“EXAMINATION MANAGEMENT SYSTEM”

A Minor / Major Project Report

Submitted in partial fulfillment of the requirements for the

Award of degree of Bachelor of Computer Applications

(BCA)

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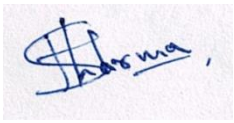
2021

STUDENT UNDERTAKING

This is to certify that the project titled "EXAMINATION MANAGEMENT SYSTEM" submitted to BharatiVidyapeeth (Deemed to be University), Pune in partial fulfillment of the requirement for the award of the degree of Bachelor of Computer Applications is an original work carried out under the guidance of Mr. AJAY KUMAR. The matter embodied in this project is a genuine work done by me and has been submitted neither to this University nor to any other University for the fulfillment of the requirement of the course of study.

Signature: - 

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CERTIFICATE FROM INTERNAL GUIDE

This is to certify that the Project titled EXAMINATION MANAGEMENT SYSTEM is an academic work done by HARSH SHARMA submitted in the partial fulfillment of the requirement for the award of the Degree of Bachelor of Computer Applications from BharatiVidyapeeth (Deemed to be University), Pune under my guidance.

To the best of my knowledge and belief the data & information presented by him/her in the project has not been submitted earlier whether to this University or to any other University / Institute for the fulfillment of the requirement of any course of study.

Signature

Name Internal Guide: - Mr. AJAY KUMAR

CERTIFICATE FROM THE DIRECTOR

This is to certify that the Project titled "EXAMINATION MANAGEMENT SYSTEM" is an academic work done by HARSH SHARMA submitted in partial fulfillment of the requirement for the award of the Degree of Bachelor of Computer Applications from BharatiVidyapeeth (Deemed to be University), Pune.

The authenticity of the project work will be examined by the viva examiner which includes data verification, checking duplicity of information etc. and it may be rejected due to non-fulfillment of quality standards set by the institute.

Dr. Yamini Agarwal
Director

PREFACE

Computers are now becoming part of almost every activity in organisation. The development made in the fields of information and computer technology have vastly blown up and have changed the face of present world rapidly. The use of it has gradually and now computers are increasingly used for everyday activities organisations. The Examination Management System is full of feeling to provide better service to its users.

Also there is a lack of security of data while performing the task manually. Manual tasking is a time consuming process, i.e., wastage of time and human resources.

The main objective of the program is too severe the examination to handle records.

Through this system, we can lead to error free, secure, reliable and fast management system. It also helps in organizing the better utilization of resources. The aim of this system is to develop a well define system with improved facilities. Also security of data is there, it minimizes the manual data entry. It ensures data accuracy.

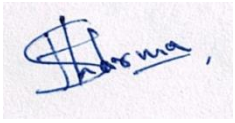
This system is easy to understand, it satisfies the user requirements, and collection of data in this system is simple and sensible. Our system focuses on many activities like: adding/deleting student record, attempt exam, student leader board, view answers etc.

The program should be user friendly and fast enough to fulfil user expectations.

I want to express my gratitude to Mr. AJAY KUMAR for his valuable guidance for accomplishing the project entitled “EXAMINATION MANAGEMENT SYSTEM”.

ACKNOWLEDGEMENT

I would like to express my gratitude and appreciation to all those who gave me the possibility to complete this report. A special thanks to our minor project Guide Mr. AJAY KUMAR whose help, stimulating suggestions and encouragement, helped me to coordinate our project especially in writing this report topic and achieving the goal as well as his encouragement to maintain our progress in track. I would to appreciate the guidance given by other supervisor as well as the panels especially in our project presentation that has improved our presentation skills by their comment and tips.

Name of the student: - 

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CHAPTER 1

INTRODUCTION

1.1 INTRODUCTION ABOUT THE PROJECT

- We have planned to develop a project on examination management system in order to conduct exams in a more convenient, user-friendly and efficient way.
- This project will be beneficial for both faculty and students in order to maintain the records and conducting the exams.
- We choose this project looking after the current situation so that we reduce human interaction.

Different modules and their working

1) **Login module** :- The main purpose for developing this module is so that we can easily manage the login procedure in our system .By using this module the faculty and students both can easily login with their respective user id's and passwords and can easily access the information. This login system provides us the sense of security that without id and password no one can login anyone's account. That means our data is secure. This module also helped us in separating the various options between faculty and student.

This module contains two options:

- faculty menu
- Student menu

Faculty menu

I. Faculty menu contains features like add/delete student record, add/delete user, search student record, update student record, student leader board etc.

II. Faculty menu is developed the faculties so that they can login through their respective id and passwords can access these features. They can make changes in the database.

Student menu

I. Student menu contains the features like view profile, attempt exam, view answers, student leader board etc.
II. Student menu is developed for the students so that they can easily access their features with their respective id's and passwords.
III. After logging in the system the students view their profile.
IV. Students can attempt their exam
V. They can view leader board.

2) Offline examination module: - This module plays an important role in the software. The purpose for developing this module is so that the students can attempt their exam. In this module students will attempt their exam in the form of multiple choice questions they have to select the correct among the given options. For every correct answer students will get marks and at the end of the test the software will display their total marks in that particular test. Now these will marks will get automatically added in the database. This module will only allow students to attempt their test for only once. After completing the test a new feature will be unlocked this is view answer feature, in which the students can view their answers. This module will help us in reducing human interaction and also it ensures us that our data is saved successfully in the database and can be easily accesses at any required time.

3) Examination record maintain module: - This module helps us in maintaining the exam record, all the result generation process takes place in this module. The test data gets stored in the database through this module.

4) Student record maintain: - This module was developed so that we can reduce the human efforts and time in maintain the records of different students. Data of both faculty and student will be saved here, and can be easily be accessed at point of time so this shows that our data will not misplaced somewhere. Managing records manually can lead to the discrepancy of data because there are chances human errors but through this module we can reduce this.

5) View records: - The purpose of creating this module was so that the faculty and student both can view their respective records from the database by using login credentials. This module displays all the records for ex. Marks student details etc. The main feature of this module is that this module shows the record of that person only who has logged in, so here also the privacy and security of our data is well maintained.

6) Student leader board: - This module will be very useful if someone wants to see the leader board of the quiz. This will help students to get to know their position among the students who attempted the quiz.

7) Add/delete question/answer:- This module was developed for the faculties so that they can add and delete questions and answers for the exam.

1.2 Need of Computerization of System/ Problem in existing system

1.2.1. Existing System

Various problems of physical system are described below:-

- If one is not very careful then there is a possibility of doing errors which can further leads to multiple problems in the data.
- When a user requests for the record, one has to physically check for the record.
- Answering management query is a time consuming process.

1.3) Proposed Software

The proposed system removes the drawbacks of the existing system. The main highlights about the proposed Software are:

- Examination management Systemis to build a user friendly, robust, efficient system which can convert the existing manual system to a full-fledged computer system which can store the valuable data/information with easy access and manipulation.
- The project is secure, error free and reliable.
- The information which will be entered in the project cannot be redundant.
- The project is used to store the records of exams and student details.
    - Easy search of record in the software
    - Avoid the manual work

1.4) Importance of Work Project

1. Availability – The data required can be easily accessible and can be maintained.
2. Efficiency- The data can be easily retrieved from database efficiently.
3. Accuracy- The user cannot store redundant data.
4. Easy to use- The project has easy to use interface.
5. Time efficient – It reduces the effort of manually entering the records.

ADVANTAGES/SCOPE OF PROPOSED SYSTEM

1. Simple & easy to use
2. Highly secure, scalable & reliable.
3. Fully customizable.
4. Cost-effective.
5. Efficient data management.
6. Less human interaction.

- **The main objectives of the project will be maintaining the records of all the important activities like :-**

- To reduce the paper work.
- In order to limit the student-teacher interaction.
- Maintaining the records of the result of different examination.
- Maintaining the student records.

Other objectives are like that we can store large amount of data and can also search for any record easily. This will increase the reliability. This will decrease human efforts.

Features provided by software are:

- **ADMIN MENU**

    1. Add/delete student record
    2. Login module
    3. Search student record
    4. Update student record
    5. Student leader board
    6. Add/delete question answer

- **USER MENU.**

    1. Student leader board
    2. View answers
    3. Attempt exam
    4. View profile

CHAPTER 2

SYSTEM ANALYSIS

2.1 ANALYSIS METHODOLOGY/ REQUIREMENT GATHERING TECHNIQUES

There are many ways to gather information from the customer but the best method is conducting small questionnaire and use one to one methodology.

Asking same question but its different manner, so that the costumer does not get irritate from the questions. Also, we can ask from different students and teachers so that we could know that whether this software will be effective or not in their day to day life.

There are two types of requirement functional and non-functional and user requirement can be both. It is a work of analyst to know what exactly a customer wants and if the software being developed is not according to the needs of user then the analyst may tell that at what point software is not fulfilling the demands of user and what are the better ways of improving the software.

- Asked question must be simple and straight forward (to the point)
- If possible, question should be open ended.
- Communication barrier should be removed.

Questions can be:-

- Different problems in the existing system.
- Suggesting from the customer.
- Feedback to perform better and up to the requirement.
- Any specific requirement?

2.2 FEASIBILITY STUDY:

Feasibility study is a high level capsule version of the entire system analysis and design process. The purpose of feasibility is not to solve the problem but to determine if the problem is worth solving.

Different types of feasibility study

1. Technical Feasibility
2. Economic Feasibility
3. Operational Feasibility.

2.2.1 TECHNICAL FEASIBILITY

- It used to check whether the existing computer system supports the running system or not or up to what extend is supports.
- Our project is fit in technical feasibility because it does not require any heavy configuration system to run it or to develop it.

2.2.2 ECONOMICAL FEASIBILITY

- It is used to determine savings and benefits that are expected and then compare them with the cost.
- If benefits are more than the cost, then decision is made to design and implement the system.
- Our project 'ExaminationManagement System' is economically feasible as it requires only a laptop and knowledge of coding.

OPERATIONAL FEASIBILTY

It is a measure of how accurately systems fix the problems and takes merit of the opportunities find during scope definition and how it assures the requirements recognize in the requirements analysis phase of system development. There are some points which tell how our project is operational feasibility are possible:

1. This system will reduce human efforts like managing all records and also it reduces the use of paper.

2. In this software our manpower cost of doing all works manually will reduce time or cost.

2.3 CHOICE OF PLATFORMS

2.3.1 HARDWARE USED

- PROCESSOR - INTEL CORE I3 4TH GENERATION
- CLOCK SPEED - 3.5 GHZ
- SYSTEM BUS - 64 BITS
- RAM - 8GB OF RAM
- HDD - 1 TB
- MONITOR - AOC
- KEYBOARD - 108 KEYS

2.3.2 SOFTWARE USED

- OS - MS WINDOWS 10
- FRONT END - JAVA
- BACK END - SQL DATABASE

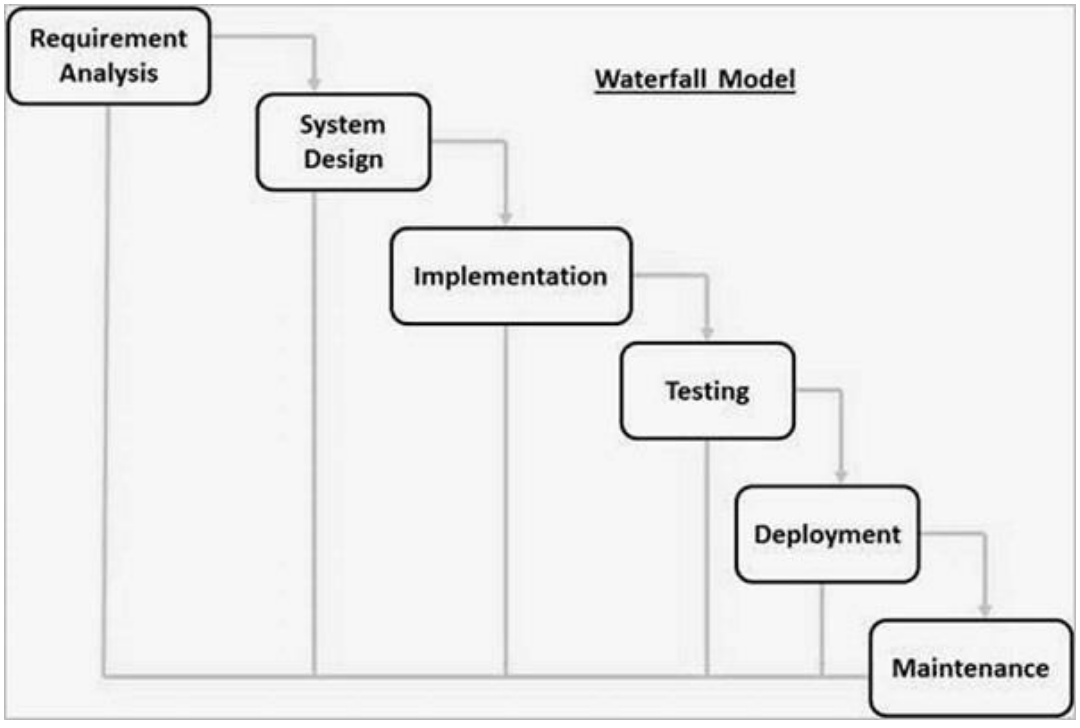
CHAPTER 3

SYSTEM DESIGN

3.1PROCESS MODEL USED

3.1.1WATERFALL MODEL

The waterfall model is a sequential design process, used in software development processes, in which progress is seen as flowing steadily downwards (like a waterfall) through the phases of conception, initiation, analysis, design, construction, testing, production/implementation, and maintenance.

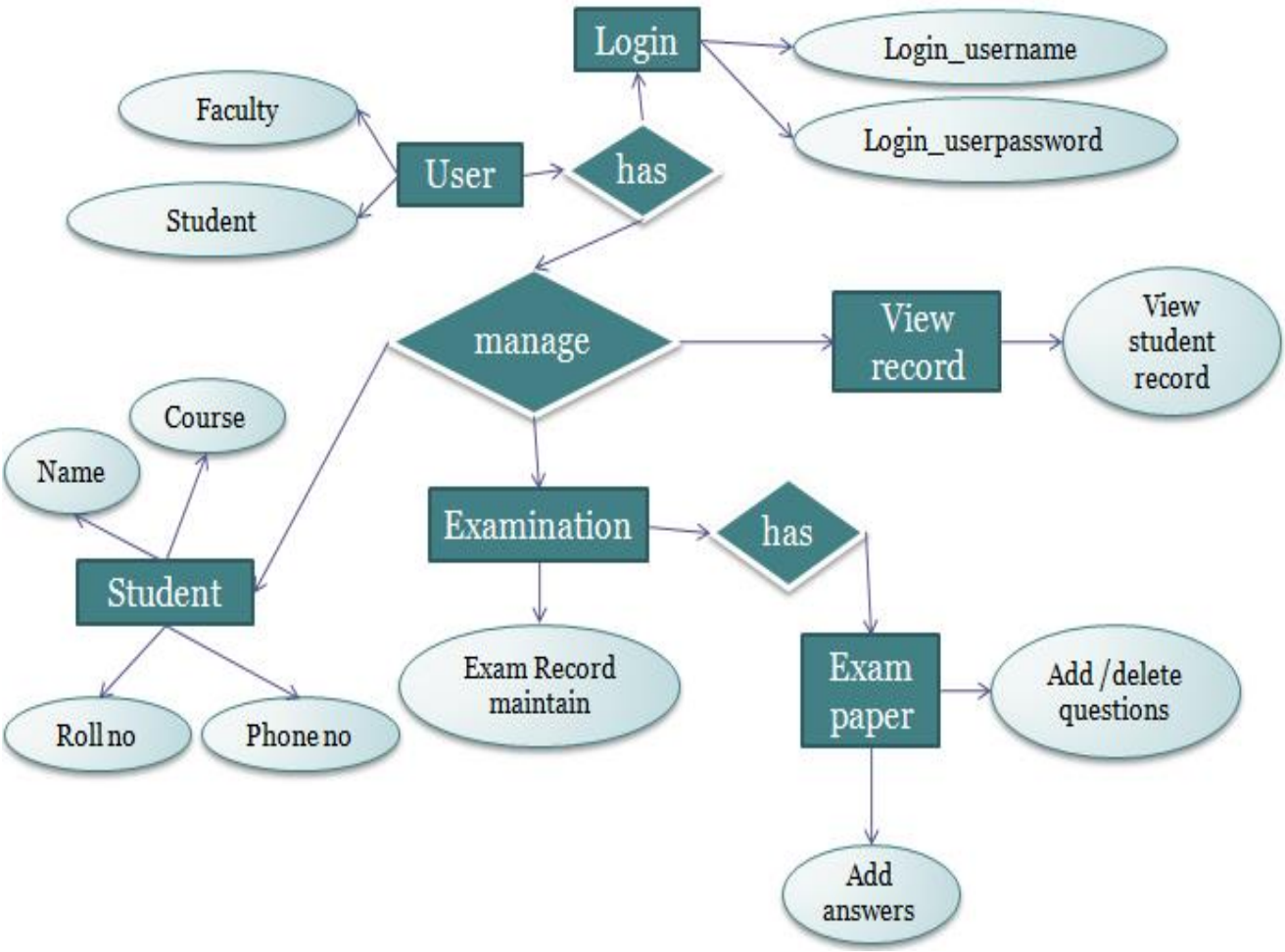


The different phases of waterfall model are:-

- Requirement Gathering and analysis
- System Design
- Implementation
- Integration and Testing
- Deployment of system
- Maintenance

3.2 Database Design (ERD)

An Entity Relationship (ER) Diagram is a type of flowchart that illustrates how “entities” such as people, objects or concepts relate to each other within a system

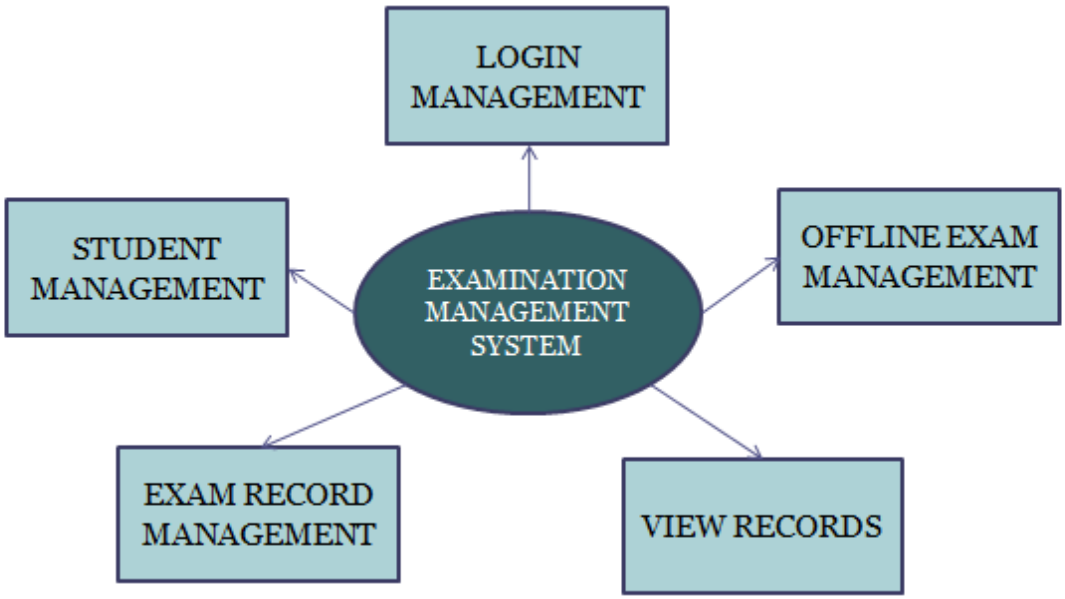


3.3.1 DFD MODEL

A dataflow diagram is a way of representing a flow of data of the system. This model also provides information about the inputs and the outputs of every entity and the processes.

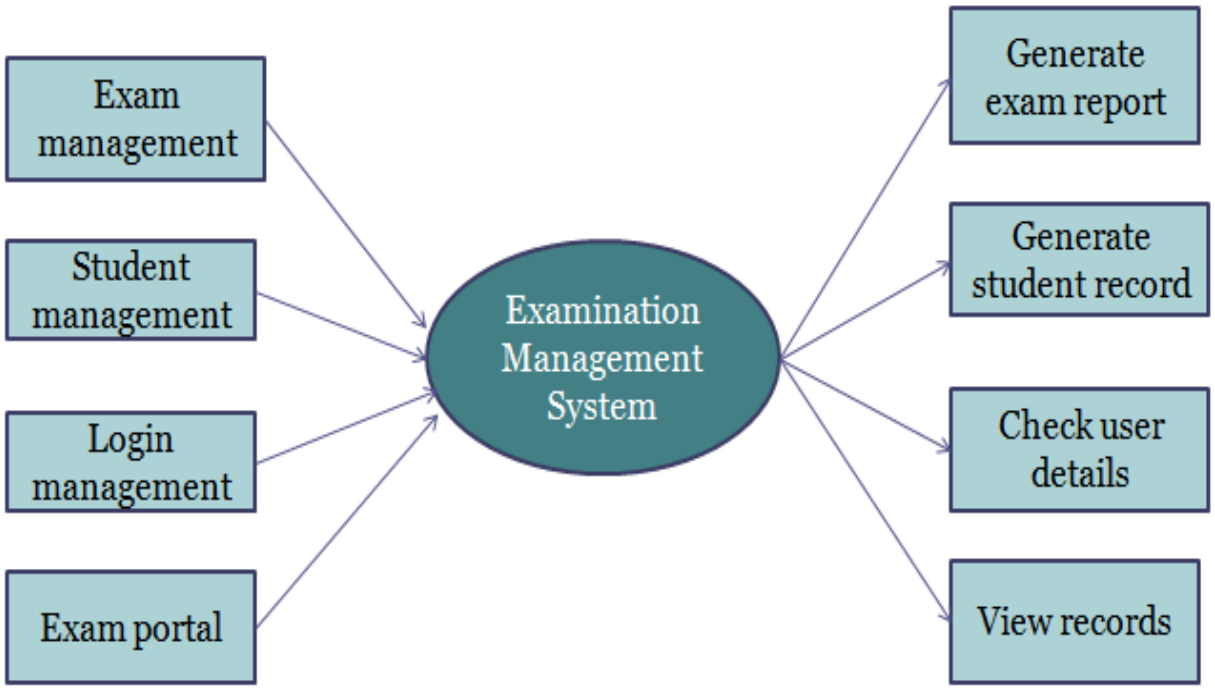
- **DFD 0 – LEVEL**

This diagram is a top-level data flow diagram. It only contains one process that generalizes the function of entire system in relationship to outside entities

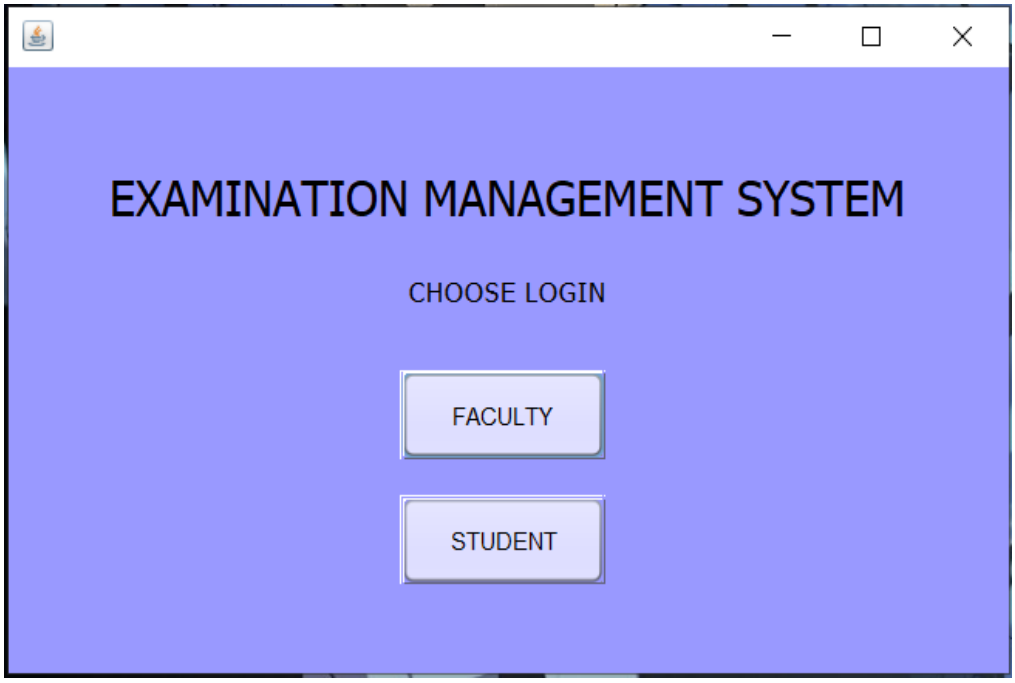


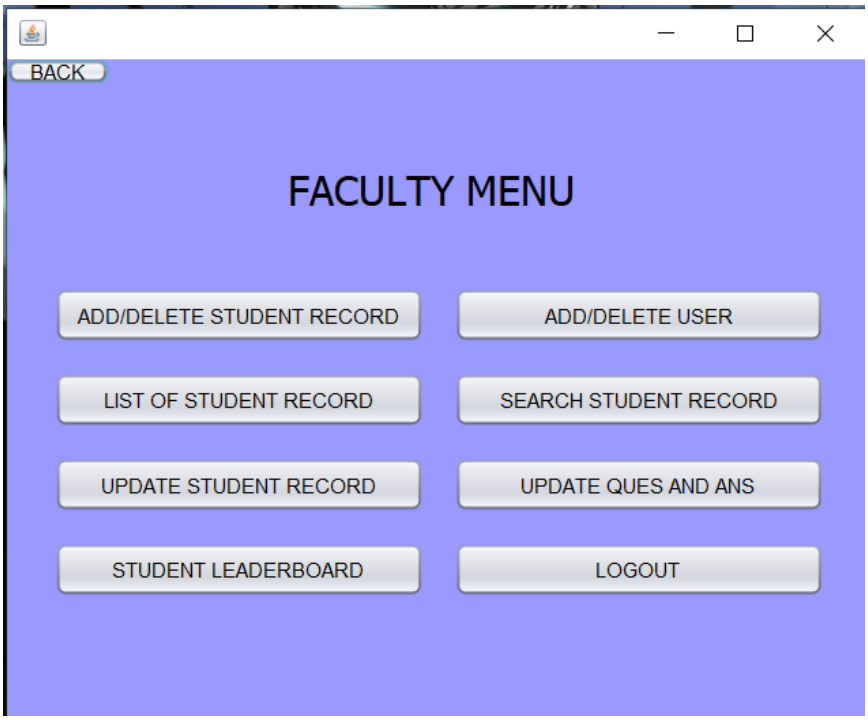
DFD LEVEL-1

A level 1 data flow diagram is more detailed level than 0 level data flow diagram but not as detailed as level 2 data flow diagram.

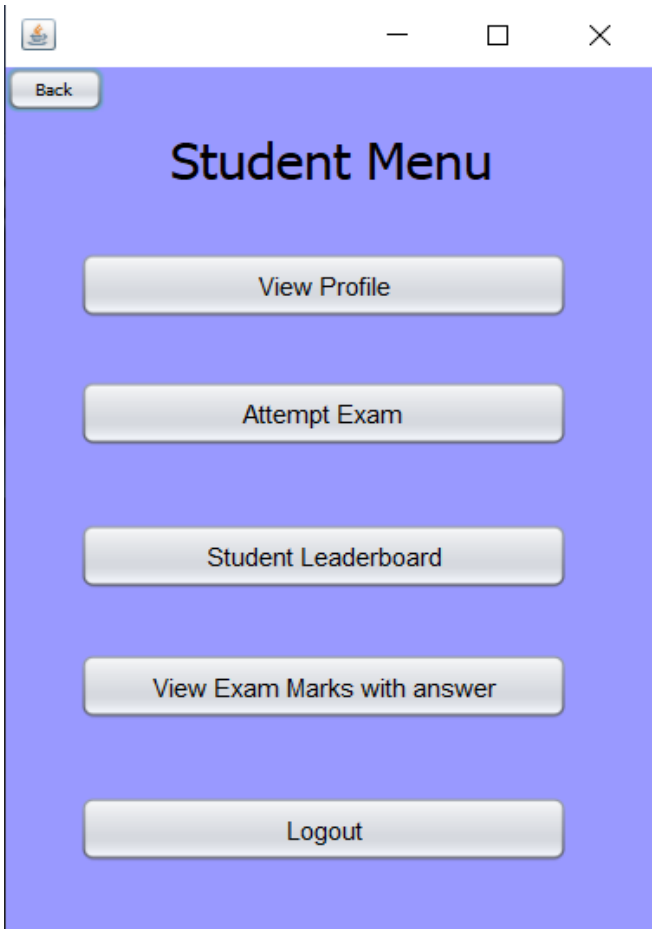


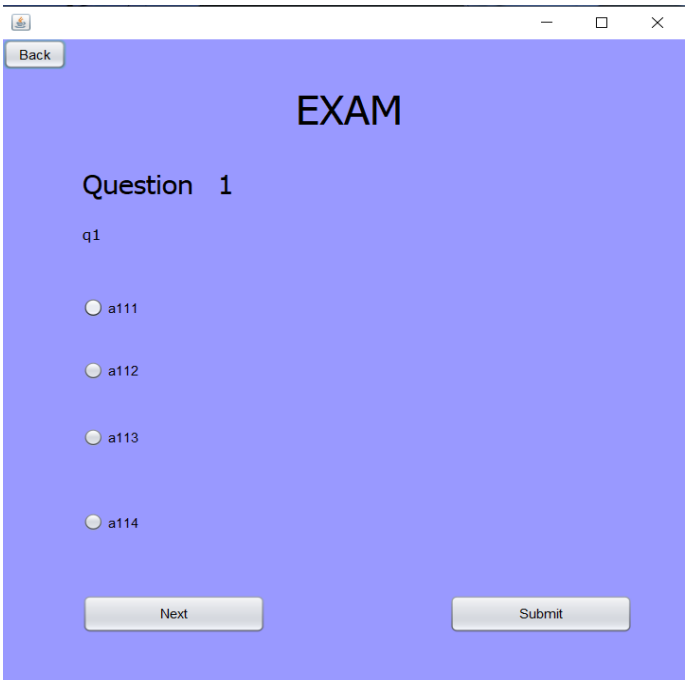
3.4 Interface Design

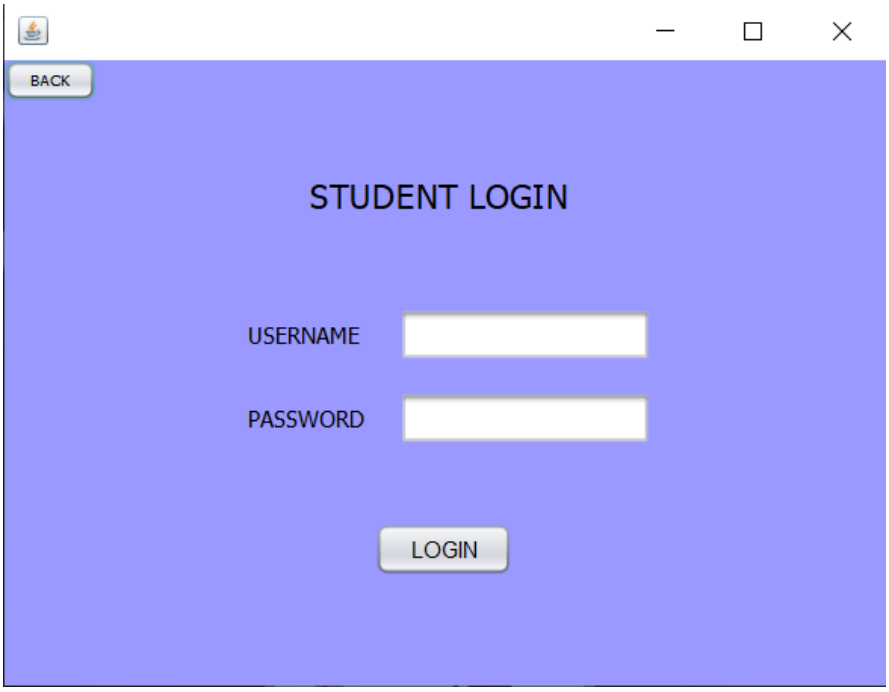


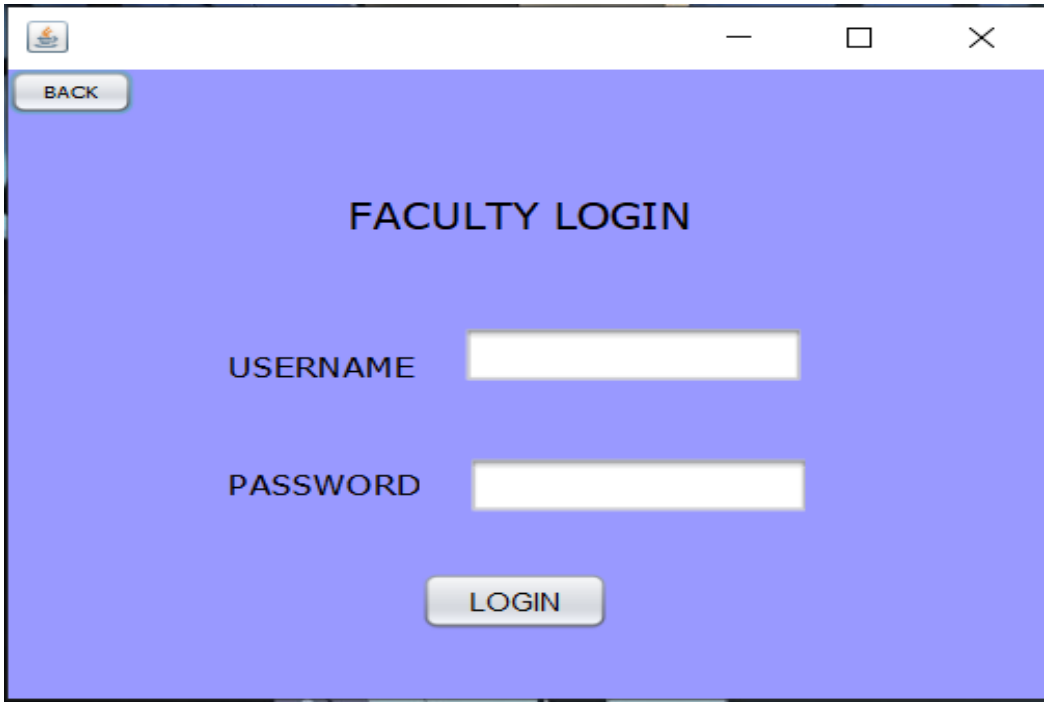



Back
ADD/DELETE USER
For adding a user fill both the username and password
for deletetion only username is necessary
USERNAME
PASSWORD
ADD
DELETE

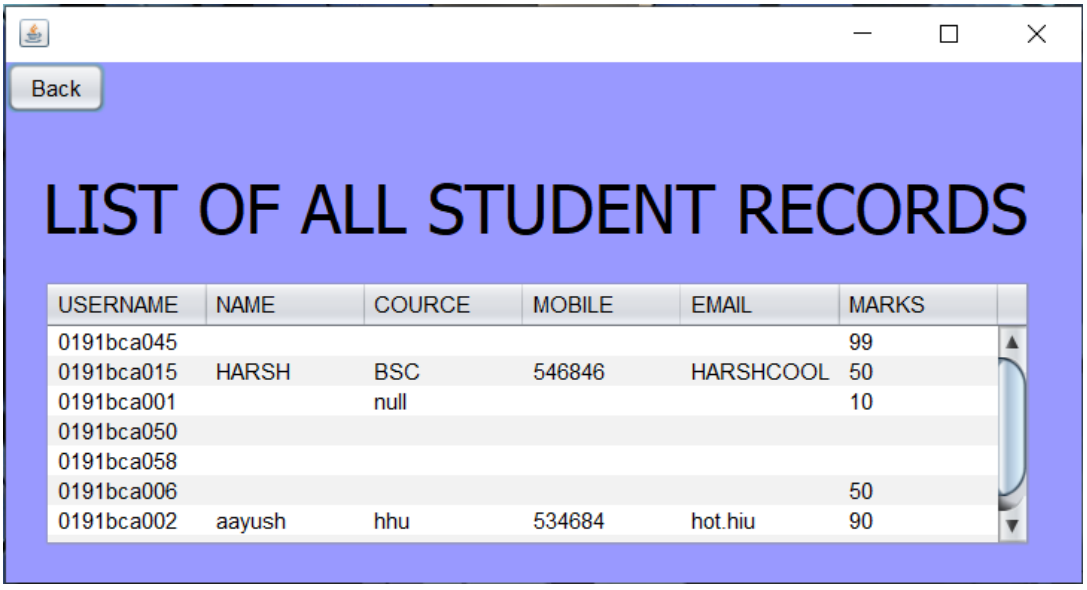

Back
Student Menu
View Profile
Attempt Exam
Student Leaderboard
View Exam Marks with answer
Logout

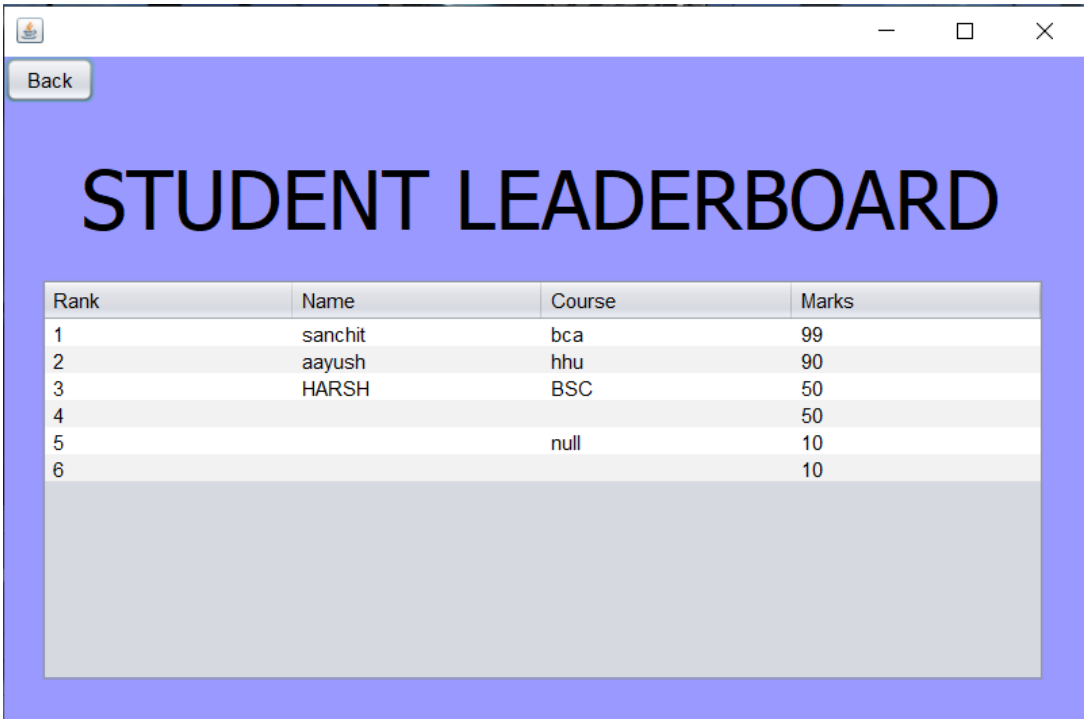

Back
EXAM
Question 1
q1
a111
a112
a113
a114
Next
Submit

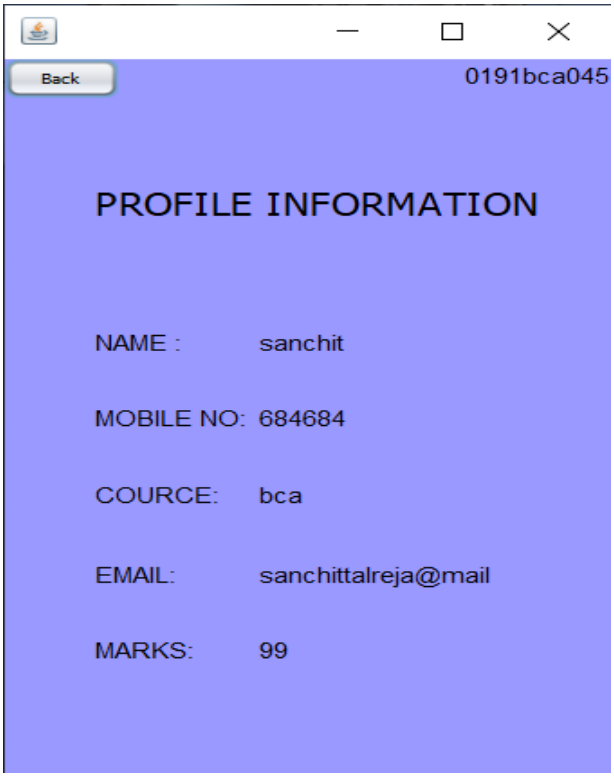

BACK
STUDENT LOGIN
USERNAME
PASSWORD
LOGIN


BACK
FACULTY LOGIN
USERNAME
PASSWORD
LOGIN

3.5 Output Design






Back
0191bca045
PROFILE INFORMATION
NAME : sanchit
MOBILE NO: 684684
COURCE: bca
EMAIL: sanchittalreja@mail
MARKS: 99

CHAPTER 4

TESTING AND IMPLEMENTATION

4.1 TESTING METHODOLOGY

UNIT TESTS

It is basic testing. It has well-defined scope in this we focus on functionality of small units. There is the interaction of the code with memory only and no interaction with network, database or file systems.

INTEGRATION TESTS

It is another testing technique. It involves testing of the modules which databases and file systems. They reveal out the issues with network modules or database and between small units of codes.

4.2 TESTING METHODOLOGY APPLIED

We have used integration testing as we have used database also in our project.

4.3.1 Test Cases Table

Test Cases	Sample Input	Sample Output	Interpretations
1.	Our project requires all credentials to be filled before adding and deleting any user data.	Login unsuccessful	Fill all credentials
2.	We cannot add two or more user with same user id.	Id with same id no cannot be added	User id already present
3.	The user id and password should match from the database if anyone wants to login through his/her id. If user id or password did not match the database the system will not allow the user to login.	Login unsuccessful	System does not allow to login
4.	The user cannot attempt the exam more the once.		Exam already attempted
5.	The data must be present in the database in order to delete any particular record.	Cannot be able to delete account	User not present
6.	The user id and password both should match from the database in order		Credentials not matched

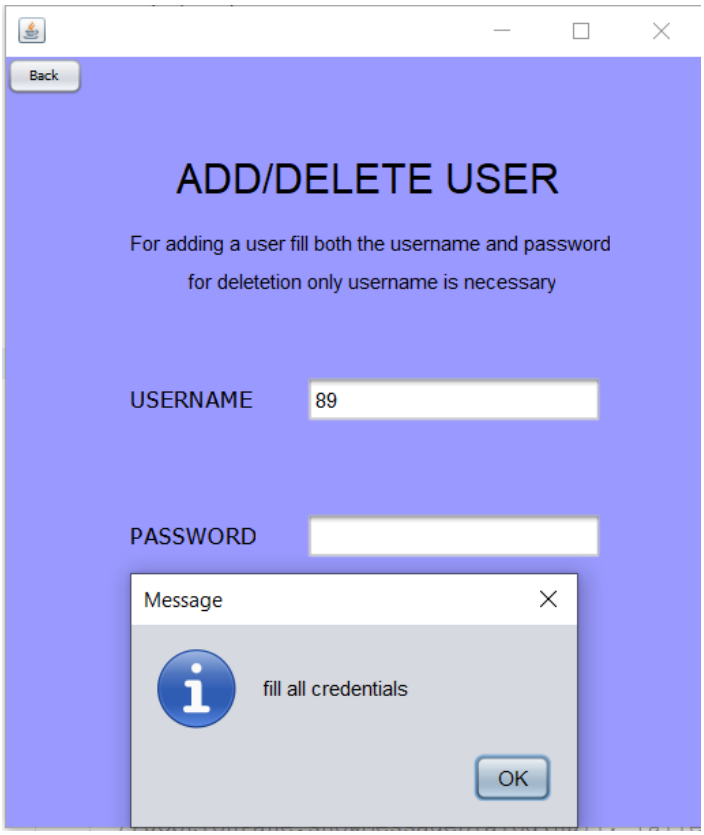
7.	In order to “view exam marks with answer” the student must attempt the exam first.	Cannot view marks	Attempt your exam first.
8	If the admin wants to update any student record then the student record must be present in the database.		User not found

4.3.2 CHARACTERISTICS OF TEST CASES

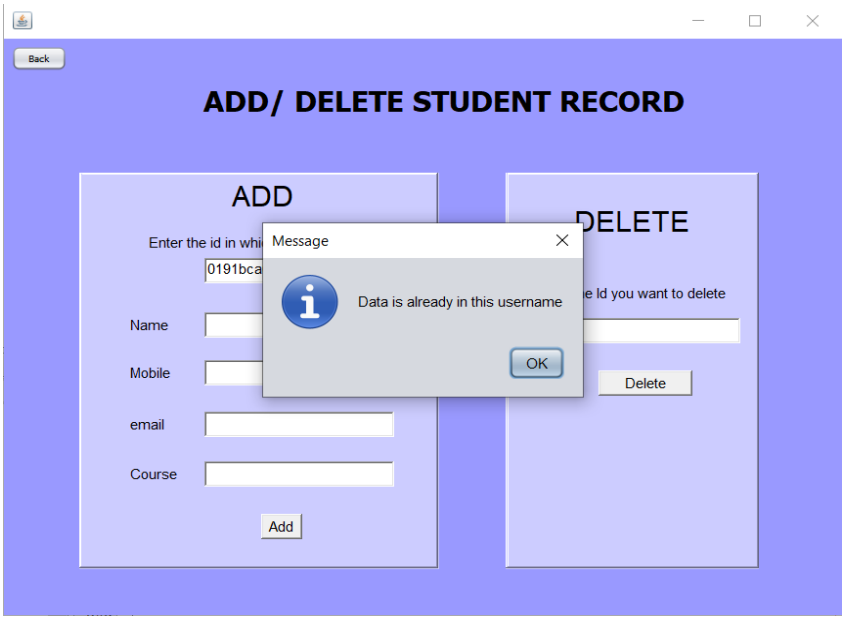
- It is accurate.
- It is economical.
- It is used to perform the test over and test.

4.3.3 TEST CASES SCREENSHOT

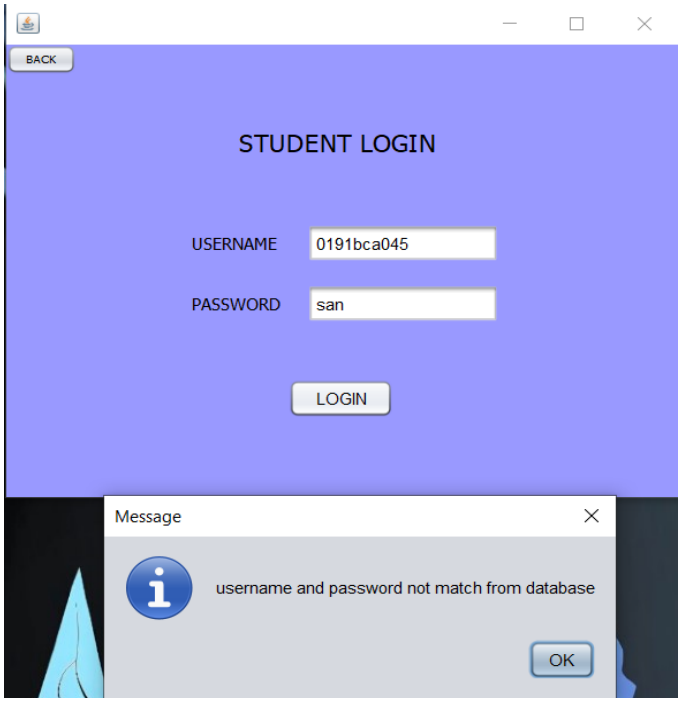
1) Our project requires all credentials to be filled before adding and deleting any user data.



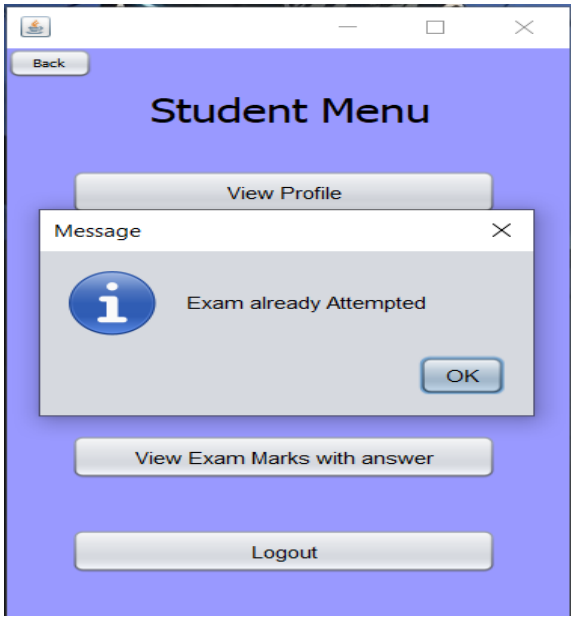
2) We cannot add two or more user with same user id.



3) The user id and password should match from the database if anyone wants to login through his/her id. If user id or password did not match the database the system will not allow the user to login.

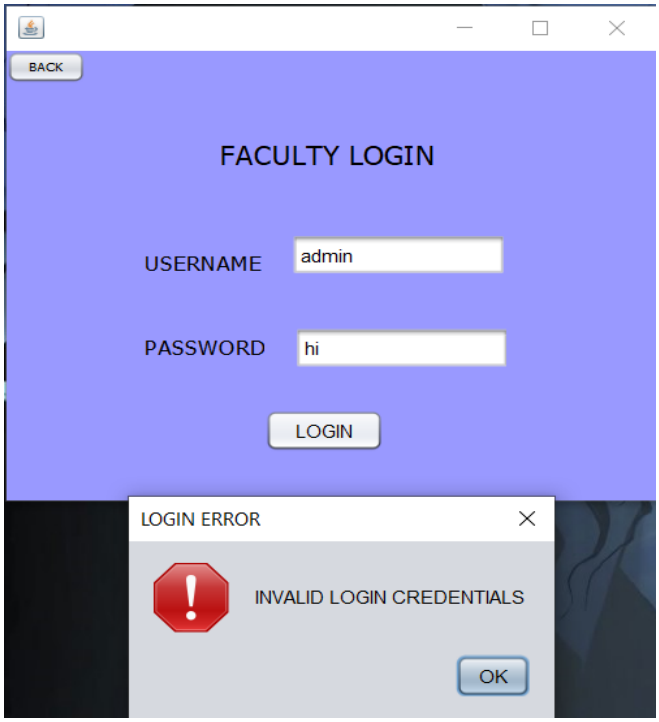


4) The user cannot attempt the exam more the once.

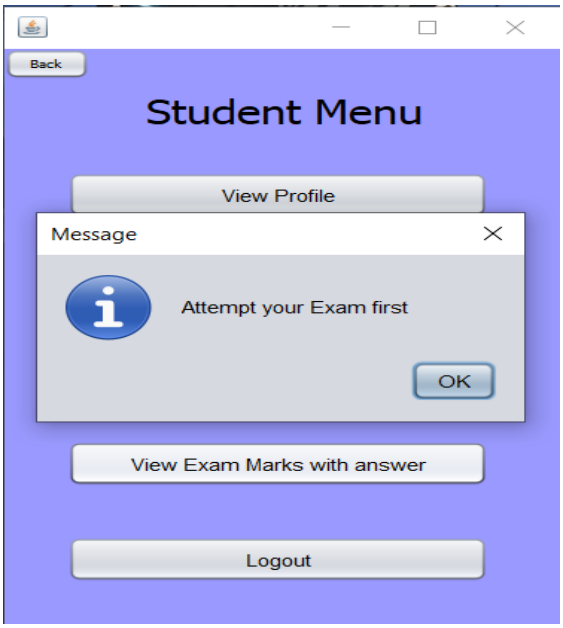


5) The data must be present in the database in order to delete any particular record.

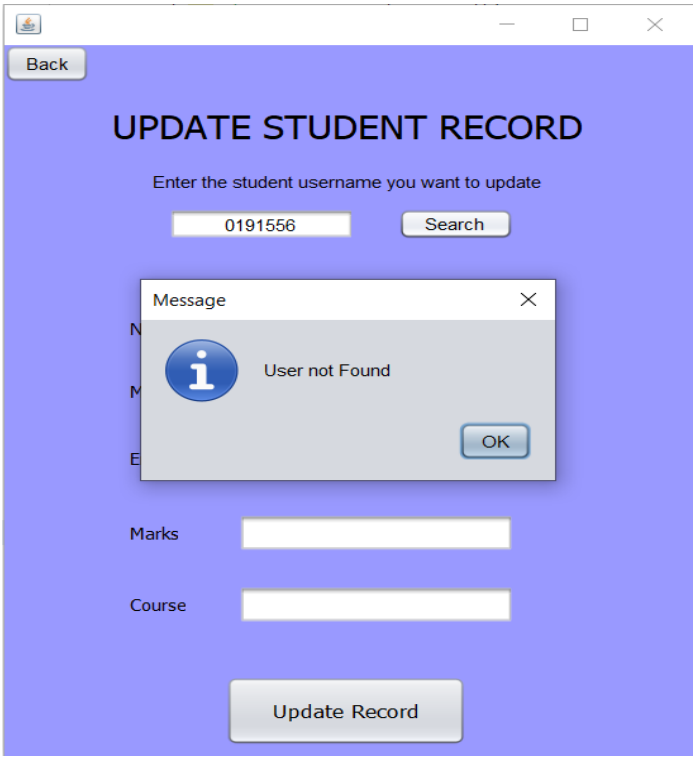
6) The user id and password both should match from the database in order



7) In order to “view exam marks with answer” the student must attempt the exam first.



8) If the admin wants to update any student record then the student record must be present in the database.



4.4 Test Data

Test data is exactly the input given to a software program. It represents data that affects or is affected by the implementation of the specific module. Some data may be used for positive testing, typically to check that a given set of input to a given function produces a predicted result. Other data may be used for negative testing to test the capacity of the program to handle unusual, extreme, exceptional, or unexpected input.

4.5 GAP ANALYSIS

GAP ANALYSIS refers to the process through which company compares its actual performance with its expected performance to determine whether it is meeting the expectations and using its resources effectively.

4.6 REWORK/RETEST

No rework or retests were required. All the outputs were as expected.

4.7 HARDWARE & SOFTWARE REQUIREMENT

4.7.1 Hardware Requirement

- Processor - Intel core i3
- Clock speed - 3.5 GHZ
- System bus - 64 bits
- RAM - 4GB of RAM
- HDD - 256 gb or more.
- Monitor - AOC
- Keyboard - 108 keys

4.7.2 Software Requirements

- OS - MS Windows 8.1,10
- IDE - NETBEANS
- DATABASE - SQL

CHAPTER 5

CONCLUSION

5.1 CONCLUSION

"As we all know that the technology is increasing day by day, very fast, we have to use these technologies to the best."

Our system provides various services like easy access to users, efficient data management, and clear productivity also it is less time consuming etc.

Some of them are:

- It provides a friendly graphical user interface which results to be more efficient when compared to the existing system.
- It effectively overcomes the delay in communications.
- Updating of information becomes so easier.
- System security, data security are the striking features.
- Reliability increases.
- The System has adequate scope for modification in future if it is necessary.

5.2 LIMITATIONS

"Anything which has benefits also has its disadvantages or limitations at the same time.**"**

Although we have put our best efforts to make software flexible, easy to operate but limitations cannot be ruled even by us.

Some of our project's limitations are:

- Since our system is not online so the user has to approach directly to the admin.
- To extend the software we have to make changes in the whole software.
- A better frame work can be included in the software which can have advanced facilities.

5.3 FUTURE SCOPE FOR MODIFICATION

Up gradation is required time to time in any software. In a brief, it can be summarized that the future scope of the project remains around maintaining the information.

- To make it available online.
- Introduce attendance module.
- Introduce proctored examination module.
- Introduce A.I chat bots (in order to fix problems during examination).
- Introduce anti cheat engine (this won't allow you to operate anything other software during examination).

Therefore mentioned points are the scopes which can be done to increase the applicability and the usage of the work product.

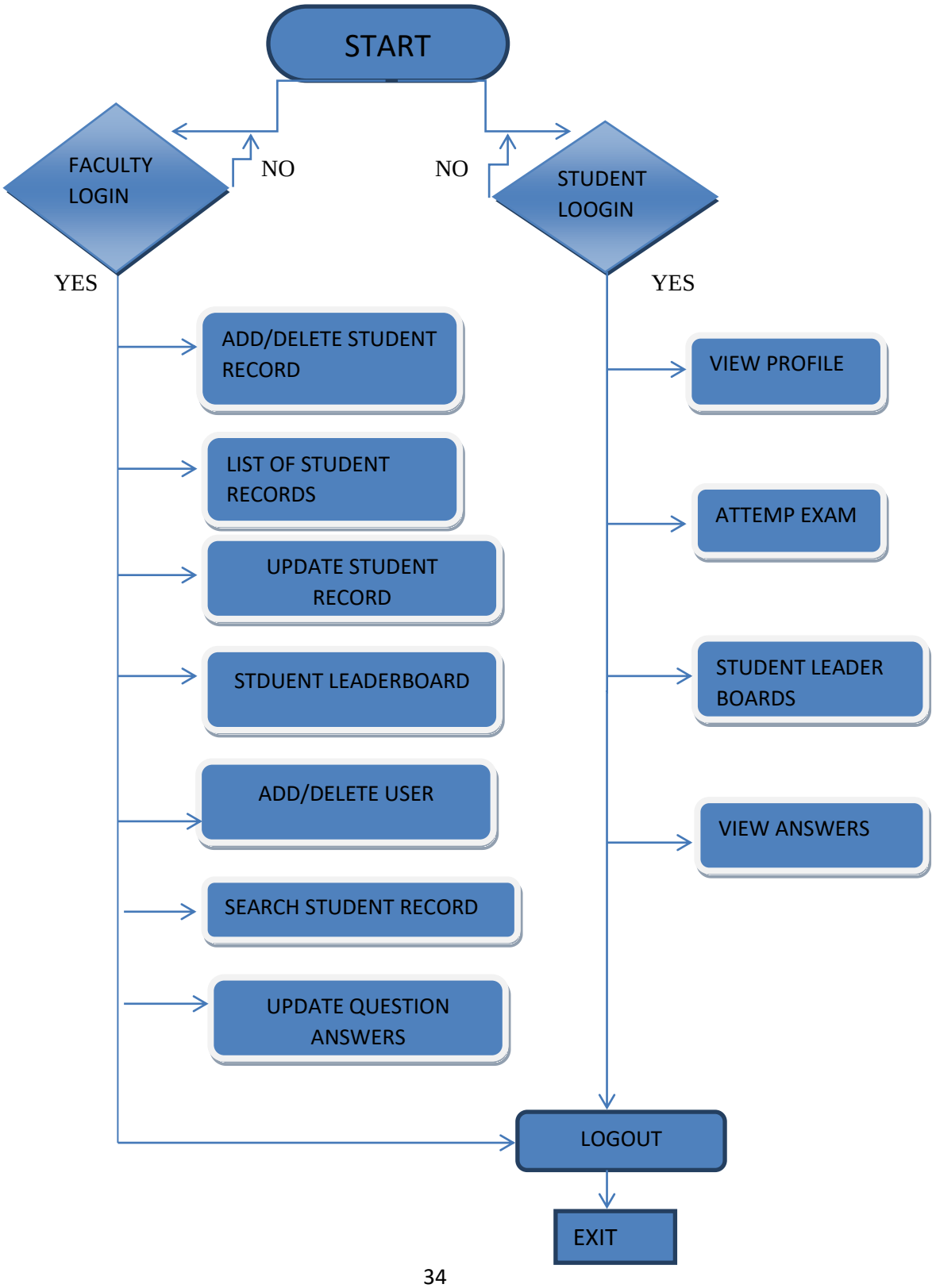
We have left all the options open so that if there are any other future requirements in the system by the user for the scope of the system then it is possible to implement them.

5.4 REFERENCES/BIBLIOGRAPHY

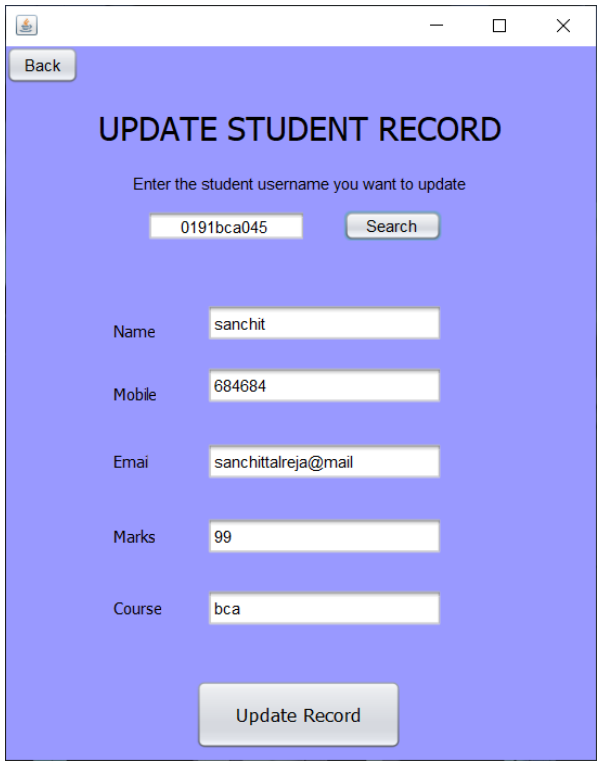
- Tutorials point
- www.wikipedia.com
- www.google.com
- The basics of java programming

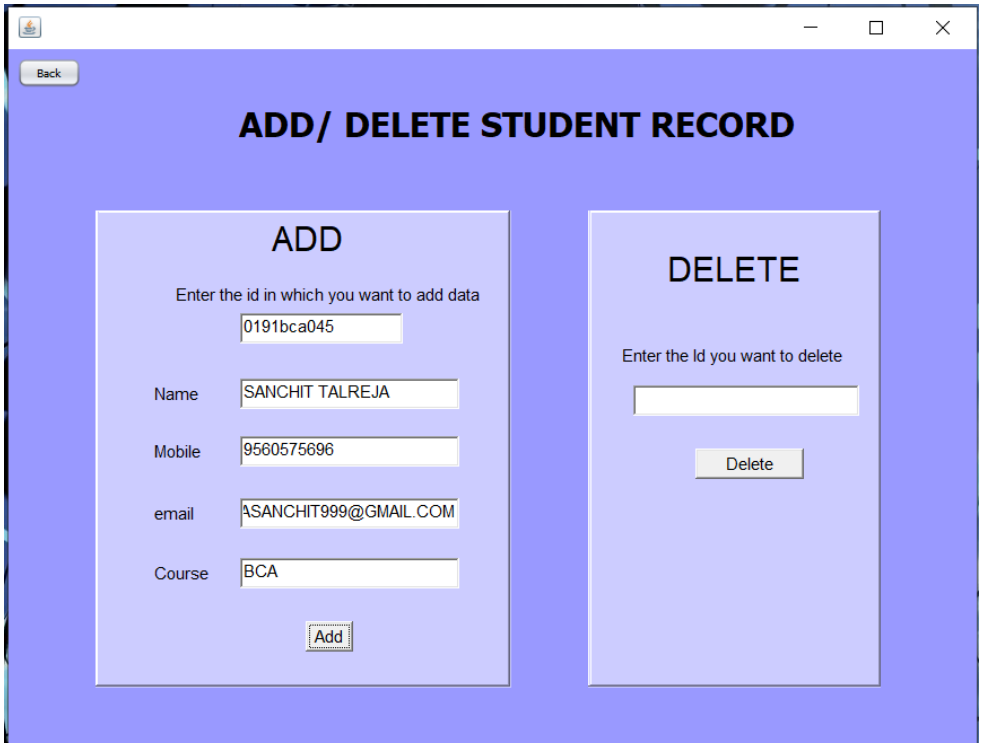
ANNEXURES

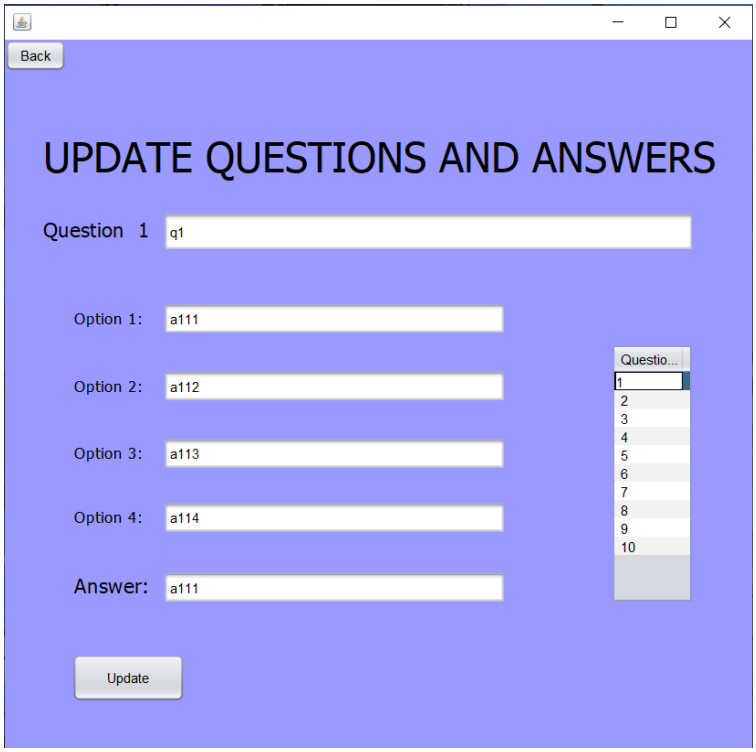
A-1 Menu Flow Diagram



A-2 Sample Input



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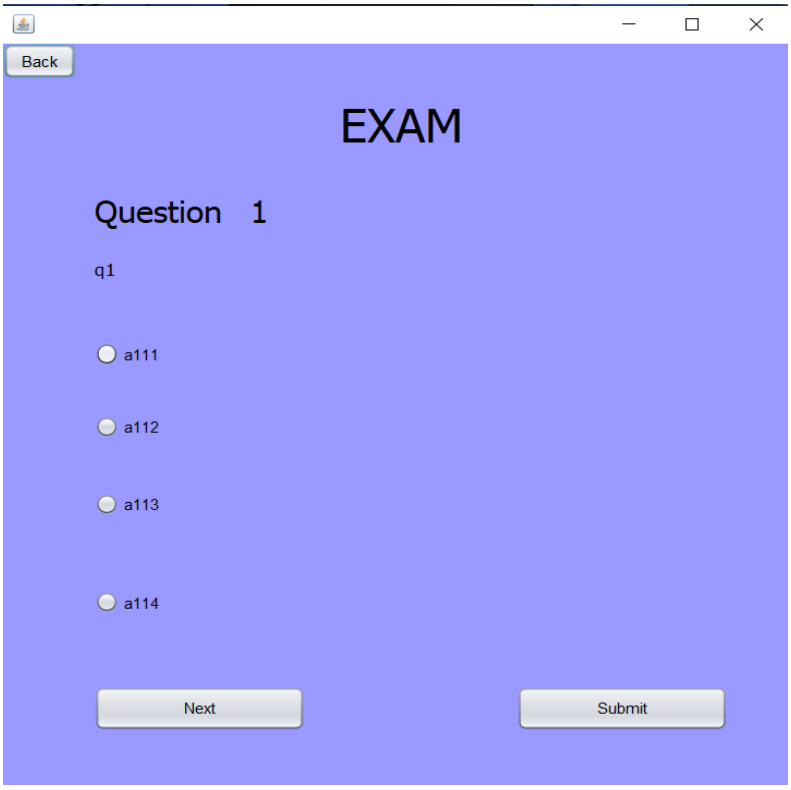
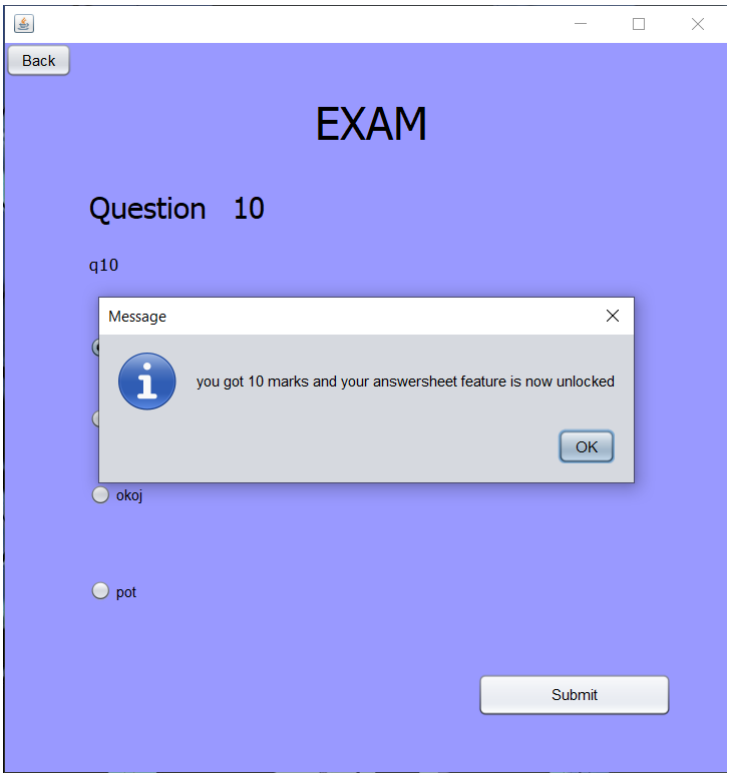
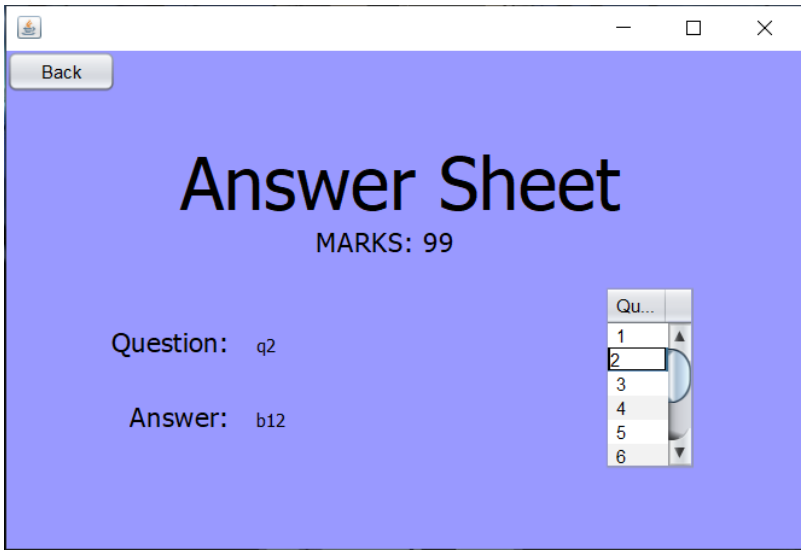
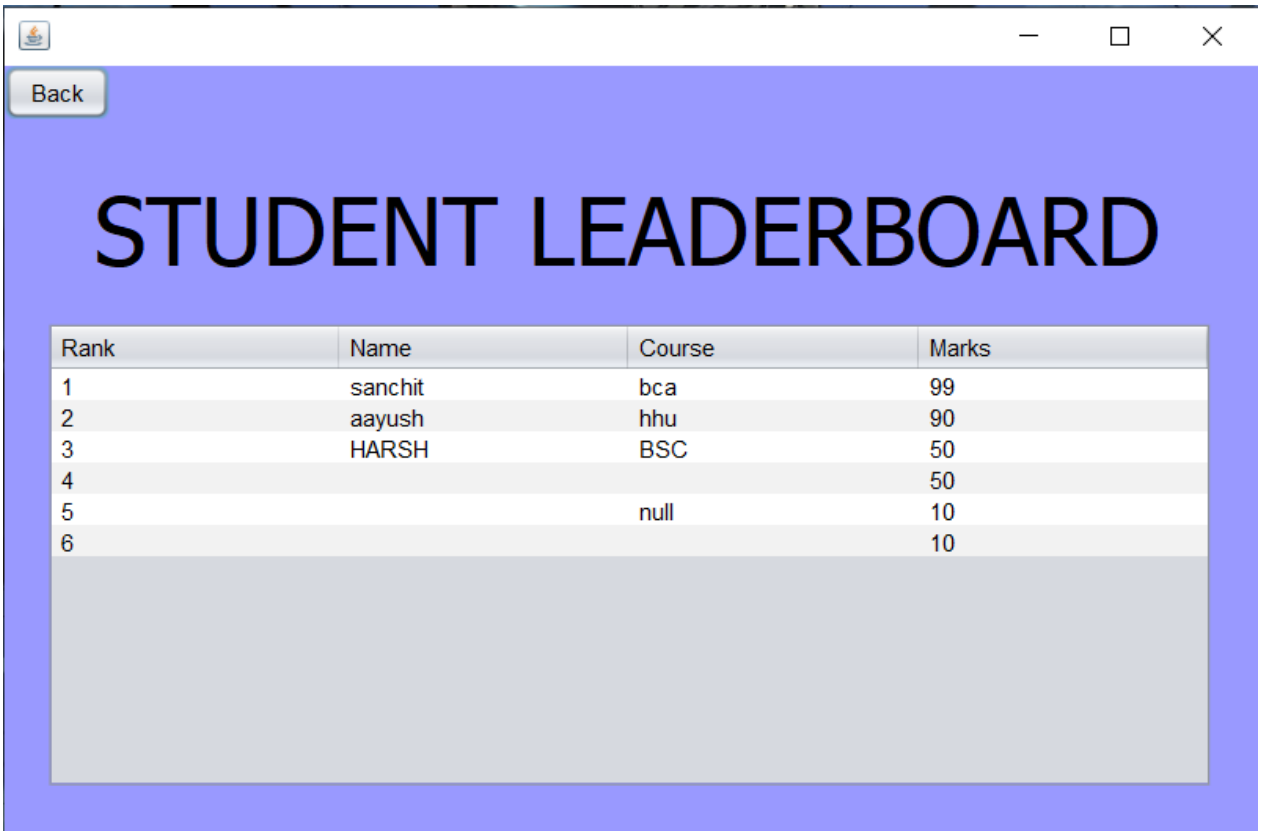
UPDATE QUESTIONS AND ANSWERS
Question 1
q1
Option 1:
a111
Option 2:
a112
Option 3:
a113
Option 4:
a114
Answer:
a111
Update
Questio...
1
2
3
4
5
6
7
8
9
10


Back
EXAM
Question 1
q1
a111
a112
a113
a114
Next
Submit

A-3 Sample Output



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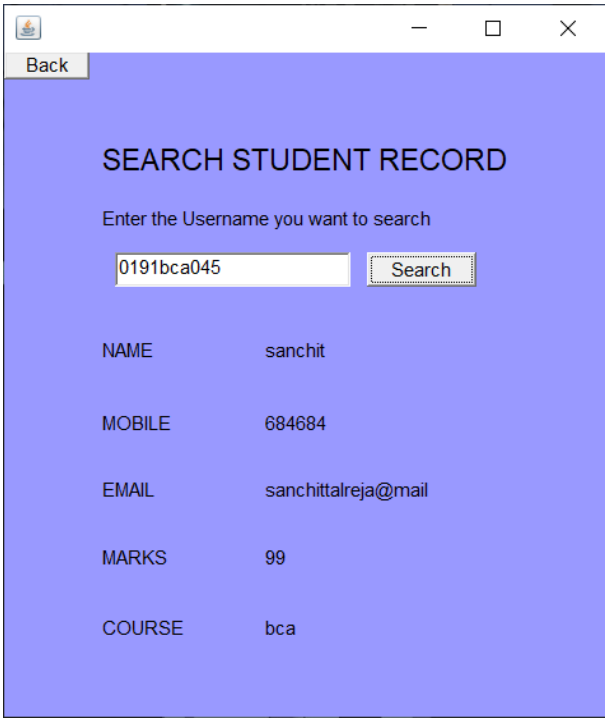
STUDENT LEADERBOARD
Rank
Name
Course
Marks
1
sanchit
bca
99
2
aayush
hhu
90
3
HARSH
BSC
50
4
50
5
null
10
6
10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COURSE
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A-4 Program Code

A-5 Mentor Feedback Report