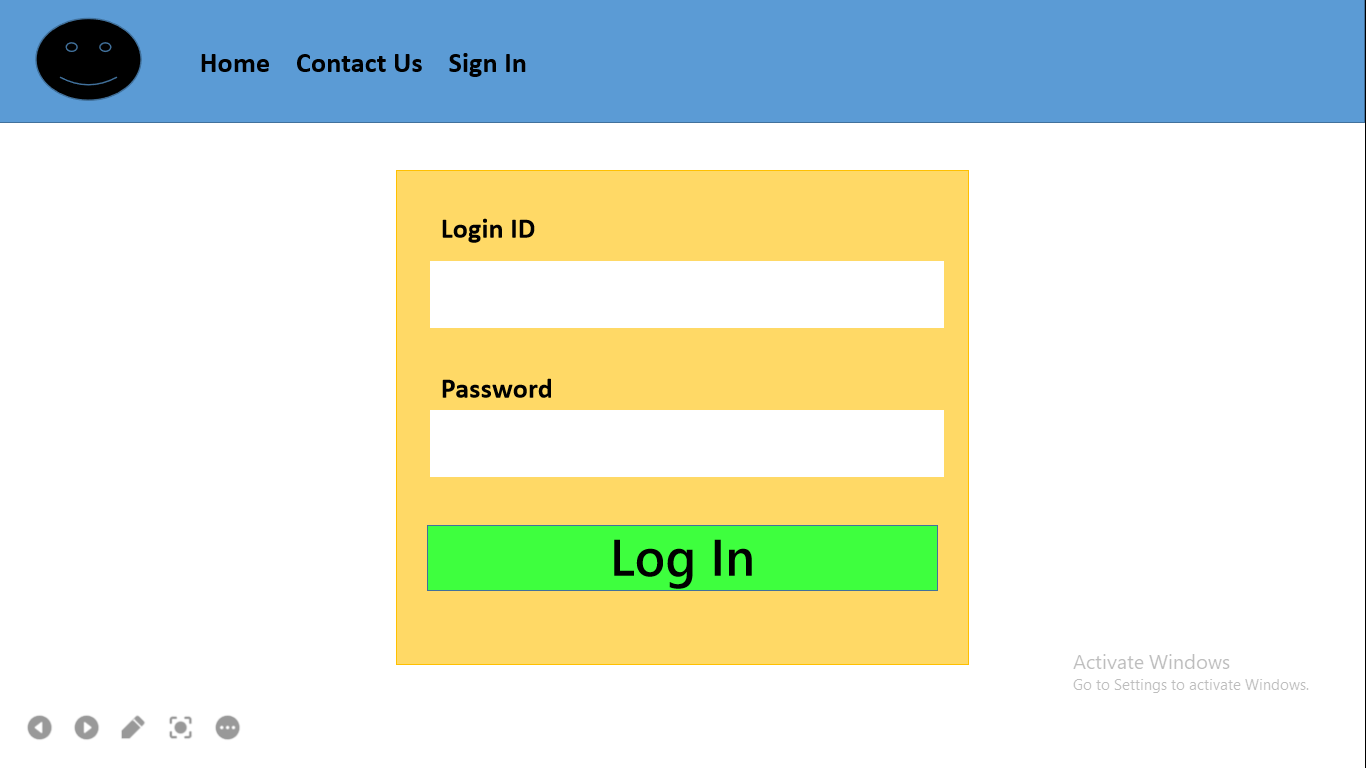
## **3.3 Interface Design**











# **CHAPTER 4 : IMPLEMENTATION AND TESTING**

## **4.1 Implementation and Overview**

## **4.2 Technology used in my system**

### **4.2.1 JAVA**

### **4.2.2 Swing**

### **4.2.3 JDBC**

### **4.2.4 MySQL**

## **4.3 Testing**

## **4.3.1 Integration Testing**

## **4.3.2 Unit Testing**

## **4.3.3 System Testing**

# **CHAPTER 5: CONCLUSION AND RECOMMENDATION**

## **5.1 Conclusion**

## **5.2 Recommendation**

## 

## 