



DEPT. Of Computer Science Engineering

SRM IST, Kattankulathur – 603 203

**18CSC206J - Software Engineering and Project
Management**

LABORATORY MANUAL

SEMESTER IV

SUBMITTED BY:

Register No: RA1911029010023

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Branch: CSE-CN

Section: P1



**SRM INSTITUTE OF SCIENCE AND TECHNOLOGY
KATTANKULATHUR 603203**

Register No. RA1911029010023

BONAFIDE CERTIFICATE

**Certified to be the bonafide record of the work done by ANUBHAV MISHRA
of IV Semester, Second Year B. Tech Degree course in SRM Institute of Science and
Technology of Computer Science & Engineering Department in the 18CSC206J –
SOFTWARE ENGINEERING AND PROJECT MANAGEMENT Laboratory during
the academic year 2020-2021.**

LAB-IN CHARGE

HOD/CSE

Submitted for the university examination held on June 2021.

**EXTERNAL EXAMINER
EXAMINER**

INTERNAL

SRM INSTITUTE OF SCIENCE AND TECHNOLOGY

FACULTY OF ENGINEERING AND TECHNOLOGY

18CSC206J - Software Engineering and Project Management Lab

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Course Code: 18CSC206J

Course Name: Software Engineering and Project Management

| | |
|------------------------------|---|
| Experiment No | 1a |
| Title of Experiment | To identify the Software Project |
| Name of the candidate | Anubhav Mishra |
| Team Members | Adithya Menon, Abhay Kumar Patel |
| Register Number | RA1911029010023 RA1911029010024 RA1911029010025 |
| Date of Experiment | 27-01-2021 |

Mark Split Up

| S.No | Description | Maximum Mark | Mark Obtained |
|-------------|---------------------|---------------------|----------------------|
| 1 | Presentation | 5 | |
| 2 | Project Description | 5 | |

| | | |
|--------------|-----------|--|
| Total | 10 | |
|--------------|-----------|--|

Staff Signature with date

Aim

To Frame a project team, analyze and identify a Software project

Team Members:

| Sl No | Register No | Name | Role |
|--------------|--------------------|-------------------|---------------|
| 1 | RA1911029010024 | Abhay Kumar Patel | Lead |
| 2 | RA1911029010023 | Anubhav Mishra | Member |
| 3 | RA1911029010025 | Adithya Menon | Member |

Project Title: Student Report Card Management System

Project Description

Our Student Report Management System includes facilities of registration, search, display, modification and deletion of student information about their marks, roll no. and their names. This software searches the student information on the basis of roll number which is stored in record. Using this software will be really time efficient, faster and easy as well. By incorporating multiple functions and classes we have managed to provide the users with plenty ways to manipulate the student records in a very simple yet, effective way.

Result:

Thus, the project team formed and the project is described



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Course Code: 18CSC206J

Course Name: Software Engineering and Project Management

| | |
|--------------------------------|---|
| Experiment No | 1b |
| Title of Experiment | Create Business Case, Arrive at a Problem Statement |
| Name of the candidates: | Anubhav Mishra |
| Team Members | Abhay Kumar Patel, Adithya Menon |
| Register Number | RA1911029010023 RA1911029010024 RA1911029010025 |
| Date of Experiment | 03-02-2021 |

Mark Split Up

| S.No | Description | Maximum Mark | Mark Obtained |
|--------------|--------------------|---------------------|----------------------|
| 1 | Presentation | 5 | |
| 2 | Business Case | 5 | |
| Total | | 10 | |

Staff Signature with date

Aim:

To create a business case and Arrive at a Problem Statement for the “Student Report Card Management System”.

Business Case :

| | |
|---------------------|--|
| DATE | 03-02-2021 |
| Submitted By | Anubhav Mishra |
| Title | Student Report Card Management System. |

The Project

1. To register student.
2. For searching and displaying students information.
3. Modification and Deletion of students information including their marks, roll number and names.
4. Searching student information by using their registration number.

The History

1. MyStudentsProgress app is an example of application which is used for managing students reports.
2. It is in use since last 8+ years.
3. Its deployment type is web-based.

Limitations

1. Lack of proper communication as all team members lives at different places.
2. Limited support for development.
3. Lack of proper guidance.

Approach

1. Establishing proper communication between team members.
2. Listing out the requirements and then planning how to design.
3. Choosing the development environment.

Benefits

1. User friendly.
2. Separate record for toppers and failures.
3. No confusion of name while searching as we use registration based searching.
4. Data can be modified and deleted at will.

Result :

Thus the business case was prepared and the problem statement was arrived



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Course Code: 18CSC206J

Course Name: Software Engineering and Project Management

| | |
|------------------------------|--|
| Experiment No | 2 |
| Title of Experiment | Identification of Project Methodology and Stakeholder Description template |
| Name of the candidate | Anubhav Mishra |
| Team Members | Adithya Menon, Abhay Kumar Patel |
| Register Number | RA1911029010023, RA1911029010024, RA1911029010025 |
| Date of Experiment | 08/02/2021 |

Mark Split Up

| S.No | Description | Maximum Mark | Mark Obtained |
|--------------|----------------------------|--------------|---------------|
| 1 | Presentation | 5 | |
| 2 | Project Methodology | 2.5 | |
| 3 | Stakeholder Identification | 2.5 | |
| Total | | 10 | |

Staff Signature with date

Aim: To identify the appropriate Process Model for the project and prepare Stakeholder and User Description.

Team Members:

| Sl No | Register No | Name | Role |
|-------|-----------------|-------------------|--------|
| 1 | RA1911029010024 | ABHAY KUMAR PATEL | Lead |
| 2 | RA1911029010023 | ANUBHAV MISHRA | Member |
| 3 | RA1911029010025 | Adithya Menon | Member |

Project Title: STUDENT REPORT CARD MANAGEMENT SYSTEM

Incorporate Identification of Project Methodology and Stakeholder Description template

Table of Contents

1. *Executive Summary*
2. *Selection of Methodology*
 - 2.1. **Roles and Methods**
 - 2.2. **Agile Development and Testing(optional)**
3. *Stakeholder Management*
 - 3.1. **Identification of Stakeholders**
 - 3.2. **Interest and Influence matrix**
 - 3.3. **Communication Plan for Stakeholders**

Reference

1. Executive Summary

The word 'stakeholder' has assumed a prominent place in public and non-profit management theory and practice in the last 20 years, and especially in the last decade. The term refers to persons, groups or organizations that must somehow be taken into account by leaders, managers and front-line staff. Research and writing on the subject have both contributed to the rise in the use of the term and to knowledge about what it might mean in practice

2. Selection of Methodology

The methodology that we are using is **INCREMENTAL MODEL**

2.1.1. Roles and Methods

1. Requirement analysis: In the first phase of the incremental model, the product analysis expertise identifies the requirements. And the system functional requirements are understood by the requirement analysis team. To develop the software under the incremental model, this phase performs a crucial role.

2. Design & Development: In this phase of the Incremental model of SDLC, the design of the system functionality and the development method are finished with success. When software develops new practicality, the incremental model uses style and development phase.

3. Testing: In the incremental model, the testing phase checks the performance of each existing function as well as additional functionality. In the testing phase, the various methods are used to test the behaviour of each task.

4. Implementation: Implementation phase enables the coding phase of the development system. It involves the final coding that design in the designing and development phase and tests the functionality in the testing phase. After completion

of this phase, the number of the product working is enhanced and upgraded up to the final system product

3. Stakeholder Management

3.1. Identification of Stakeholders

| | | |
|-----------------------|-------------------|---------------------|
| Your boss | Shareholders | Government |
| Senior executives | Alliance partners | Trades associations |
| Your co-workers | Suppliers | The press |
| Your team | Lenders | Interest groups |
| Customers | Analysts | The public |
| Prospective customers | Future recruits | The community |
| Your family | Key contributors | Key advisors |

3.2 Interest and Influence matrix

Influence is very subjective. You might think a certain stakeholder has a high level of influence in an engagement, but in reality, they may actually not. Hence, identifying and gauging the interest and influence levels of stakeholders is critical for stakeholder prioritisation. Constructing the stakeholder map ensures that you have considered the full range of people and organisations that need to be included. Analysing stakeholders, grouping them based on their posture, and understanding their concerns will also help target your communications and engagement strategy.

| Interest | Influence |
|----------|-----------|
| High | High |
| Low | Low |
| Low | High |
| High | Low |

| | |
|---|--|
| <p>Low Interest, High Influence</p> <p>Keep them satisfied as they can be ‘defenders’</p> <p>Help them engage more</p> <p>These are candidates like Amy in the above grid. Usually, people with a low interest are disinterested parties. However, if they are persuaded to oppose, they may evolve into formidable opponents and deter change. Thus, it is important to keep them on the loop and well-informed, for example, through regular meetings.</p> | <p>High Interest, High Influence</p> <p>Engage them closely as they are key ‘drivers’</p> <p>These are candidates like John in the above grid. These people are both, significantly impacted by change and most able act on it. They may either, support or oppose change. It is particularly important to engage these people in the change. Make sure that they understand what is going on. Get their buy-in and give them a sense of ownership in the outcomes.</p> |
| <p>Low Interest, Low Influence</p> <p>Low Priority as they are ‘spectators’</p> <p>These are candidates like Mike in the above grid. These are relatively unimportant people, but keeping in touch with them is a good idea, just in case their status changes.</p> | <p>High Interest, Low Influence</p> <p>Keep them informed as they can be ‘blockers’</p> <p>These are candidates like Sally in the above grid. These people can be difficult. It is easy to ignore them as they apparently cannot derail the change. However, if sufficiently upset, they may gain influence to resist to change. Do remember that minorities can be very powerful, especially if they manage to band together or enlist powerful allies.</p> |

| Stakeholder Name | Activity / Area / Phase | Interest | Influence | Priority (High / Medium/Low) |
|---------------------------------------|--|----------|-----------|------------------------------|
| Regional Head of Sales & Marketing | Help in publicity of the website in the specific region. | High | High | 1 |
| Finance Account Receivable consultant | Multiple Currency Payment | High | Low | 3 |

| | | | | |
|-------------|---|------|------|---|
| Co-workers | Helping creating the website | High | High | 1 |
| Your Family | Suggestions of the website in improve compatibility | Low | High | 2 |
| The public | Using the website in real time | Low | High | 2 |
| Suppliers | Deal with the market demand | High | High | 1 |

3.3 Communication Plan for Stakeholders

Establishing ground rules for effective stakeholder's communication will save time, remove obstacles and ultimately, finish the project on time and within budget. There are several communication methods you should implement when communicating with stakeholders in your company. All methods of communication described below have their upsides and downsides, so make sure you pick the right one depending on the message you are trying to send to your stakeholders.

Communication Plan:

- Schedule a meeting every week for discussion of any update
- Send out a newsletter
- Separate online "screen to screen" meetings
- Submission of Project summary report at the end of each month
- Schedule a conference call for emergency
- One time Lunch meetings every week

Example:

- Walk through of progress to High Interest and High Influence stakeholders
- Providing single page dashboard and communicate via meetings
- Weekly report for High Interest and Low Influence

Result: Thus, the Project Methodology was identified stakeholders were described.



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Course Code: 18CSC206J

Course Name: Software Engineering and Project Management

| | |
|------------------------------|---|
| Experiment No | 3 |
| Title of Experiment | Identify/collect the Requirements and document them as Infrastructure Requirements, Functional Requirements and Non-Functional Requirements |
| Name of the candidate | Anubhav Mishra |
| Team Members | Adithya Menon, Abhay Kumar Patel |
| Register Number | RA1911029010023 RA1911029010024 RA1911029010025 |
| Date of Experiment | 17-03-2021 |

Mark Split Up

| S.No | Description | Maximum Mark | Mark Obtained |
|-------------|--------------------|---------------------|----------------------|
|-------------|--------------------|---------------------|----------------------|

| | | | |
|--------------|-----------------------|-----------|--|
| 1 | Presentation | 5 | |
| 2 | Requirements document | 5 | |
| Total | | 10 | |

Staff Signature with date

Aim

To Identify and document the Requirements of a Software system

Team Members:

| Sl No | Register No | Name | Role |
|----------|-----------------|-------------------|---------------|
| 1 | RA1911029010024 | Abhay Kumar Patel | Lead |
| 2 | RA1911029010023 | Anubhav Mishra | Member |
| 3 | RA1911029010025 | Adithya Menon | Member |

Requirements

1. Executive Summary

In this project we will be creating a software for storing the details of students, which will be stored according to their registration number. Different sections will be provided for the toppers and failures. So, that teacher can focus properly on different students.

2. Project Scope

Expand on the scope definition and outline the major activities required to successfully complete the project (for example, develop module ABC, develop requirements document, etc.). Out of scope activities are identified to reduce ambiguity.

2.1. In Scope

We will be creating a database for storing the students record from where students grade will be calculated.

We will be creating a usable and user friendly interface.

Webpage Interface and miscellaneous Coding for users

2.2. Out of Scope

Different columns will be provided for displaying failures and toppers.

3. Epics [Major Functions]

| Epic (#) | Epic Description |
|----------|-------------------------------------|
| E1 | Login system. |
| E2 | Data entry section. |
| E3 | Searching section will be provided. |

4.Requirements

4.1 Functional Requirements

Functional Requirements can also be expressed in the form of “user story” which is the smallest unit of work in an agile framework. It’s an end goal, not a feature, expressed from the software user’s perspective.

| Requirement (#) | Requirement Specification | Department | Name of Business User | Status |
|-----------------|---|------------|-----------------------|--------|
| E1FR1 | The system should allow users to enter, delete, modify and search student records. | | Customer. | |
| E1FR2 | The system should have options to display the records of the toppers and failures of the class. | | Customer. | |

| | | | | |
|-------|--|--|-----------|--|
| E1FR3 | The system should be integrated with a Database which consists of the student records. | | Customer. | |
| E1RF4 | The system must have a logic system to ensure the user's privacy security. | | Developer | |
| E1RF5 | Instructions must be provided in every screen. | | Customer. | |
| E1RF6 | Users must be provided with grade calculation option as well. | | Customer. | |

4.2 Non-Functional Requirements

| Requirement (#) | Category of NFR | Requirement Specification | Department | Name of Business User | Status |
|-----------------|-----------------|---|------------|-----------------------|--------|
| NFR1 | Performance | The interface of the webpages should be neat and to-the-point. | | Developer. | |
| NFR2 | Availability | The users should be given complete control over their student database. | | Customer. | |
| NFR3 | Availability | A navigation bar must be provided to easily travel through webpages. | | Customer. | |

| | | | | | |
|------|------------|---|--|-----------|--|
| NFR4 | Usability | A footer must be provided at the bottom of every page for the users to contact the respective developers for any queries | | Customer. | |
| NFR5 | Usability | The users should be given complete control over their student database. | | Customer | |
| NFR6 | Compliance | Error messages with clear highlight of the problem must be displayed every time the user makes a mistake while using the system | | Customer. | |

4.3 Infrastructure Requirements

| Requirement (#) | Requirement Specification | Department | Name of Business User / Project Team Member | Status |
|-----------------|--|------------|---|--------|
| IR1 | A web browser will be needed to view the website. | | Developer. | |
| IR2 | External CSS files will have to be linked in the web pages. | | Developer. | |
| IR3 | Java script and jQuery links will be needed to get access to bootstrap | | Developer. | |
| IR4 | An IDE will be required to edit the codes when modification is required. | | Developer. | |

| | | | | |
|--|--|--|--|--|
| | | | | |
|--|--|--|--|--|

1.1.

Result:

Thus, the requirements are identified, collected and documented.



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Course Code: 18CSC206J

Course Name: Software Engineering and Project Management

| | |
|------------------------------|---|
| Experiment No | 4 |
| Title of Experiment | Prepare Project Plan based on scope, Find Job roles and responsibilities, Calculate Project effort based on resources |
| Name of the candidate | Anubhav Mishra |
| Team Members | Adithya Menon, Abhay Kumar Patel |
| Register Number | RA1911029010023 RA1911029010024 RA1911029010025 |
| Date of Experiment | 24-02-2021 |

Mark Split Up

| S.No | Description | Maximum Mark | Mark Obtained |
|-------------|-----------------------|---------------------|----------------------|
| 1 | Presentation | 5 | |
| 2 | Requirements document | 5 | |

| | | |
|--------------|-----------|--|
| Total | 10 | |
|--------------|-----------|--|

Staff Signature with date

Aim

To Prepare Project Plan based on scope, Find Job roles and responsibilities, Calculate Project effort based on resources

Team Members:

| Sl No | Register No | Name | Role |
|--------------|--------------------|-------------------|---------------|
| 1 | RA1911029010024 | Abhay Kumar Patel | Lead |
| 2 | RA1911029010023 | Anubhav Mishra | Member |
| 3 | RA1911029010025 | Adithya Menon | Member |

Requirements

1. Project Management Plan

| Focus Area | Details |
|------------------------|---|
| Integration Management | Abhay Kumar Patel will be responsible for database. Anubhav Mishra will be responsible for page layout. Aditya Menon will be responsible for coding. |
| Scope Management | First we have to plan for database management then we have to look for the page layout after that we will be coding for the execution of required task. |
| Cost Management | Creating a database for the website to modify info for the report will need atleast 5 hours which will cost Rs200. Creating a usable and easy interfaced webpage will need 2 hours which will cost Rs100 |

| | |
|---------------------|---|
| | <p>Webpage Interface and miscellaneous Coding for users</p> <p>Will take 5 hours which will cost Rs200.</p> |
| Quality Management | <p>Java script and jQuery links will be needed to get access to bootstrap.</p> <p>A destination will be required in the user's system to store the files.</p> |
| Resource Management | <p>We need a system with 2Gb RAM 256Gb hard drive, intel core i5.</p> <p>An IDE will be required to edit the codes when modification is required.</p> <p>It will need a local web server to run the system files since the source code includes PHP language.</p> |
| Risk Management | <p>As we are doing this for first time so will be lacking the experience as what to do at a particular time.</p> <p>We will be facing the problem of advertisement as we don't have proper channel.</p> |

2. Estimation

2.1.Effort and Cost Estimation

| WBS | Activity | Activity Description | Sub-Task & Description | Effort (in hours) | Cost in INR |
|----------|---------------------------------|---|--|-------------------|-------------|
| Database | Creating and adding Information | Creating a database for the website to modify info for the report | Installing local server; creating tables for login; student details; percentage of marks; save the database; | 5 | 200 |

| | | | | | |
|----------------|------------------------------------|--|---|---|-----|
| Webpage layout | Webpage Creation | Creating a usable and easy interfaced webpage | Webpage divisions placement; background design; implementing design for various medias | 2 | 100 |
| coding | Interface and miscellaneous Coding | Webpage Interface and miscellaneous Coding for users | installing IDE; creating stylesheets; linking database to code; adding bootstrap links; | 5 | 200 |

| Effort (hr) | Cost (INR) |
|-------------|------------|
| 1 | 500 |

2.2. Infrastructure/Resource Cost

| Infrastructure Requirement | Qty | Cost per qty & per Item |
|--|-----|-------------------------|
| <ul style="list-style-type: none"> • System will need its own database with multiple tables for storage of records. | • 1 | • Rs 111 |
| <ul style="list-style-type: none"> • It will need a local web server to run the system files since the source code includes PHP language. | • 1 | • Rs 245 |
| <ul style="list-style-type: none"> • A destination will be required in the user's system to store the files. | • 1 | • Rs 354 |
| <ul style="list-style-type: none"> • An IDE will be required to edit the codes when modification is required. | • 1 | • Rs 499 |
| <ul style="list-style-type: none"> • External CSS files will have to be linked in the web pages. | • 1 | • Rs 123 |
| <ul style="list-style-type: none"> • Java script and jQuery links will be needed to get access to bootstrap. | • 1 | • Rs 321 |
| <ul style="list-style-type: none"> • A web browser will be needed to view the website. | • 1 | • Rs 699 |
| <ul style="list-style-type: none"> • Minimum required RAM size is 2gb. | • 1 | • Rs 420 |

3.Maintenance and Support Cost

| Category | Details | Qty | Cost per qty per annum | Cost per item |
|-----------------|--|-----|------------------------|---------------|
| People | Network, System, Middleware and Data Base admin Developer , Support Consultant | 3 | 200 | 600 |
| License | Operating System Database Middleware IDE | 10 | 100 | 1,000 |
| Infrastructures | Server, Storage and Network | 20 | 200 | 4000 |

4.Project Team Formation

4.1. Identification Team members

| Name | Role | Responsibilities |
|--|--|--|
| Anubhav Mishra; Abhay Patel; Aditya Menon | Key Business User (Product Owner) | Provide clear business and user requirements |
| Abhay Patel | Project Manager | Manage the project |
| Abhay Patel | Business Analyst | Discuss and Document Requirements |
| Abhay Patel | Technical Lead | Design the end-to-end website |
| Anubhav Mishra | UX Designer | Design the user experience |
| Anubhav Mishra | Frontend Developer | Develop user interface |
| Anubhav Mishra | Backend Developer | Design, Develop and Unit Test Services/API/DB |
| Aditya Menon | Cloud Architect | Design the cost effective, highly available and scalable architecture |
| Aditya Menon | Cloud Operations | Provision required Services |
| Aditya Menon | Tester | Define Test Cases and Perform Testing |

5.2.Responsibility Assignment Matrix

| RACI Matrix | Team Members | | | |
|-----------------------|-----------------------|-------------------------|-------------------------------|--------------------------|
| Activity | Name (BA) | Name (Developer) | Name (Project Manager) | Key Business User |
| | A | C/I | I | R |
| Database | Anubhav Mishra | Abhay Patel | Aditya Menon | Abhay Patel |
| Webpage layout | Anubhav Mishra | Abhay Patel | Aditya Menon | Anubhav Mishra |
| Coding | Anubhav Mishra | Abhay Patel | Aditya Menon | Aditya Menon |

| | |
|----------|--------------------|
| A | Accountable |
| R | Responsible |
| C | Consult |
| I | Inform |

Result:

Thus, the Project Plan was documented successfully.



DEPT. Of Computer Science Engineering
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Course Code: 18CSC206J

Course Name: Software Engineering and Project Management

| | |
|------------------------------|--|
| Experiment No | 5 |
| Title of Experiment | Prepare the Work, Breakdown Structure based on timelines, Risk Identification and Plan |
| Name of the candidate | Anubhav Mishra |
| Team Members | Adithya Menon, Abhay Kumar Patel |
| Register Number | RA1911029010023 RA1911029010024 RA1911029010025 |
| Date of Experiment | 3-03-2021 |

Mark Split Up

| S.No | Description | Maximum Mark | Mark Obtained |
|-------------|-----------------------------------|---------------------|----------------------|
| 1 | Presentation | 5 | |
| 2 | WBS, Risk Identification and Plan | 5 | |

| | | |
|--------------|-----------|--|
| Total | 10 | |
|--------------|-----------|--|

Staff Signature with date

Aim

To Prepare the Work, Breakdown Structure based on timelines, Risk Identification and Plan

Team Members:

| Sl No | Register No | Name | Role |
|--------------|--------------------|-------------------|---------------|
| 1 | RA1911029010024 | Abhay Kumar Patel | Lead |
| 2 | RA1911029010023 | Anubhav Mishra | Member |
| 3 | RA1911029010025 | Adithya Menon | Member |

Requirements

1. Executive Summary

Our team has started working on the project, Student Report Card Management System, from 1st March 2021 and it is expected to finish it by 30th April 2021. By the end of March, we will try to get the license to use the databases of other websites and also the license to host the website on the internet. By the first week of April, we will try to finish working on the UI and by the end of April, our aim is to complete the project and make it ready to launch in the market.

Due to the demand of school softwares in market our software will be successful. We will also try to update it according to need of customers and to be in market.

2. WBS With Project Schedule

| Module (#) | Activity (#) | Assignee(s) | Planned Start Date | Planned End Date | Actual Start Date | Actual End Date | Status |
|-------------------|---------------------------------|--------------------|---------------------------|-------------------------|--------------------------|------------------------|-------------------|
| Database | Creating and adding Information | Abhay Kumar Patel | 01/03/2021 | 29/04/2021 | 3/03/2021 | | On process |
| Webpage layout | Webpage Creation | Anubhav Mishra | 01/04/2021 | 29/04/2021 | | | Yet to be started |

| | | | | | | | |
|--------|------------------------------------|--------------|------------|------------|--|--|-------------------|
| coding | Interface and miscellaneous Coding | Aditya Menon | 01/04/2021 | 29/04/2021 | | | Yet to be started |
|--------|------------------------------------|--------------|------------|------------|--|--|-------------------|

3. Risk Identification

- **Strengths:**
 1. User friendly
 2. Password Protected
 3. Very responsive and interactive UI
 4. Properly organized.
 5. Register number based webpage.
- **Weakness:**
 1. Would require a server to work.
 2. Not compatible for all screen sizes
- **Opportunities:**
 1. To expand the use of DBMS.
 2. Modernize the record organizing system
 3. Popularize secure organization.
- **Threats:**
 1. Server attacks and other cyber attacks.
 2. Site overload threats.
 3. Malware in system might affect the site

3.1. List (Describe) Register

<Issue can potentially occur in future and list all risks identified >

| Risk ID (#) | Risk Description | Impact Description |
|-------------|--|---|
| R01 | Unable to keep up with market updation will reduce the use of this website | This may lead to heavy loss and eventually shutting down of the website |
| R02 | Lack of experience | We may not be able to start with great momentum. |

<Incorporate WBS and Risk management plan template>

3.2. Managing Risk

<Risk should be categorized So action can be derived to address these risks could become an issue in future>

| Risk ID (#) | Status [Open / Closed] | Risk Appetite [Accept/ Mitigate/ Transfer/Avoid] | Action | Action Owner | Target Date | Remarks |
|-------------|------------------------|--|---|----------------|-------------|------------|
| R01 | Open | Mitigate | We will be trying to make contact with people who are already working in this field. | Anubhav Mishra | 29/04/2021 | On process |
| R02 | open | Accept | We are ready to accept this market competition and will do our best to keep up with it. | | | Accepted. |

Result:

Thus, the WBS and Risk Plan was documented successfully.



DEPT. Of Computer Science Engineering

SRM IST, Kattankulathur – 603 203

Course Code: 18CSC206J

Course Name: Software Engineering and Project Management

| | |
|------------------------------|---|
| Experiment No | 6 |
| Title of Experiment | Design a System Architecture, Use Case Diagram, ER Diagram (Database), DFD Diagram (process) (Upto Level 1), Class Diagram (Applied For OOPS based Project), Sequence Diagram (Applied For OOPS based Project) (Software – Rational Rose) |
| Name of the candidate | Anubhav Mishra |
| Team Members | Adithya Menon, Abhay Kumar Patel |
| Register Number | RA1911029010023 RA1911029010024 RA1911029010025 |
| Date of Experiment | 17/03/2021 |

Mark Split Up

| S.No | Description | Maximum Mark | Mark Obtained |
|--------------|---|--------------|---------------|
| 1 | System Architecture with Presentation | 5 | |
| 2 | Use Case Diagram ER Diagram (Database), DFD Diagram (process) Class Diagram (Applied For OOPS based Project), Sequence Diagram (Applied For OOPS based Project) | 5 | |
| Total | | 10 | |

Staff Signature with date

Aim

To prepare architecture and design of the system

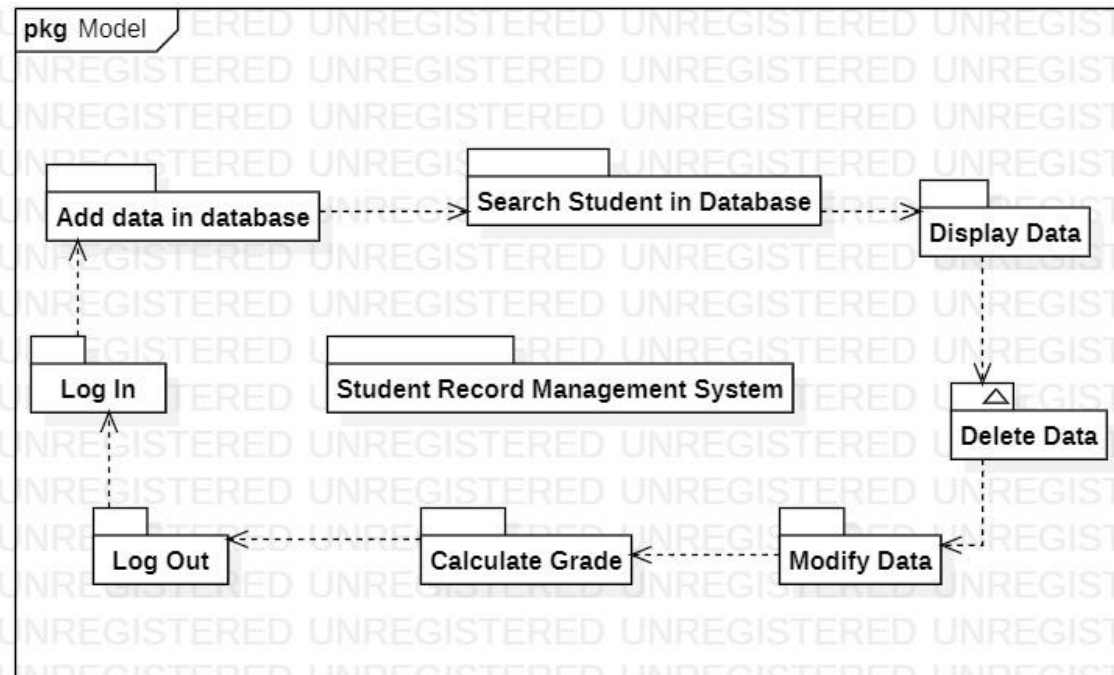
Team Members:

| Sl No | Register No | Name | Role |
|----------|-----------------|-------------------|---------------|
| 1 | RA1911029010024 | Abhay Kumar Patel | Lead |
| 2 | RA1911029010023 | Anubhav Mishra | Member |
| 3 | RA1911029010025 | Adithya Menon | Member |

Software Used

Star UML, Lucidchart

Architecture Diagram with description

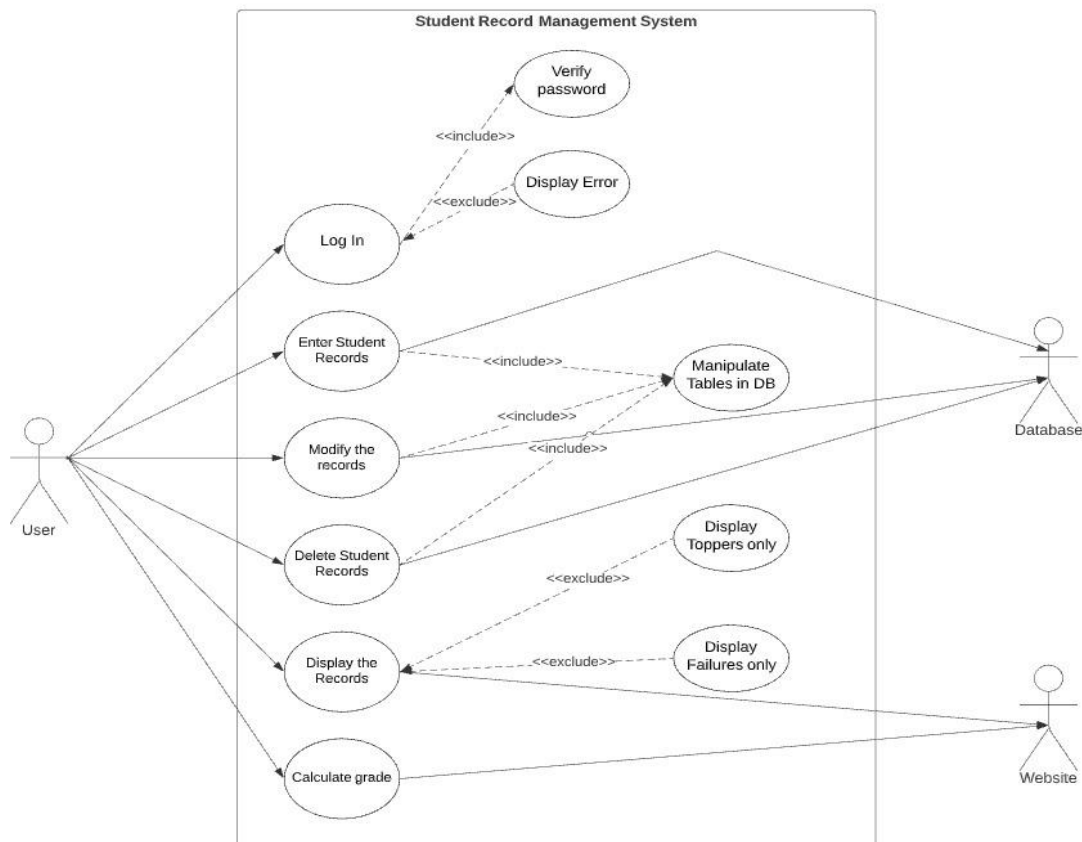


We are creating this system for managing the records of student through online mode. In this first we have to login then add the record of students in database which can also be modified or deleted at will.

After storing the details we can search for the desired record which will be searched and displayed if available in datasheet.

After doing all this we have to logout from the system.

Use Case Diagram With Description

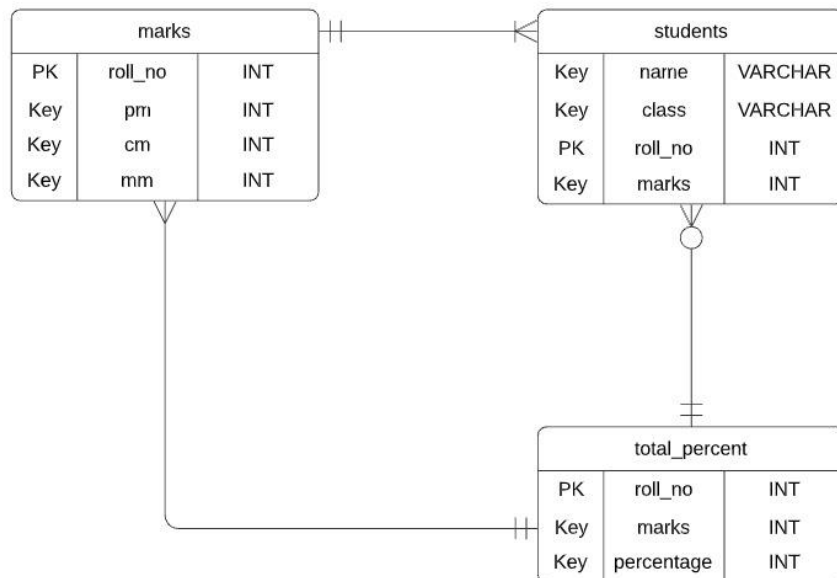


Use case diagram captures the system's functionality and requirements by using actors and use cases. Use Cases model the services, tasks, function that a system needs to perform. Use cases represent high-level functionalities and how a user will handle the system.

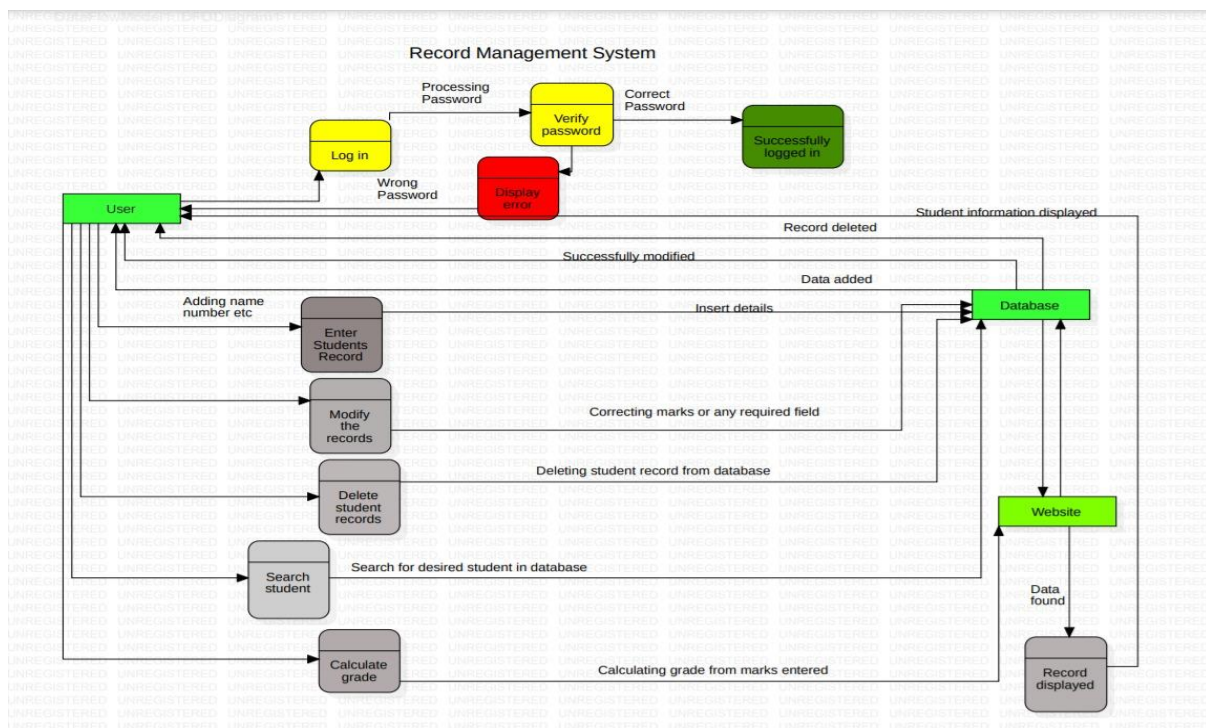
We have 3 actors named as user, database and website and 11 use cases.

ER Diagram With Description (If DBMS used)

Student Record Management System - ER diagram



DFD Diagram (process) With Description

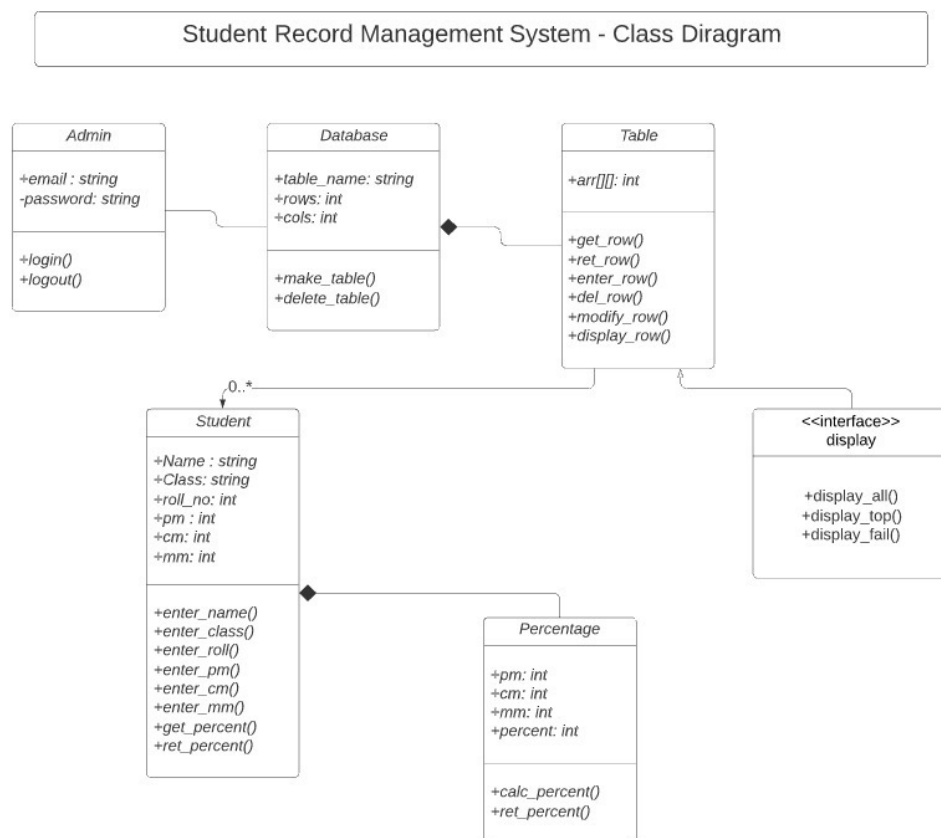


A data flow diagram (DFD) maps out the flow of information for any process or system. It uses defined symbols like rectangles, circles and

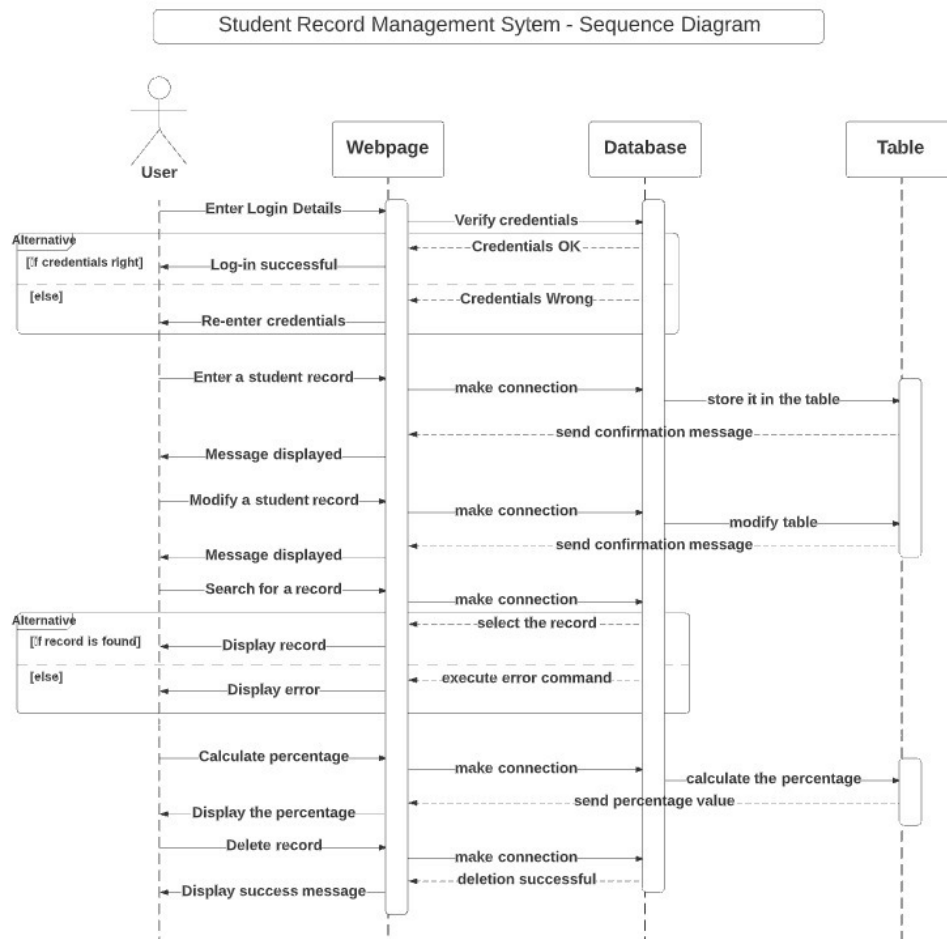
arrows, plus short text labels, to show data inputs, outputs, storage points and the routes between each destination

In this case we have used 3 external entities for sending and receiving data. 10 process is there for the different types of dataflow.

Class Diagram (Applied For OOPS based Project),



Sequence Diagram (Applied For OOPS based Project)



Result:

Thus, architecture and design of the system was documented successfully.



DEPT. Of Computer Science Engineering

SRM IST, Kattankulathur – 603 203

Course Code: 18CSC206J

Course Name: Software Engineering and Project Management

| | |
|------------------------------|--|
| Experiment No | 7 |
| Title of Experiment | Design State , Collaboration, Deployment Diagram, Sample Frontend Design (UI/UX) |
| Name of the candidate | Anubhav Mishra |
| Team Members | Adithya Menon, Abhay Kumar Patel |
| Register Number | RA1911029010023 RA1911029010024 RA1911029010025 |
| Date of Experiment | 24/03/2021 |

Mark Split Up

| S.No | Description | Maximum Mark | Mark Obtained |
|-------------|--|---------------------|----------------------|
| 1 | State , Collaboration diagrams | 5 | |
| 2 | Deployment Diagram, Sample Frontend Design (UI/UX) | 5 | |

| | | |
|--------------|-----------|--|
| Total | 10 | |
|--------------|-----------|--|

Staff Signature with date

Aim

To Design State, Collaboration, Deployment Diagram, Sample Frontend Design (UI/UX) for the project.

Team Members:

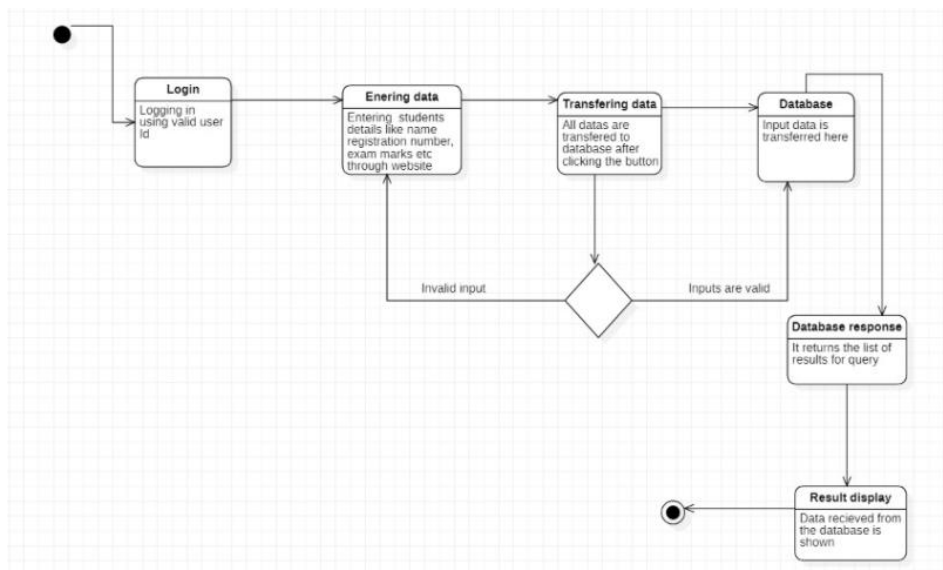
| Sl No | Register No | Name | Role |
|-------|-----------------|-------------------|--------|
| 1 | RA1911029010024 | Abhay Kumar Patel | Lead |
| 2 | RA1911029010023 | Anubhav Mishra | Member |
| 3 | RA1911029010025 | Adithya Menon | Member |

Software Used

Star UML, Lucidchart.

State Diagram with Description

It describes the flow of control from one state to another state.

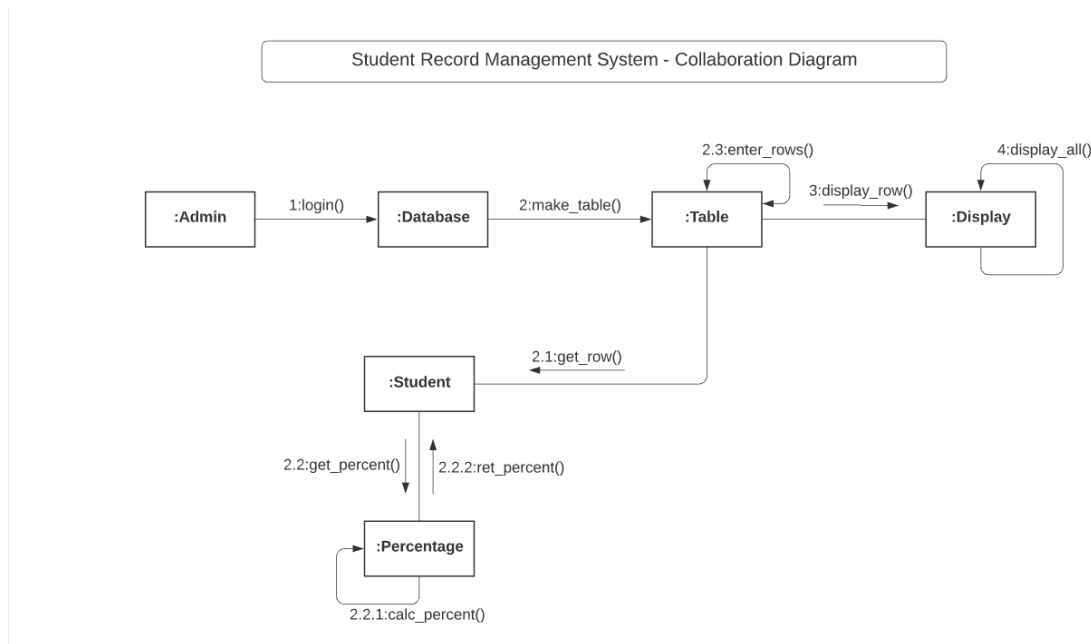


In this diagram it is shown how the user is going to enter the data.

So, as we can see in the diagram that the user first logged in using the id after that he is enter the data which is transferred to database after which database responses and a result display is displayed to the user screen.

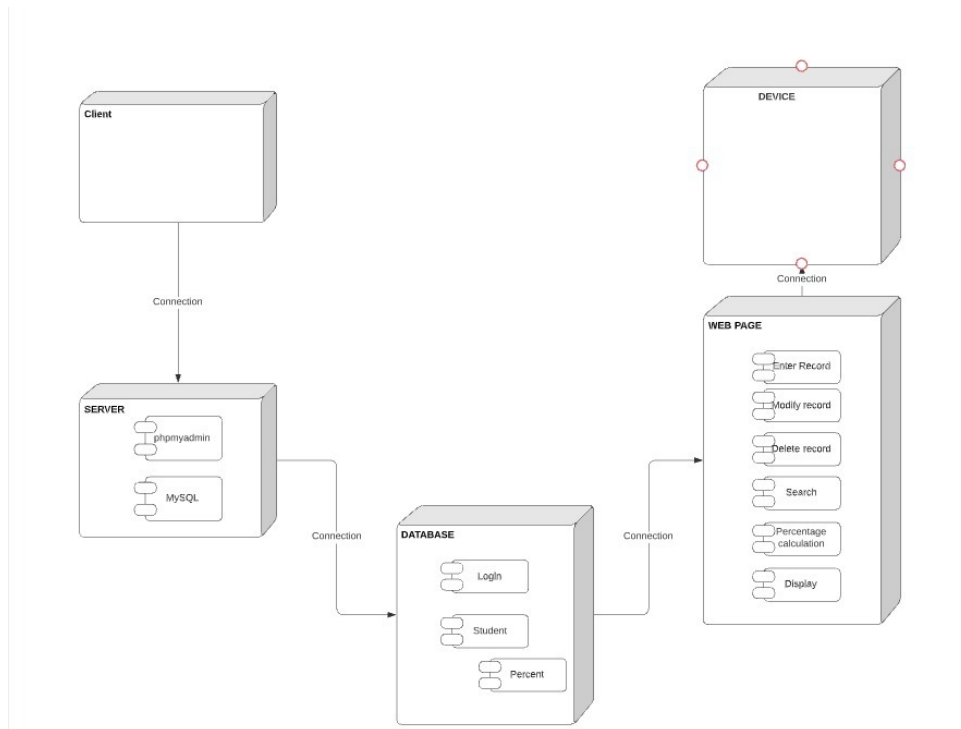
Collaboration Diagram with Description

It describes a pattern of interaction among objects; it shows the objects participating in the interaction by their links to each other and the messages that they send to each other.



So, as we can see in the diagram that the admin is logging in and going to the database for making a table here he is entering the table and and entering the rows where he is getting rows for students data and their percentage which is displayed afterwards.

Deployment Diagram with Description



A server is deployed with MySql and phpMyAdmin which is connected to database which contains login data, student data and percentage data it is connected to webpage which have record, modify record, delete record, search, percentage calculation and display column.

Sample Frontend design



Result:

Thus, above mentioned designs of the system were documented successfully.



DEPT. Of Computer Science Engineering

SRM IST, Kattankulathur – 603 203

Course Code: 18CSC206J

Course Name: Software Engineering and Project Management

| | |
|------------------------------|---|
| Experiment No | 8 |
| Title of Experiment | Module Description, Module Implementation |
| Name of the candidate | Anubhav Mishra |
| Team Members | Abhay Kumar Patel, Adithya Menon |
| Register Number | RA1911029010023, RA1911029010024, RA1911029010025 |
| Date of Experiment | 09/04/2021 |

Mark Split Up

| S.No | Description | Maximum Mark | Mark Obtained |
|--------------|----------------------------|---------------------|----------------------|
| 1 | Implementation of module 1 | 5 | |
| 2 | Output | 5 | |
| Total | | 10 | |

Staff Signature with date

Aim

To describe modules and implement Module1

Team Members:

| Sl No | Register No | Name | Role |
|-------|-----------------|-------------------|--------|
| 1 | RA1911029010024 | Abhay Kumar Patel | Lead |
| 2 | RA1911029010023 | Anubhav Mishra | Member |
| 3 | RA1911029010025 | Adithya Menon | Member |

Software Used

HTML, PHP, Bootstrap, SQL(wampserver), CSS

Code of Module 1:

LOGIN MODULE:

Part1: logging in

In this module, we are using mainly HTML, bootstrap and php to make a connection to the our database. We made a form using the mentioned programming language to accept 2 values, the email ID and the password. When the submit button is pressed, it triggers the connection with the database and checks the 2 values with the info already provided in the database. If the values match, login is shown as success, else , error is shown.

```
<!DOCTYPE html>
<html>
<head>
  <title>Login Page</title>

  <!-- Latest compiled and minified CSS -->
  <link rel="stylesheet"
href="https://maxcdn.bootstrapcdn.com/bootstrap/3.3.7/css/bootstrap.
min.css" >

  <!-- jQuery library -->
  <script
src="https://ajax.googleapis.com/ajax/libs/jquery/1.12.4/jquery.min.
js" defer></script>
```

```

        <!-- Latest compiled and minified JavaScript -->
        <script
src="https://maxcdn.bootstrapcdn.com/bootstrap/3.3.7/js/bootstrap.mi
n.js" defer></script>
        <style type="text/css">
            body
            {
                background-image: url(logo.png);
                background-color: #E0FFFF;
                background-blend-mode: lighten;
                overflow-y: scroll;
                font-family: 'Varela Round', sans-serif;
            }
        </style>
    </head>
    <body>
        <center>
            <h3 style="padding-top: 130px">Admin Login Page</h3>
        </center>
        <div class="container">
            <div class="row">
                <div class="col-md-4 col-md-offset-4">
                    <div class="panel panel-primary">
                        <div class="panel-heading">
                            Please provide the details below
                        </div>
                        <div class="panel-body">
                            <form action="" method="post">
                                <div class="form-group">
                                    <input type="text" name="Email"
class="form-control" placeholder="Email ID">
                                </div>
                                <div class="form-group">
                                    <input type="password"
name="password" class="form-control" placeholder="Password">
                                </div>
                                <button type="submit" name="submit"
class="btn btn-primary">Login</button>
                                <a href="newpass.php" style="padding-
left:130px;">Change Password?</a>
                            </form>
                            <?php
                                if (isset($_POST['submit'])) {
                                    $con =
mysqli_connect("localhost","root","", "SRMS") or
die(mysqli_error($con));
                                    $emailID = $_POST['Email'];
                                    $password = $_POST['password'];
                                    $query = "select * from login_cred
where id = '$emailID' and pass = '$password'";

```

```

        $query_result =
mysqli_query($con,$query);
        $rows =
mysqli_num_rows($query_result);
        if ($rows>0) {
            header("Location:
main_page.php");
        }
        else{
            echo "Wrong Credentials";
        }
    }
    ?>
</div>
</div>
</div>
</div>
</div>
</body>
</html>

```

Part2: Changing password:

In this part 2 of the module we have designed another form in case the login password is forgotten by the user. In that case when the Forgot Password link from part 1 module is pressed, it takes user to the forgot password page where the password value can be changed directly in the database. HTML,php and Bootstrap is used for implementing this.

```

<!DOCTYPE html>
<html>
<head>
    <title>Login Page</title>

    <!-- Latest compiled and minified CSS -->
    <link rel="stylesheet"
href="https://maxcdn.bootstrapcdn.com/bootstrap/3.3.7/css/bootstrap.
min.css" >

    <!-- jQuery library -->
    <script
src="https://ajax.googleapis.com/ajax/libs/jquery/1.12.4/jquery.min.
js"></script>

    <!-- Latest compiled and minified JavaScript -->
    <script
src="https://maxcdn.bootstrapcdn.com/bootstrap/3.3.7/js/bootstrap.mi
n.js"></script>
    <link rel="stylesheet" type="text/css" href="sms_style.css">
</head>

```

```

<body>
  <center>
    <h3 style="padding-top: 130px">Change Password</h3>
  </center>
  <div class="container">
    <div class="row">
      <div class="col-md-4 col-md-offset-4">
        <div class="panel panel-primary">
          <div class="panel-heading">
            Please provide the details below
          </div>
          <div class="panel-body">
            <form action="" method="post">
              <div class="form-group">
                <input type="text" name="email"
class="form-control" placeholder="Email ID">
              </div>
              <div class="form-group">
                <input type="password"
name="curpass" class="form-control" placeholder="Current Password">
              </div>
              <div class="form-group">
                <input type="password"
name="newpass" class="form-control" placeholder="New Password">
              </div>
              <div class="form-group">
                <input type="password"
name="renewpass" class="form-control" placeholder="Retype New
Password">
              </div>
              <button type="submit" name="submit"
class="btn btn-primary">Confirm</button>
            </form>
            <?php
              if (isset($_POST['submit']))
              {
                $con =
mysqli_connect("localhost","root","","SRMS") or
die(mysqli_error($con));

                $email = $_POST['email'];
                $curpass = $_POST['curpass'];
                $newpass = $_POST['newpass'];
                $renew = $_POST['renewpass'];
                $query = "SELECT * FROM login_cred
WHERE id='$email' and pass='$curpass'";
                $query_result =
mysqli_query($con,$query) or die(mysqli_error($con));
                $rows =
mysqli_num_rows($query_result);
                if ($rows>0)

```

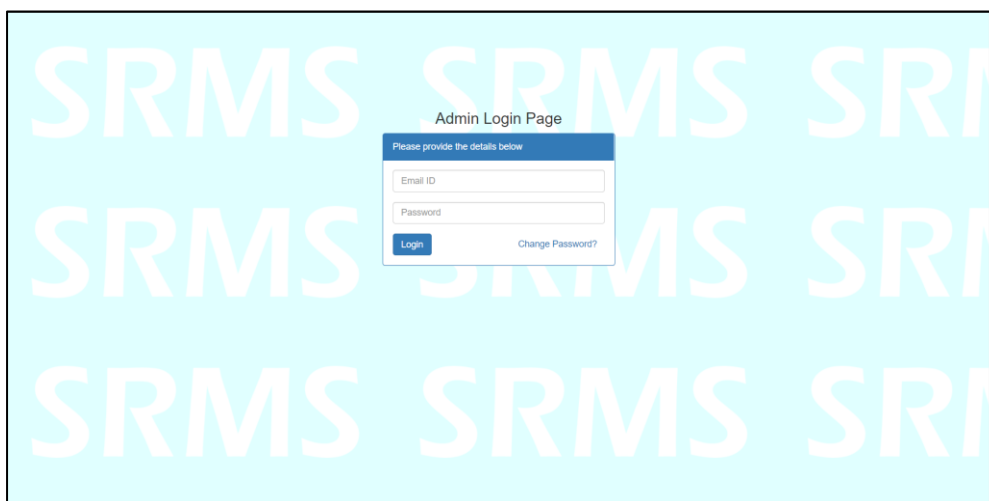
```

        {
            if($newpass == $renew)
            {
                $newquery = "UPDATE
login_cred SET pass='$newpass' WHERE id='$email'";
                $newquery_res =
mysqli_query($con,$newquery) or die(mysqli_error($con));
                echo "Password Changed";
            }
            else
            {
                echo "You re-typed incorrect
password";
            }
        }
    }
    else{
        echo "Wrong Email ID or current
password";
    }
}
?>
<br>
<a href="login.php">Return to login?</a>
</div>
</div>
</div>
</div>
</div>
</body>
</html>

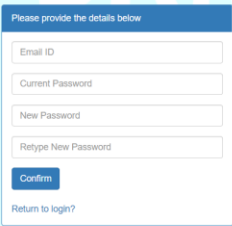
```

Result of Module 1:

Part1:



Part2:



The image shows a 'Change Password' form overlaid on a light blue background with a repeating 'SRMS' watermark. The form has a blue header with the title 'Change Password'. Below the header, it says 'Please provide the details below'. The form contains four input fields: 'Email ID', 'Current Password', 'New Password', and 'Retype New Password'. There is a blue 'Confirm' button below the input fields. At the bottom of the form, there is a link that says 'Return to login?'.

Result:

Thus, modules are described, Module 1 was implemented and documented successfully.



DEPT. Of Computer Science Engineering

SRM IST, Kattankulathur – 603 203

Course Code: 18CSC206J

Course Name: Software Engineering and Project Management

| | |
|------------------------------|---|
| Experiment No | 9 |
| Title of Experiment | Module2 Implementation |
| Name of the candidate | Anubhav Mishra |
| Team Members | Adithya Menon, Abhay Kumar Patel |
| Register Number | RA1911029010023, RA1911029010024, RA1911029010025 |
| Date of Experiment | 19/04/2021 |

Mark Split Up

| S.No | Description | Maximum Mark | Mark Obtained |
|--------------|--------------------|---------------------|----------------------|
| 1 | Module 2 | 5 | |
| 2 | Output | 5 | |
| Total | | 10 | |

Staff Signature with date

Aim

To implement Module 2 of the project and display the output of the module with new requirements may assimilated

Team Members:

| Sl No | Register No | Name | Role |
|-------|-----------------|-------------------|--------|
| 1 | RA1911029010024 | Abhay Kumar Patel | Lead |
| 2 | RA1911029010023 | Anubhav Mishra | Member |
| 3 | RA1911029010025 | Adithya Menon | Member |

Software Used

HTML, CSS, Bootstrap, MySQL, PHP

Code of Module 2:

Part1: Entering data

In this part, we design a form using HTML, Bootstrap and php for accepting Name, class, roll number, physics marks, chemistry marks and maths marks. Then when the submit button is pressed, php is triggered and it takes user to the page given in the part2 of this module.

```
<!DOCTYPE html>
<html>
<head>
  <title>Entry Page</title>
  <!-- Latest compiled and minified CSS -->
  <link rel="stylesheet"
href="https://maxcdn.bootstrapcdn.com/bootstrap/3.3.7/css/bootstrap.
min.css" >

  <!-- jQuery library -->
  <script
src="https://ajax.googleapis.com/ajax/libs/jquery/1.12.4/jquery.min.
js"></script>

  <!-- Latest compiled and minified JavaScript -->
  <script
src="https://maxcdn.bootstrapcdn.com/bootstrap/3.3.7/js/bootstrap.mi
n.js"></script>
  <link rel="stylesheet" type="text/css" href="sms_style.css">
</head>
<body>

<nav class="navbar navbar-expand-lg navbar-light" style="background-
color: #9370DB;">
  <div class="container-fluid">
```

```

<div class="navbar-header">
    <button type = "button" class = "navbar-toggle"
        data-toggle = "collapse" data-target = "#mynavbar">
        <span class = "sr-only">Toggle navigation</span>
        <span class = "icon-bar"></span>
        <span class = "icon-bar"></span>
        <span class = "icon-bar"></span>
    </button>
    <a href="main_page.php" class="navbar-brand">
        <span class="glyphicon glyphicon-book"></span>
        Student Record Management System
    </a>
</div>
<div class="collapse navbar-collapse" id="mynavbar">
<ul class="nav navbar-nav navbar-right">
    <li class="active txt"><a
href="main_page.php">Home</a></li>
    <li class="dropdown txt">
        <a class="dropdown-toggle" data-toggle="dropdown"
href="#">Student
        <span class="caret"></span></a>
        <ul class="dropdown-menu">
            <li><a href="enter.php">Enter Record</a></li>
            <li><a href="delete.php">Delete Record</a></li>
            <li><a href="modify.php">Modify Record</a></li>
        </ul>
    </li>
    <li class="txt"><a href="#">Grade Calculation</a></li>
    <li class="txt"><a href="login.php"><span
class="glyphicon glyphicon-log-out"></span> Logout</a></li>
</ul>
</div>
</div>
</nav>

<div class="container">
    <h3 style="text-align: center;">Student Entry Page</h3><br>
    <marquee style="color: red;">*This system works by
identifying the roll numbers of the students. So please make sure
you enter the correct details or else you will have to delete the
record and enter in again. Thank you for reading :)</marquee>
    <div class="row">
        <div class="col-md-4 col-md-offset-4">
            <div class="panel panel-primary extra">
                <div class="panel-heading">
                    Enter the student details
                </div>
                <div class="panel-body">
                    <form method="post" action="entry_conf.php">
                        <div class="form-group">

```


</html>

Part2: Confirmation of the data entered

In this part, we confirm the data given by the user via the form. We establish a connection between the database and our page using php. MySQL command “INSERT INTO Table” is used to enter the data into the table inside the database. This command takes the data of the user and sets them as variables and inserts it into the table and success message is printed on the screen.

<?php

```
$con = mysqli_connect("localhost","root","","SRMS") or
die(mysqli_error($con));
$name = $_POST['name'];
$class = $_POST['class'];
$roll_no = $_POST['roll'];
$pm = $_POST['pm'];
$cm = $_POST['cm'];
$mm = $_POST['mm'];
$query = "INSERT INTO students (name, class, roll_no, pm, cm, mm)
values ('$name', '$class', '$roll_no', '$pm', '$cm', '$mm')";
$query_result = mysqli_query($con, $query) or
die(mysqli_error($con));

?>
<!DOCTYPE html>
<html>
<head>
    <title>entry confirm</title>
    <link rel="stylesheet"
href="https://maxcdn.bootstrapcdn.com/bootstrap/3.3.7/css/bootstrap.
min.css" >

    <!-- jQuery library -->
    <script
src="https://ajax.googleapis.com/ajax/libs/jquery/1.12.4/jquery.min.
js"></script>

    <!-- Latest compiled and minified JavaScript -->
    <script
src="https://maxcdn.bootstrapcdn.com/bootstrap/3.3.7/js/bootstrap.mi
n.js"></script>
    <link rel="stylesheet" type="text/css" href="sms_style.css">
</head>
```

```

<body>
  <div class="container">
    <center>
      <h3><span class="glyphicon glyphicon-ok-circle"></span>
Student Record Created Successfully. <span class="glyphicon
glyphicon-ok-circle"></span></h3><br>
    </center>
  </div>
  <div class="container-fluid" style="padding-left: 35px">
    <div class="col-md-2 col-md-offset-4">
      <a href="main_page.php" class="btn btn-
primary">Return to Main Page</a>
    </div>
    <div class="col-md-2" style="padding-right: 0px;">
      <a href="display_all.php" class="btn btn-
primary">Check all student records</a>
    </div>
  </div>
  <footer>
    <div class="container">
      <p style="text-align:center">
        Copyright @ SRMIST | Contact Us: +91 91000 91000
      </p>
    </div>
  </footer>
</body>
</html>

```

Result of Module 2:

Part 1:

Student Record Management System

Home Student Grade Calculation Logout

Student Entry Page

*This system works by identifying the roll numbers of the students. So please make sure you enter the correct

Enter the student details

Name of the Student:

Class:

Roll No.:

Physics Marks:

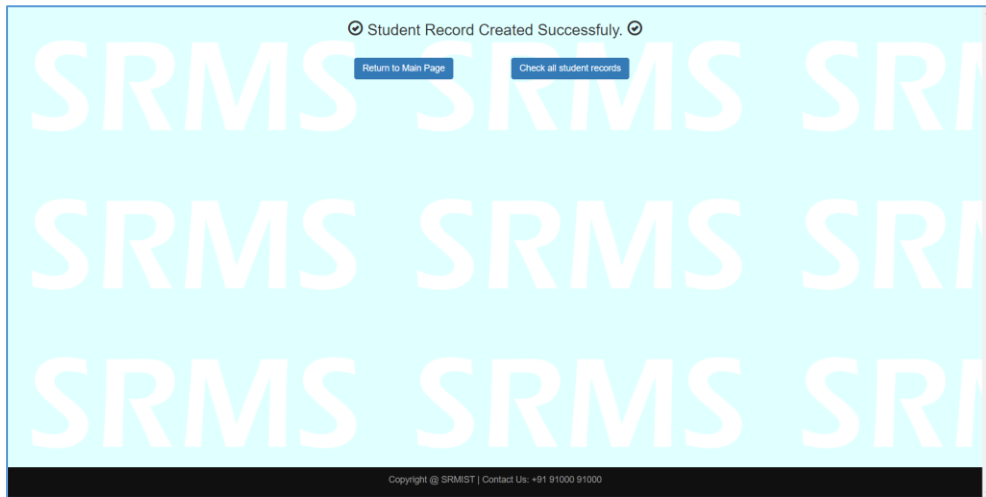
Chemistry Marks:

Maths Marks:

Submit

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Part 2:



Result:

Thus, the module2 was implemented and documented successfully.



DEPT. Of Computer Science Engineering

SRM IST, Kattankulathur – 603 203

Course Code: 18CSC206J

Course Name: Software Engineering and Project Management

| | |
|------------------------------|---|
| Experiment No | 10 |
| Title of Experiment | Module3 Implementation |
| Name of the candidate | Anubhav Mishra |
| Team Members | Adithya Menon, Abhay Kumar Patel |
| Register Number | RA1911029010023, RA1911029010024, RA1911029010025 |
| Date of Experiment | 19/04/2021 |

Mark Split Up

| S.No | Description | Maximum Mark | Mark Obtained |
|--------------|--------------------|---------------------|----------------------|
| 1 | Module 2 | 5 | |
| 2 | Output | 5 | |
| Total | | 10 | |

Staff Signature with date

Aim

To implement Module 3 of the project and display the output of the module with new requirements may assimilated

Team Members:

| Sl No | Register No | Name | Role |
|-------|-----------------|-------------------|--------|
| 1 | RA1911029010024 | Abhay Kumar Patel | Lead |
| 2 | RA1911029010023 | Anubhav Mishra | Member |
| 3 | RA1911029010025 | Adithya Menon | Member |

Software Used

HTML, CSS, Bootstrap, MySQL, PHP

Module 3:

It is all about the display of records.

For displaying all the records:

```
<?php
$con = mysqli_connect("localhost","root","","SRMS") or
die(mysqli_error($con));
$query = "SELECT * from students";
$query_result = mysqli_query($con,$query) or
die(mysqli_error($con));
?>

<!DOCTYPE html>
<html>
<head>
    <title>Display page</title>
    <link rel="stylesheet"
href="https://maxcdn.bootstrapcdn.com/bootstrap/3.3.7/css/bootstrap.
min.css" >
    <!-- jQuery library -->
    <script
src="https://ajax.googleapis.com/ajax/libs/jquery/1.12.4/jquery.min.
js"></script>
    <!-- Latest compiled and minified JavaScript -->
    <script
src="https://maxcdn.bootstrapcdn.com/bootstrap/3.3.7/js/bootstrap.mi
n.js"></script>
    <link
href="https://fonts.googleapis.com/css2?family=Varela+Round&display=
swap" rel="stylesheet">
    <link rel="stylesheet" type="text/css" href="sms_style.css">
</head>
<body>
<nav class="navbar navbar-expand-lg navbar-light" style="background-
color: #9370DB;">
```

```

        <div class="container-fluid">
            <div class="navbar-header">
                <button type = "button" class = "navbar-
toggle"
                    data-toggle = "collapse" data-target =
"#mynavbar">
                    <span class = "sr-only">Toggle navigation</span>
                    <span class = "icon-bar"></span>
                    <span class = "icon-bar"></span>
                    <span class = "icon-bar"></span>
                    </button>
                    <a href="main_page.php" class="navbar-brand">
                        <span class="glyphicon glyphicon-
book"></span>
                            Student Record Management System
                        </a>
                    </div>
                    <div class="collapse navbar-collapse" id="mynavbar">
                        <ul class="nav navbar-nav navbar-right">
                            <li class="active txt"><a
href="main_page.php">Home</a></li>
                            <li class="dropdown txt">
                                <a class="dropdown-toggle" data-toggle="dropdown"
href="#">Student
                                    <span class="caret"></span></a>
                                    <ul class="dropdown-menu">
                                        <li><a href="enter.php">Enter Record</a></li>
                                        <li><a href="delete.php">Delete Record</a></li>
                                        <li><a href="modify.php">Modify Record</a></li>
                                        <li><a href="display_all.php">List of
Students</a></li>
                                    </ul>
                                </li>
                                <li class="txt"><a href="gradeCalc.php">Grade
Calculation</a></li>
                                <li class="txt"><a href="login.php"><span
class="glyphicon glyphicon-log-out"></span> Logout</a></li>
                            </ul>
                        </div>
                    </div>
                </nav>

                <div class="container extra">
                    <form method="post">
                        <input type="text" name="search_text" placeholder="Search
Roll No...">
                        <button class="btn btn-primary" type="submit"
name="search"><span class="glyphicon glyphicon-
search"></span></button>

```

```

        <button class="btn btn-primary" type="submit"
name="toppers">Toppers</button>
        <button class="btn btn-primary" type="submit"
name="failures">Failures</button>
    </form><br>
    <?php
        if (isset($_POST['search'])) {
            $roll = $_POST['search_text'];
            include 'display_search.php';
        }
        elseif (isset($_POST['toppers'])) {
            header("Location: toppers.php");
        }
        elseif (isset($_POST['failures'])) {
            header("Location: failures.php");
        }
        else{
            while ($row =
mysqli_fetch_array($query_result)) { ?>

                <div class="row">
                    <div class="col-md-12"><h4>Student <span
class="glyphicon glyphicon-user"></span></h4></div>
                </div>
                <div class="row">
                    <div class="col-md-2">Name:</div>
                    <div class="col-md-10"><?php echo
$row['name']; ?></div>
                </div>
                <div class="row">
                    <div class="col-md-2">Class:</div>
                    <div class="col-md-10"><?php echo
$row['class']; ?></div>
                </div>
                <div class="row">
                    <div class="col-md-2">Roll No:</div>
                    <div class="col-md-10"><?php echo
$row['roll_no']; ?></div>
                </div>
                <div class="row">
                    <div class="col-md-2">Physics Marks:</div>
                    <div class="col-md-10"><?php echo $row['pm'];
?></div>
                </div>
                <div class="row">
                    <div class="col-md-2">Chemistry Marks:</div>
                    <div class="col-md-10"><?php echo $row['cm'];
?></div>
                </div>
                <div class="row">

```

```

                <div class="col-md-2">Maths Marks:</div>
                <div class="col-md-10"><?php echo $row['mm'];
?></div>
            </div>
            <hr style="border: 5px solid blue; border-radius:
2px;">
            <?php }} ?>
        </div>
        <footer>
            <div class="container">
                <p style="text-align:center">
                    Copyright @ SRMIST | Contact Us: +91 91000 91000
                </p>
            </div>
        </footer>
    </body>
</html>

```

For displaying only searched record:

```

<?php

    $con = mysqli_connect("localhost", "root", "", "SRMS") or
die(mysqli_error($con));
    $search_query = "SELECT * FROM students WHERE roll_no =
$roll";
    $search_query_result = mysqli_query($con, $search_query) or
die(mysqli_error($con));
    $row_num = mysqli_num_rows($search_query_result);
?>

<!DOCTYPE html>
<html>
<head>
    <title>Search Display page</title>
    <link rel="stylesheet"
href="https://maxcdn.bootstrapcdn.com/bootstrap/3.3.7/css/bootstrap.
min.css" >
    <!-- jQuery library -->
    <script
src="https://ajax.googleapis.com/ajax/libs/jquery/1.12.4/jquery.min.
js"></script>
    <!-- Latest compiled and minified JavaScript -->
    <script
src="https://maxcdn.bootstrapcdn.com/bootstrap/3.3.7/js/bootstrap.mi
n.js"></script>
    <link
href="https://fonts.googleapis.com/css2?family=Varela+Round&display=
swap" rel="stylesheet">
    <link rel="stylesheet" type="text/css" href="sms_style.css">

```

```

</head>
<body>
    <div class="container extra">
        <?php
            if ($row_num>0)
            {
                while ($row =
mysqli_fetch_array($search_query_result)) {?>

                    <div class="row">
                        <div class="col-md-12"><h4>Student <span
class="glyphicon glyphicon-user"></span></h4></div>
                    </div>
                    <div class="row">
                        <div class="col-md-2">Name:</div>
                        <div class="col-md-10"><?php echo
$row['name']; ?></div>
                    </div>
                    <div class="row">
                        <div class="col-md-2">Class:</div>
                        <div class="col-md-10"><?php echo
$row['class']; ?></div>
                    </div>
                    <div class="row">
                        <div class="col-md-2">Roll No:</div>
                        <div class="col-md-10"><?php echo
$row['roll_no']; ?></div>
                    </div>
                    <div class="row">
                        <div class="col-md-2">Physics Marks:</div>
                        <div class="col-md-10"><?php echo $row['pm'];
?></div>
                    </div>
                    <div class="row">
                        <div class="col-md-2">Chemistry Marks:</div>
                        <div class="col-md-10"><?php echo $row['cm'];
?></div>
                    </div>
                    <div class="row">
                        <div class="col-md-2">Maths Marks:</div>
                        <div class="col-md-10"><?php echo $row['mm'];
?></div>
                    </div>
                    <hr style="border: 5px solid blue; border-radius:
2px;">
                <?php
            }
        }
    }
    else

```

```

        echo "No Such Student Exists. Maybe you typed
the wrong roll number :/";
    ?>
    <br>
    <a href="display_all.php" class="btn btn-primary">Would
you like to search again?</a>
</div>
<footer>
    <div class="container">
        <p style="text-align:center">
            Copyright @ SRMIST | Contact Us: +91 91000 91000
        </p>
    </div>
</footer>
</body>
</html>

```

To Display toppers:

```

<!DOCTYPE html>
<html>
<head>
    <title>Failures</title>
    <link rel="stylesheet"
href="https://maxcdn.bootstrapcdn.com/bootstrap/3.3.7/css/bootstrap.
min.css" >
    <!-- jQuery library -->
    <script
src="https://ajax.googleapis.com/ajax/libs/jquery/1.12.4/jquery.min.
js"></script>
    <!-- Latest compiled and minified JavaScript -->
    <script
src="https://maxcdn.bootstrapcdn.com/bootstrap/3.3.7/js/bootstrap.mi
n.js"></script>
    <link
href="https://fonts.googleapis.com/css2?family=Varela+Round&display=
swap" rel="stylesheet">
    <link rel="stylesheet" type="text/css" href="sms_style.css">
</head>
<body>
<nav class="navbar navbar-expand-lg navbar-light" style="background-
color: #9370DB;">
    <div class="container-fluid">
        <div class="navbar-header">
            <button type = "button" class = "navbar-
toggle"
                data-toggle = "collapse" data-target =
"#mynavbar">
                <span class = "sr-only">Toggle navigation</span>
                <span class = "icon-bar"></span>

```

```

        <span class = "icon-bar"></span>
        <span class = "icon-bar"></span>
        </button>
        <a href="main_page.php" class="navbar-brand">
            <span class="glyphicon glyphicon-
book"></span>
                Student Record Management System
            </a>
        </div>
        <div class="collapse navbar-collapse" id="mynavbar">
        <ul class="nav navbar-nav navbar-right">
            <li class="active txt"><a
href="main_page.php">Home</a></li>
            <li class="dropdown txt">
                <a class="dropdown-toggle" data-toggle="dropdown"
href="#">Student
                    <span class="caret"></span></a>
                    <ul class="dropdown-menu">
                        <li><a href="enter.php">Enter Record</a></li>
                        <li><a href="delete.php">Delete Record</a></li>
                        <li><a href="modify.php">Modify Record</a></li>
                        <li><a href="display_all.php">List of
Students</a></li>
                    </ul>
                </li>
                <li class="txt"><a href="gradeCalc.php">Grade
Calculation</a></li>
                <li class="txt"><a href="login.php"><span
class="glyphicon glyphicon-log-out"></span> Logout</a></li>
            </ul>
        </div>
    </div>
</nav>

<div class="container-fluid">
    <center>
        <h3 style="color: green;"><span class="glyphicon
glyphicon-thumbs-up"></span> The Toppers <span class="glyphicon
glyphicon-thumbs-up"></span></h3>
    </center>
</div>

<?php
$con = mysqli_connect("localhost","root","","SRMS") or
die(mysqli_error($con));
$fail_query = "SELECT
name,class,roll_no,pm,cm,mm,((pm+cm+mm)/3)*100/30 AS percent FROM
students WHERE ((pm+cm+mm)/3)*100/30 = (SELECT
max(((pm+cm+mm)/3)*100/30) FROM students)";
$fail_query_result = mysqli_query($con,$fail_query);

```



```

$num_fails = mysqli_num_rows($fail_query_result);
?>

<div class="container extra">
    <?php if($num_fails>0)
        {
            while($row=mysqli_fetch_array($fail_query_result))
        {?>
                <div class="row">
                    <div class="col-md-12"><h4>Student
<span class="glyphicon glyphicon-user"></span></h4></div>
                    </div>
                    <div class="row">
                        <div class="col-md-2">Name:</div>
                        <div class="col-md-10"><?php echo
$?row['name']; ?></div>
                    </div>
                    <div class="row">
                        <div class="col-md-2">Class:</div>
                        <div class="col-md-10"><?php echo
$?row['class']; ?></div>
                    </div>
                    <div class="row">
                        <div class="col-md-2">Roll
No:</div>
                        <div class="col-md-10"><?php echo
$?row['roll_no']; ?></div>
                    </div>
                    <div class="row">
                        <div class="col-md-2">Physics
Marks:</div>
                        <div class="col-md-10"><?php echo
$?row['pm']; ?></div>
                    </div>
                    <div class="row">
                        <div class="col-md-2">Chemistry
Marks:</div>
                        <div class="col-md-10"><?php echo
$?row['cm']; ?></div>
                    </div>
                    <div class="row">
                        <div class="col-md-2">Maths
Marks:</div>
                        <div class="col-md-10"><?php echo
$?row['mm']; ?></div>
                    </div>
                    <div class="row">
                        <div class="col-md-2">Overall
Percentage:</div>

```

```

                                <div class="col-md-10"><?php echo
$row['percent']; ?></div>
                                </div>
                                <hr style="border: 5px solid blue;
border-radius: 2px;">
                                <?php
                                }
                                }
                                else
                                {
                                ?>
                                <center>
                                <h4 style="color: green;">No Toppers</h4>
                                </center>
                                <?php }
                                ?>
</div>

<footer>
    <div class="container">
        <p style="text-align:center">
            Copyright @ SRMIST | Contact Us: +91 91000 91000
        </p>
    </div>
</footer>
</body>
</html>

```

To display failures:

```

<!DOCTYPE html>
<html>
<head>
    <title>Failures</title>
    <link rel="stylesheet"
href="https://maxcdn.bootstrapcdn.com/bootstrap/3.3.7/css/bootstrap.
min.css" >
    <!-- jQuery library -->
    <script
src="https://ajax.googleapis.com/ajax/libs/jquery/1.12.4/jquery.min.
js"></script>
    <!-- Latest compiled and minified JavaScript -->
    <script
src="https://maxcdn.bootstrapcdn.com/bootstrap/3.3.7/js/bootstrap.mi
n.js"></script>
    <link
href="https://fonts.googleapis.com/css2?family=Varela+Round&display=
swap" rel="stylesheet">
    <link rel="stylesheet" type="text/css" href="sms_style.css">
</head>

```

```

<body>
<nav class="navbar navbar-expand-lg navbar-light" style="background-
color: #9370DB;">
    <div class="container-fluid">
        <div class="navbar-header">
            <button type = "button" class = "navbar-
toggle"
            data-toggle = "collapse" data-target =
"#mynavbar">
                <span class = "sr-only">Toggle navigation</span>
                <span class = "icon-bar"></span>
                <span class = "icon-bar"></span>
                <span class = "icon-bar"></span>
                </button>
                <a href="main_page.php" class="navbar-brand">
                    <span class="glyphicon glyphicon-
book"></span>
                        Student Record Management System
                    </a>
                </div>
                <div class="collapse navbar-collapse" id="mynavbar">
                    <ul class="nav navbar-nav navbar-right">
                        <li class="active txt"><a
href="main_page.php">Home</a></li>
                        <li class="dropdown txt">
                            <a class="dropdown-toggle" data-toggle="dropdown"
href="#">Student
                                <span class="caret"></span></a>
                                <ul class="dropdown-menu">
                                    <li><a href="enter.php">Enter Record</a></li>
                                    <li><a href="delete.php">Delete Record</a></li>
                                    <li><a href="modify.php">Modify Record</a></li>
                                    <li><a href="display_all.php">List of
Students</a></li>
                                </ul>
                            </li>
                            <li class="txt"><a href="gradeCalc.php">Grade
Calculation</a></li>
                            <li class="txt"><a href="login.php"><span
class="glyphicon glyphicon-log-out"></span> Logout</a></li>
                        </ul>
                    </div>
                </div>
            </nav>

            <div class="container-fluid">
                <center>
                    <h3 style="color: red;"><span class="glyphicon glyphicon-
ban-circle"></span> The Failures <span class="glyphicon glyphicon-
ban-circle"></span></h3>

```

```

        </center>
    </div>

    <?php
    $con = mysqli_connect("localhost","root","","SRMS") or
    die(mysqli_error($con));
    $fail_query = "SELECT
    name,class,roll_no,pm,cm,mm,((pm+cm+mm)/3)*100/30 AS percent FROM
    students";
    $fail_query_result = mysqli_query($con,$fail_query);
    $num_fails = mysqli_num_rows($fail_query_result);
    ?>

    <div class="container extra">
        <?php if($num_fails>0)
        {
            while($row=mysqli_fetch_array($fail_query_result)) {
                if($row['percent']<33){?>
                    <div class="row">
                        <div class="col-md-12"><h4>Student
    <span class="glyphicon glyphicon-user"></span></h4></div>
                        </div>
                        <div class="row">
                            <div class="col-md-2">Name:</div>
                            <div class="col-md-10"><?php echo
    $row['name']; ?></div>
                        </div>
                        <div class="row">
                            <div class="col-md-2">Class:</div>
                            <div class="col-md-10"><?php echo
    $row['class']; ?></div>
                        </div>
                        <div class="row">
                            <div class="col-md-2">Roll
    No:</div>
                            <div class="col-md-10"><?php echo
    $row['roll_no']; ?></div>
                        </div>
                        <div class="row">
                            <div class="col-md-2">Physics
    Marks:</div>
                            <div class="col-md-10"><?php echo
    $row['pm']; ?></div>
                        </div>
                        <div class="row">
                            <div class="col-md-2">Chemistry
    Marks:</div>
                            <div class="col-md-10"><?php echo
    $row['cm']; ?></div>
                        </div>
                    }
                }
            }
        }
    </div>

```

```

        <div class="row">
            <div class="col-md-2">Maths
Marks:</div>
            <div class="col-md-10"><?php echo
$row['mm']; ?></div>
        </div>
        <div class="row">
            <div class="col-md-2">Overall
Percentage:</div>
            <div class="col-md-10"><?php echo
$row['percent']; ?></div>
        </div>
        <hr style="border: 5px solid blue;
border-radius: 2px;">
        <?php
        }
        else {continue;}
    }}
    else
    {
        ?>
        <center>
            <h4 style="color: green;">No Failures :)</h4>
        </center>
        <?php }
        ?>
    </div>

<footer>
    <div class="container">
        <p style="text-align:center">
            Copyright @ SRMIST | Contact Us: +91 91000 91000
        </p>
    </div>
</footer>
</body>
</html>

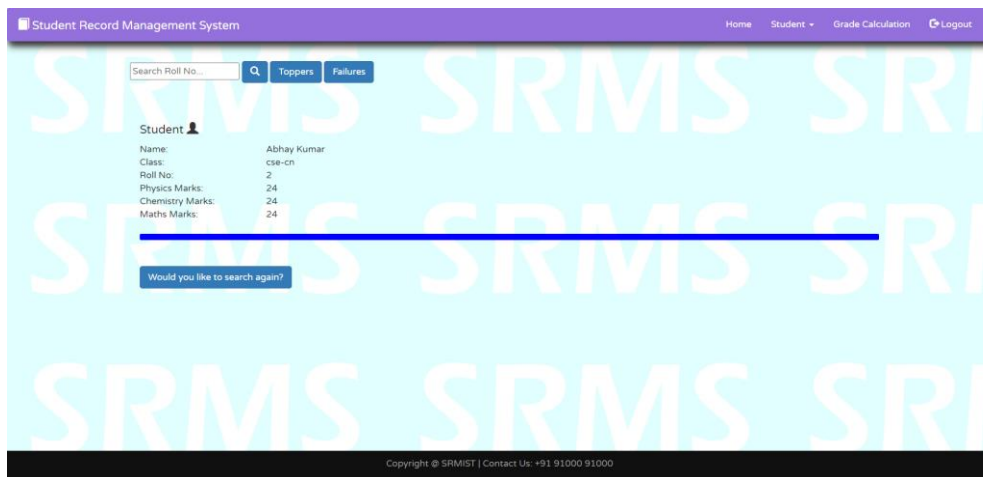
```

Result of Module 2:

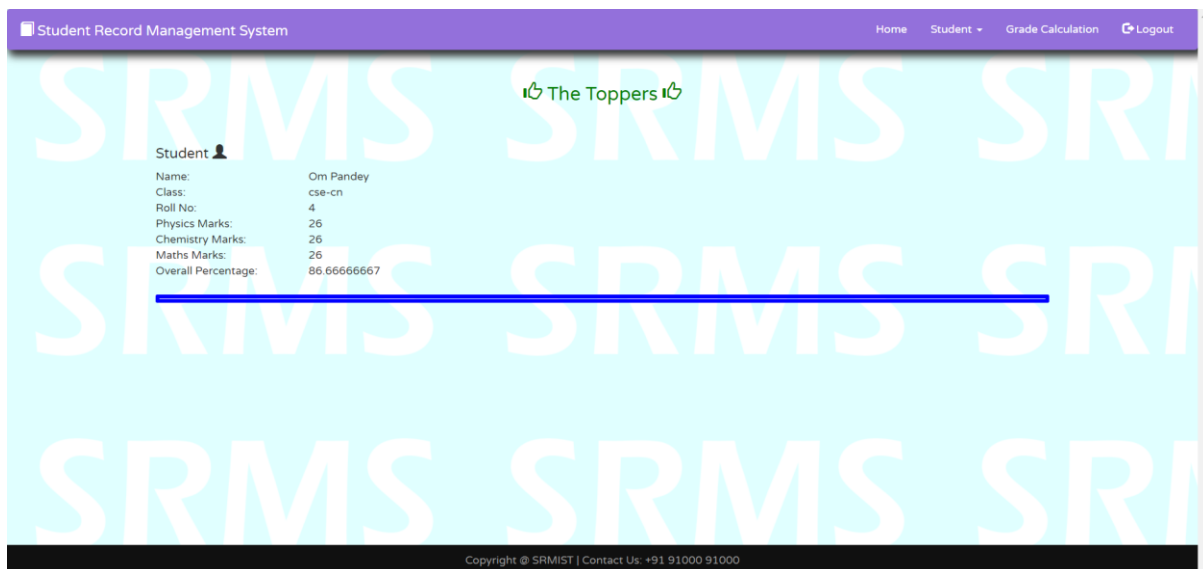
Display all records:



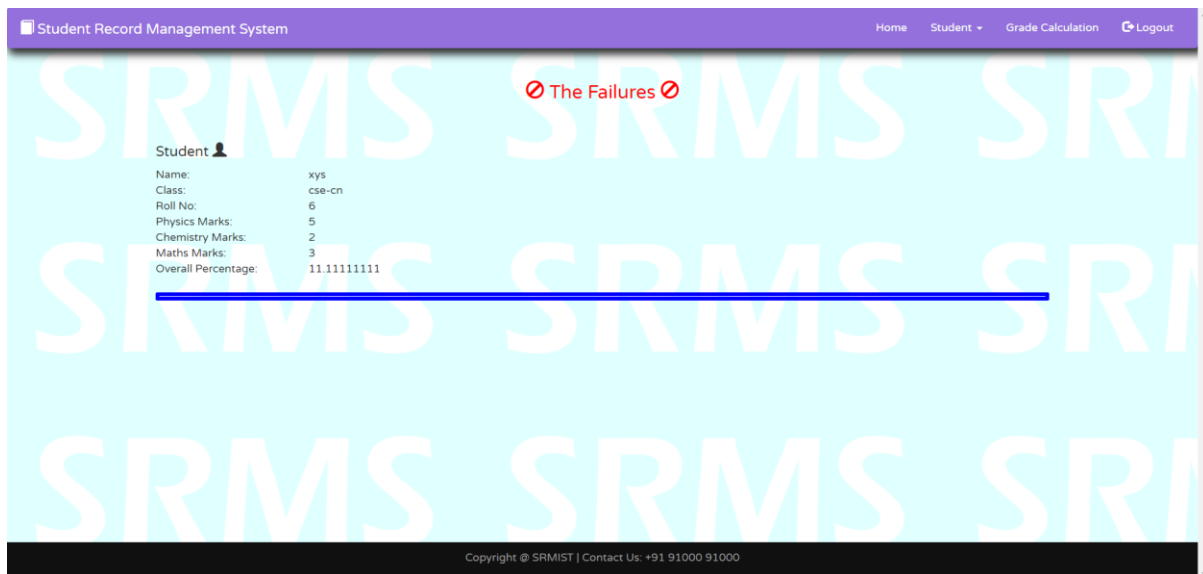
Display searched records (searched for roll number 2):



Display toppers:



Display failures:



Result:

Thus, the module3 was implemented and documented successfully.



DEPT. Of Computer Science Engineering

SRM IST, Kattankulathur – 603 203

Course Code: 18CSC206J

Course Name: Software Engineering and Project Management

| | |
|------------------------------|---|
| Experiment No | 11 |
| Title of Experiment | Master Test Plan, Test Case Design |
| Name of the candidate | ANUBHAV MISHRA |
| Team Members | ABHAY KUMAR PATEL Adithya Menon |
| Register Number | RA1911029010023, RA1911029010024, RA1911029010025 |
| Date of Experiment | 22/04/2021 |

Mark Split Up

| S.No | Description | Maximum Mark | Mark Obtained |
|--------------|--------------------|---------------------|----------------------|
| 1 | Test Plan | 5 | |
| 2 | Test Case | 5 | |
| Total | | 10 | |

Staff Signature with date

Aim: To Prepare master test plan and Test cases for testing the project

Team Members:

| Sl No | Register No | Name | Role |
|-------|-----------------|-------------------|--------|
| 1 | RA1911029010024 | ABHAY KUMAR PATEL | Lead |
| 2 | RA1911029010023 | ANUBHAV MISHRA | Member |
| 3 | RA1911029010025 | Adithya Menon | Member |

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Lab Session #11

1. Executive Summary

In this project, we are going to witness how PHP and SQL concepts can unite with front-end programming to create a working website. Here in this project Student Record Management System we will be taking advantage of the different functions that SQL allows us to perform on a database and we will fuse those functions to the front-end section of the website. In this project, the user can enter student records directly to the database after gaining access to it via our login system, and they can also delete, modify, and display all or any specific student record.

2. Test Plan

First, we need to check if the connection between our front-end and database is being established or not. We will know about the status by logging into the website. Then we need to perform a task in the website to ensure the working of the front-end and the back-end. We will ensure that by adding a student record.

2.1. Scope of Testing

Software testing is a matured process of verification or validation of software against the features, requirements or specifications, which are both functional as well as non-functional. It involves creating test plans, test specifications, test code development, execution of tests and checking the documentation. Also, making sure that the product code changes doesn't cause the regressions, which means failure of earlier working features.

Functional testing is a quality assurance process and a type of black-box testing that bases its test cases on the specifications of the software component under test. Functions are tested by feeding them input and examining the output, and internal program structure is rarely considered

Non-functional testing: is the testing of a software application or system for its non-functional requirements: the way a system operates, rather than specific behaviours of that system.

2.3. Types of Testing, Methodology, Tools

| Category | Methodology | Tools Required |
|-------------------------|-------------|-------------------------------|
| Functional Requirements | Manual | Local web server, web browser |

2.4. Test Deliverables

Analyse the product
Design the Test Strategy
Define the Test Objectives
Define Test Criteria
Resource Planning
Plan Test Environment
Schedule & Estimation
Determine Test Deliverables

3. Test Case

3.1. Functional Test Cases

| Test ID (#) | Test Scenario | Test Case | Execution Steps | Expected Outcome | Actual Outcome | Status | Remarks |
|-------------|----------------------------------|--|--|--|--|--------|---------|
| | Verify the login id and password | The password typed matches with the user's password, taking the user to main page. | 1. User clicks on the entry option. 2. User enters all details. 3. User clicks the conformation button | The details should be logged into the database. Success message should appear. | The outcome is exactly the same as the expected outcome. | Pass | success |
| | Verify the login id and password | The password typed doesn't match and error message is displayed. | 1. User Clicks on retry or opts to reset password. 2. User, if chosen for reset, clicks on reset link. | User will be logged in if password is correct on retry. Else new password is entered and is reset. | Correct output as described in expected output. | Pass | success |

3.2. Non-Functional Test Cases

| Test ID (#) | Test Scenario | Test Case | Execution Steps | Expected Outcome | | Actual Outcome | Status | Remarks |
|-------------|---------------|-----------|-----------------|------------------|--|----------------|--------|---------|
| 1 | Page | 1 | 5 | 1 | | 1 | pass | nil |
| 2 | server | 1 | 5 | 1 | | 1 | pass | nil |

4. Test Report Reference

1. <https://www.pmi.org/>

Result: Thus, the test plan and test cases are documented successfully



DEPT. Of Computer Science Engineering

SRM IST, Kattankulathur – 603 203

Course Code: 18CSC206J

Course Name: Software Engineering and Project Management

| | |
|------------------------------|---|
| Experiment No | 12 |
| Title of Experiment | Manual Testing with report |
| Name of the candidate | Anubhav Mishra |
| Team Members | ABHAY KUMAR PATEL Adithya Menon |
| Register Number | RA1911029010023, RA1911029010024, RA1911029010025 |
| Date of Experiment | 29/04/2021 |

Mark Split Up

| S. No | Description | Maximum Mark | Mark Obtained |
|--------------|--------------------|---------------------|----------------------|
| 1 | Manual Testing | 5 | |
| 2 | Report | 5 | |
| Total | | 10 | |

Staff Signature with date

Aim: To conduct manual test using Test cases and prepare test report for the project

Team Members:

| Sl No | Register No | Name | Role |
|-------|-----------------|-------------------|--------|
| 1 | RA1911029010024 | ABHAY KUMAR PATEL | Lead |
| 2 | RA1911029010023 | ANUBHAV MISHRA | Member |
| 3 | RA1911029010025 | Adithya Menon | Member |

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1. Executive Summary

In this project, we are going to witness how PHP and SQL concepts can unite with front-end programming to create a working website. Here in this project Student Record Management System we will be taking advantage of the different functions that SQL allows us to perform on a database and we will fuse those functions to the front-end section of the website. In this project, the user can enter student records directly to the database after gaining access to it via our login system, and they can also delete, modify, and display all or any specific student record.

2. Test Plan

First, we need to check if the connection between our front-end and database is being established or not. We will know about the status by logging into the website. Then we need to perform a task in the website to ensure the working of the front-end and the back-end. We will ensure that by adding a student record.

2.1. Scope of Testing

Software testing is a matured process of verification or validation of software against the features, requirements or specifications, which are both functional as well as non-functional. It involves creating test plans, test specifications, test code development, execution of tests and checking the documentation. Also, making sure that the product code changes doesn't cause the regressions, which means failure of earlier working features.

Functional testing is a quality assurance process and a type of black-box testing that bases its test cases on the specifications of the software component under test. Functions are tested by feeding them input and examining the output, and internal program structure is rarely considered

Non-functional testing: is the testing of a software application or system for its non-functional requirements: the way a system operates, rather than specific behaviours of that system.

2.3. Types of Testing, Methodology, Tools

| Category | Methodology | Tools Required |
|-------------------------|-------------|-------------------------------|
| Functional Requirements | Manual | Local web server, web browser |

2.4. Test Deliverables

Analyse the product
Design the Test Strategy
Define the Test Objectives
Define Test Criteria
Resource Planning
Plan Test Environment
Schedule & Estimation
Determine Test Deliverables

3. Test Case

3.1. Functional Test Cases

| Test ID (#) | Test Scenario | Test Case | Execution Steps | Expected Outcome | Actual Outcome | Status | Remarks |
|-------------|----------------------------------|--|--|--|--|--------|---------|
| | Verify the login id and password | The password typed matches with the user's password, taking the user to main page. | 1. User clicks on the entry option. 2. User enters all details. 3. User clicks the conformation button | The details should be logged into the database. Success message should appear. | The outcome is exactly the same as the expected outcome. | Pass | success |
| | Verify the login id and password | The password typed doesn't match and error message is displayed. | 1. User Clicks on retry or opts to reset password. 2. User, if chosen for reset, clicks on reset link. | User will be logged in if password is correct on retry. Else new password is entered and is reset. | Correct output as described in expected output. | Pass | success |

3.2. Non-Functional Test Cases

| Test ID (#) | Test Scenario | Test Case | Execution Steps | Expected Outcome | | Actual Outcome | Status | Remarks |
|-------------|---------------|-----------|-----------------|------------------|--|----------------|--------|---------|
| 1 | Page | 1 | 5 | 1 | | 1 | pass | nil |
| 2 | server | 1 | 5 | 1 | | 1 | pass | nil |

4. Test Report

| Category | Progress Against Plan | Status |
|------------------------|-----------------------|-------------|
| Functional Testing | Green | Completed |
| Non-Functional Testing | Red | completed |
| Sample Testing | Red | In/progress |

| Functional | Test Case Coverage (%) | Status |
|------------|------------------------|-----------|
| Module ID | 30% | Completed |
| Server ID | 40% | Completed |

Reference

1. <https://www.pmi.org/>

Result: Thus, the software test conducted and documented the report successfully.