Software Requirements Specification

for

Mtech Project Coordination System

Version 1.0

Prepared by **Team Number: 02**

Course : Topics in Database Design

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Revisions

Version	Primary Author(s)	Description of Version	Date Completed
1.0	Gaikwad Pradnya Sangitbabu Ritika Jaiswal Nair Akshay Sunilkumar Nerella Akhil Muhammed Raneesh C M George T L Deeraj U	Identified the features to be included in the application along with different users and user specific functionalities.Finalized the technologies to be used and basic structure of the application was designed along with the user interfaces.	17/02/24

1 Introduction

The “M.Tech Project Coordination System” serves as a platform for carrying out various project related activities instead of having different means or channels for their conduction.Its main features includes creating report submissions, evaluations, committee formations for the evaluations, tracking the progress of the evaluations and scheduling meetings.It automatically forms the committees for the evaluation of each student which if done manually would be very hectic and time consuming. Tracking of student evaluations would give an overview of the pending projects to be evaluated. Also a summary of the grades of all students can be generated by the project coordinator.The marks for the evaluations would be submitted by the chairperson of the committee for each of the evaluations which can later be viewed by the student. Therefore,the application aims to cover the important aspects and activities required for the project coordination and their conduction.

1.1 Document Purpose

The primary purpose of this document is to provide an overall guide for the users to know about the “M.Tech Project Coordination System” . It is a communication medium for the students, guide, Program Coordinator, and committee chairman to find a detailed understanding of the functionalities, specifications, and system requirements. If the viewer is a developer, admin, or an end-user, it gives the insights to develop and deploy a software project. This document covers entirely all the key features such as user authentication, student project tracking, Guide

workflow, meeting tracking,marks and comments tracking, attendance tracking and evaluation of students . It also gives an overview of the interfaces of the application.

1.2 Product Scope

The M.Tech Project Coordinator System has been developed to provide an intuitive and efficient platform for M.Tech project coordinators, simplifying the management of project-related tasks.The platform empowers students to upload their project within due time and date, which is routed to the guide for approval. Only after the approval , the student evaluation is proceeded, else the student will get some modification alert for uploading the project again.Once the guide approves the project report of a student, the student needs to present the project in front of committee members for further evaluation.The system allows coordinators to monitor the progress of project evaluations, view detailed reports, and generate grades and form committees. For every student in a committee , four persons will be there including project guide, chairperson and two experts.The committee chief is responsible for submitting marks of students.

1.3 Intended Audience and Document Overview

This Software Requirements Specification(SRS) document serves diverse types of readers with specific roles and responsibilities. The primary audience includes:

Developers: This document provides a detailed understanding of the system's functional and non-functional requirements, enabling them to design, code, and test the application effectively.

Administrators: System Administrators will find the system non-functional and performance requirements for the maintenance.

End Users(Students, Guide, Project coordinator ,Committee Members): End users will find this document very useful in understanding how to use the application effectively.

Viewers: This will also help viewers as a reference for them to create their own documents for projects.

The rest of the SRS document is organized starting with the overall description in Section 2 which includes the Product overview followed by the Functionalities used for the application and then the Design and Implementation Constraints of the project. Section 2 concludes with Assumptions and Dependencies, Section 3 contains the specific requirements such as user

interfaces and functional requirements in detail and use cases in detail which consists of pre and post-conditions of each use case and flow in each use case. Section 4 addresses Other Non-functional requirements such as Performance requirements, Safety, and Security requirements. This organized document helps viewers to understand the document to the fullest extent.

1.4 Definitions, Acronyms and Abbreviations

- NITC: National Institute of Technology Calicut
- CSV: Comma Separated Values
- UML: Unified Modeling Language
- ER: Entity Relationship Diagram

1.5 Document Conventions

This SRS document used standard typographical conventions.It includes usage of bold and clear headings and subheadings for easy navigation and usage of bullet points for important notes and also naming use cases consistently.All the abbreviations are expanded upon first use and then used abbreviations in later sections.The font size used is 12 and font name used is Times New Roman which is fondly used in Research papers.These conventions enhance the readability of document and maintains consistency and also the main points are presented in easily accessible and readable format in the document.

1.6 References and Acknowledgments

https://www.geeksforgeeks.org/how-to-write-a-good-srs-for-your-project/

2 Overall Description

2.1 Product Overview

Currently the M.Tech project related activities are carried out through the NITC eduserver. With the limited functionality of making announcements and creating submissions, it is quite evident that the eduserver cannot be used for the complete coordination and management of the project activities. There is a need for a platform that can encompass all the necessary aspects of the M.Tech projects activities and provide its hassle free conduction. Therefore, an application "M.Tech Project Coordination System" can be developed in order to carry out the project related tasks and provide more essential functionalities. Some of the major functionalities of the application include progress tracking, meeting scheduling, report submissions, panel formations for evaluations and grading. Thus the application would be beneficial to effectively deal with the Mtech project management.

2.2 Product Functionality

- Authentication of different users of the application

User - Project Coordinator

- Form committees
- View status of the evaluations
- View the grades of the whole batch
- View the suggestions given for the committee formation from the guides

User - Guide

- Add students under them
- Approve or suggest modifications for the submitted reports
- Schedule the evaluations
- Give suggestions to the Project coordinators for the committee formation if they want to

User - Chairperson

- Enter the comments for the evaluations
- Enter the marks for the evaluations
- Enter the minutes

User - Students

- Upload the reports
- View the marks

2.3 Design and Implementation Constraints

1. Users with valid credentials should be able to access the platform.
2. The platform should be easily accessible 24x7 through any device that uses an internet browser.
3. Only the functionalities specific to the users should be available to them.
4. Users should not be able to access the data of other users.
5. With the given complexity,the platform should still be user friendly.
6. The system should be scalable.
7. The system would be constrained to the Django,React and My sql standards of implementation.

2.4 Assumptions and Dependencies

Assumptions-

- All the users are from NITC having official email ids.

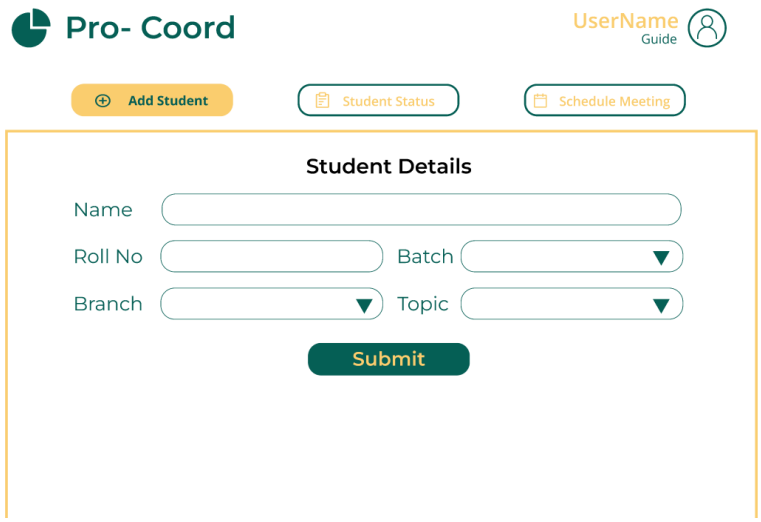
Technologies to be used-

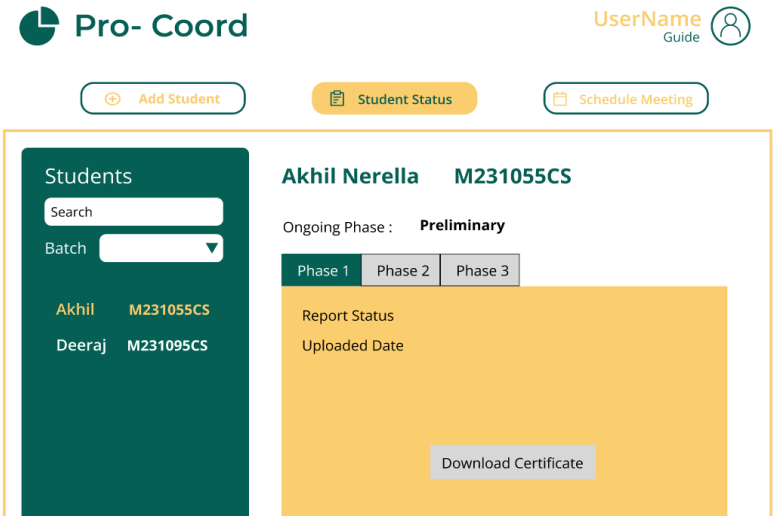
- Django
- React
- My Sql

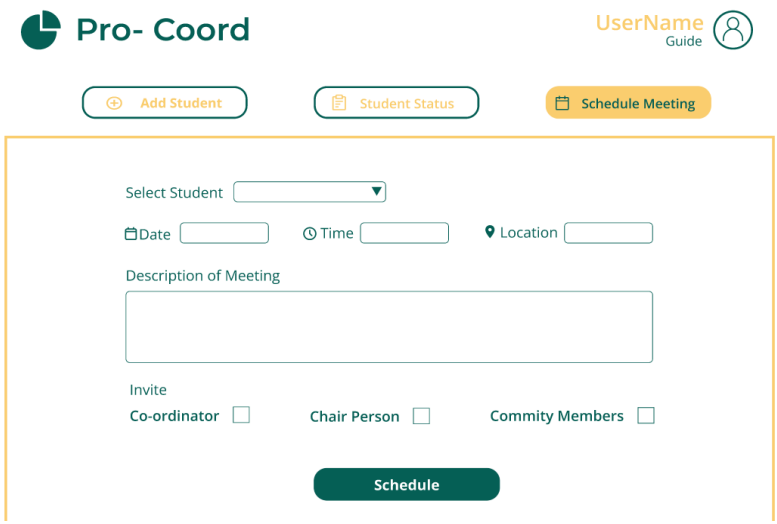
3 Specific Requirements

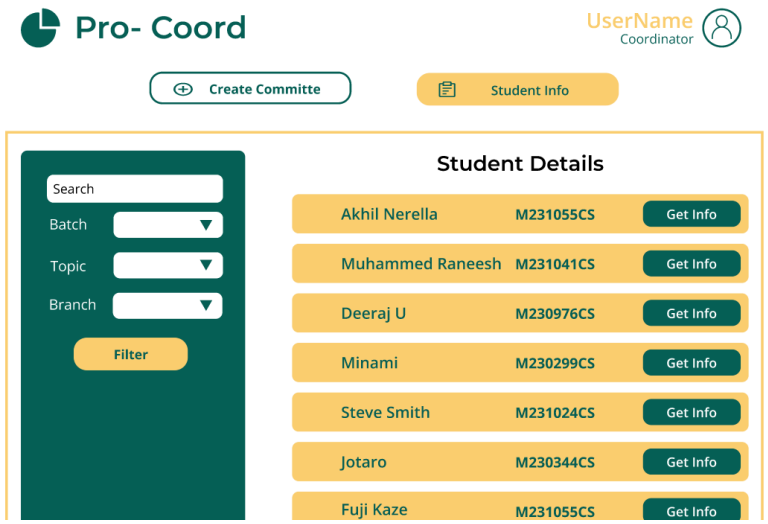
3.1 External Interface Requirements

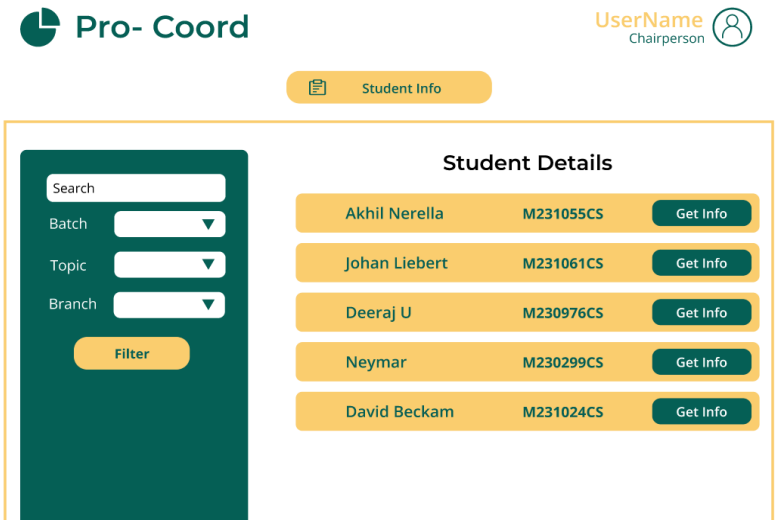
3.1.1 User Interfaces

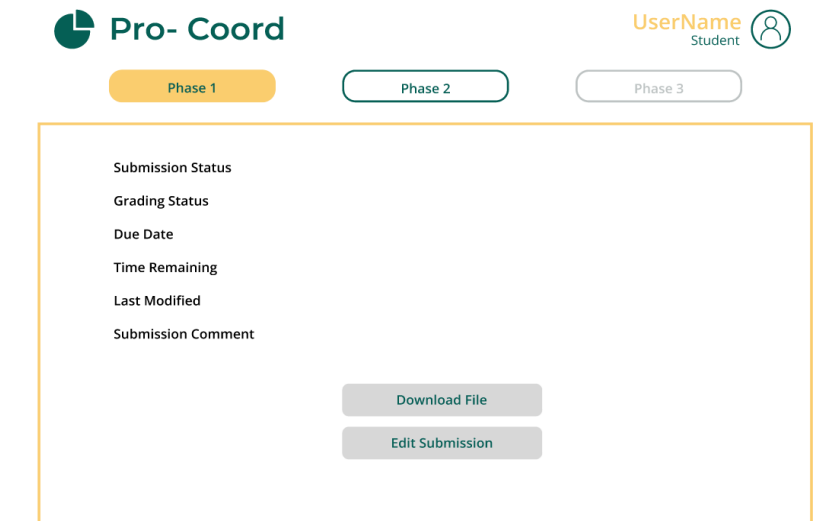


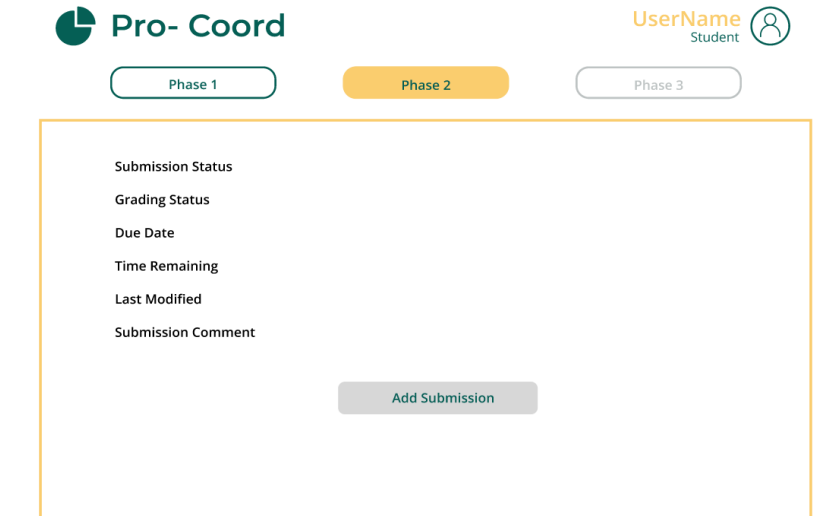



Pro- Coord
UserName
Guide
Add Student
Student Status
Schedule Meeting
Select Student
Date
Time
Location
Description of Meeting
Invite
Co-ordinator
Chair Person
Commity Members
Schedule


Pro- Coord
UserName
Coordinator
Create Committe
Student Info
Search
Batch
Topic
Branch
Filter
Student Details
Akhil Nerella M231055CS Get Info
Muhammed Raneesh M231041CS Get Info
Deeraj U M230976CS Get Info
Minami M230299CS Get Info
Steve Smith M231024CS Get Info
Jotaro M230344CS Get Info
Fuji Kaze M231055CS Get Info


Pro- Coord
UserName
Chairperson
Student Info
Search
Batch
Topic
Branch
Filter
Student Details
Akhil Nerella M231055CS Get Info
Johan Liebert M231061CS Get Info
Deeraj U M230976CS Get Info
Neymar M230299CS Get Info
David Beckam M231024CS Get Info


Pro- Coord
UserName
Student
Phase 1
Phase 2
Phase 3
Submission Status
Grading Status
Due Date
Time Remaining
Last Modified
Submission Comment
Download File
Edit Submission


Pro- Coord
UserName
Student
Phase 1
Phase 2
Phase 3
Submission Status
Grading Status
Due Date
Time Remaining
Last Modified
Submission Comment
Add Submission

3.1.2 Hardware Interfaces

The system does not include any hardware interfaces for its implementation and hence not required.

3.1.3 Software Interfaces

The software product is designed as a standalone web application, and as such, it does not have explicit dependencies on other specific software components. Therefore, there are no software interfaces to describe in this context.

The system operates independently, managing all functionalities related to academic project evaluation within its own environment without relying on external software components.

3.2 Functional Requirements

F0:User Authentication
The system provides user authentication functionality and allows students, faculty & coordinator to log in securely. User Authentication is done by Google Auth from the college accounts.

F1:Faculty chooses Role
After Faculty logs in,the system provides two options to Faculty where they can take the role of Guide or a Chairperson.

F2:Guide Selecting Students
Guides select the students offline and Guides are given access to select the students on the system such that they can further communicate on the system.

F3:Guide Report Approval / Comment
The system shall provide the Guide to review the report of the student's project and the functionality to approve the report or Comment about the report.

F4:Guide Schedule Meeting
Guides can schedule a meeting about the project for each student for his/her evaluation and a mail will be sent to the respective student, chairperson & committee members with details regarding the meeting.

F5:Guide suggests Coordinator
Guide will have the option to suggest coordinator about the committee members & chairperson such that Coordinator can form a committee based on it.

F6: Upload the preliminary report
The Student can upload their preliminary report of mid sem and end sem which can be then verified by their respective guide.

F7:View Progress of Report for Students
The system allows the Student user to check the remarks given by Guide i.e. it shows whether its approved or marked for comments.

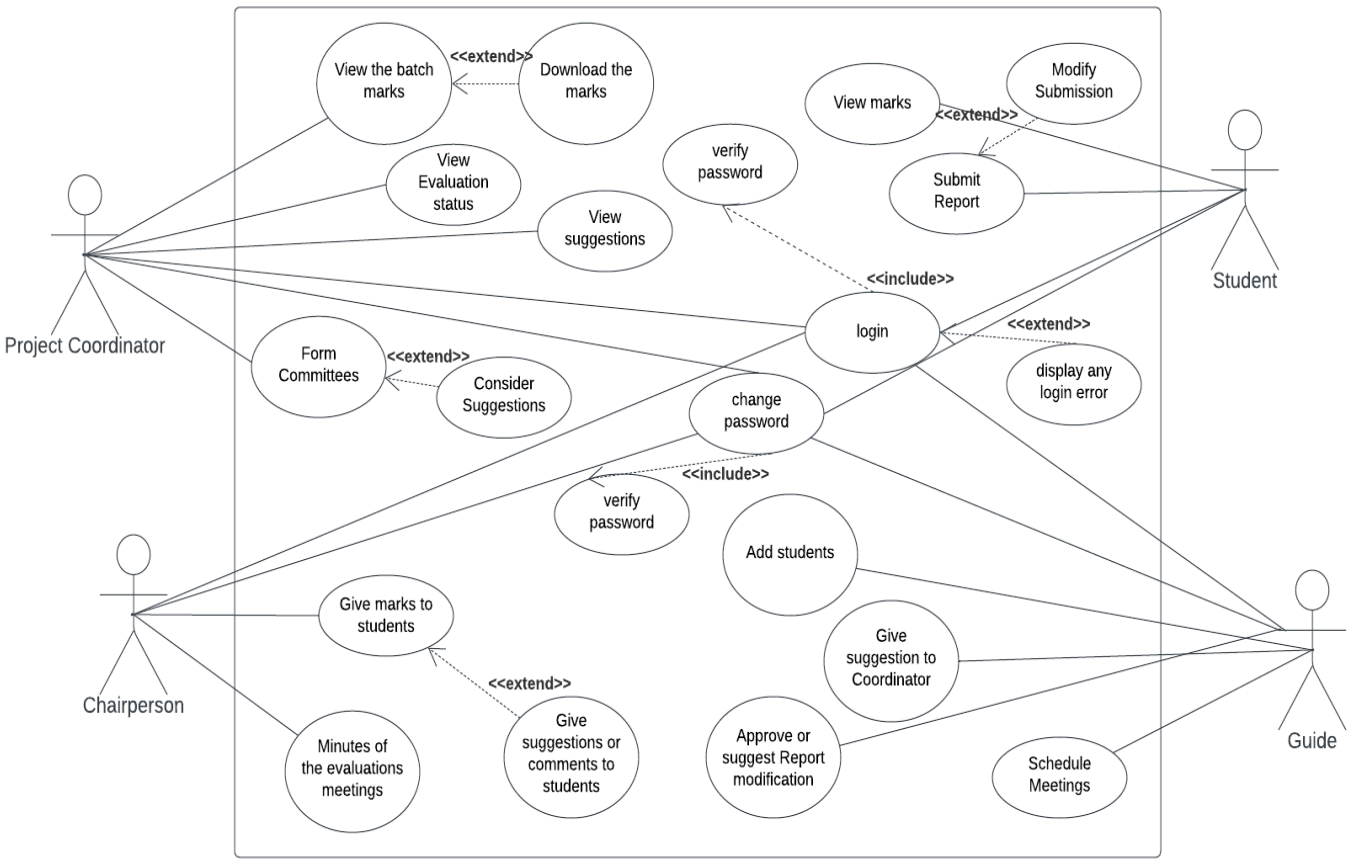
F8:View Progress of Project Evaluation
The system allows the Student & coordinator user to check the marks & minutes Of Meeting of the evaluation done in the meeting.

F9: Creating a committee
The system allows the coordinator to create a committee for each student based on the suggestion given by the guide or research area.

F10: Enter Marks by chairperson
The System allows the chairperson to evaluate the student based on his performance throughout the project and he has access to give feedback about the project & minutes of the meeting through the system to students.

F11: View and download the grades
The system should allow to view and download the grade for individual report as well as summary view for all reports submitted by them

3.3 Use Case Model



3.3.1 Use Case #1 (User Validation – U1)

Author – Nerella Akhil

Purpose - The base objective of the use case is to check whether the person who is trying to log in is a valid person or not.

Requirements Traceability – Fn0 is used in this case.

Priority - Its Priority is High.

Preconditions - The user who is trying to log in to the website must login from a college account.

Post conditions - After logging in, it will show all the required data belonging to the particular user's role.

Actors – Student, Faculty,Coordinator

Flow of Events

- **Basic Flow**
    a. The website will be loaded into the web browser
    b. The user will login with his/her login credentials
    c. After validation of the credentials, the respective data will be displayed.
- **Exceptions**
    a. If the user doesn't have an existing account.

3.3.2 Use Case #2 (Guide Selects Students)

Author – Nerella Akhil

Purpose - The base objective of the use case is that a guide should be able to choose his/her students doing projects under his guidance.

Requirements Traceability – Fn0 , Fn1 is used in this case.

Priority - Its Priority is High.

Preconditions - The user has to login via faculty's credentials and should be chosen Guide's Role.

Post conditions - Students selected by the guide have to be stored in the database and students should also be able to see their guide's information in the portal.

Actors – Guide

Flow of Events

- **Basic Flow**
    a. Faculty logs in with his/her login credentials
    b. Chooses his role as Guide.
    c. Faculty selects Students using the search & dropdown option given and also give suggestions based on their requirements.
- **Exceptions**

a. Throws error at various instances such as if the student being searched is not present in the database.

3.3.3 Use Case #3 (Guide Report Approval / Comment)

Author – Nerella Akhil

Purpose - The base objective of the use case is that a guide should be able to review the report of the student's project and approve or comment about the report

Requirements Traceability – Fn0 , Fn1, Fn2, Fn3 is used in this case.

Priority - Its Priority is High.

Preconditions - The user has to login via faculty's credentials and should be chosen Guide's Role and also should have selected the student he wants to review the report.

Post conditions - Students get notification tha faculty has reviewed the report & it should be shown on that particular student's side portal.

Actors – Guide

Flow of Events

- **Basic Flow**
  a. Faculty logs in with his/her login credentials
  b. Chooses his role as Guide.
  c. Faculty selects a student from his list & then one should select the report that he wants to review.
  d. Guide has an option whether to approve or comment on the report based on his review.
- **Exceptions**
  a. Throws error at various instances such as if the student being searched is not present in the database.

3.3.4 Use Case #4 (Guide Schedule Meeting)

Author – Nerella Akhil

Purpose - The base objective of the use case is that a guide should be able to schedule a meeting about the project for each student for his/her evaluation.

Requirements Traceability – Fn0 , Fn1,Fn4 is used in this case.

Priority - Its Priority is High.

Preconditions - The user has to login via faculty's credentials and should be chosen Guide's Role and also should have selected the student for whom he wants to evaluate based on the meeting.

Post conditions - Students,Committee Members & Chair person has to get notification regarding the meeting and details regarding the meet.

Actors – Guide

Flow of Events

- **Basic Flow**
    a. Faculty logs in with his/her login credentials
    b. Chooses his role as Guide.
    c. Faculty selects a student from his list & then opts Schedule Meeting and chooses time & date for the meeting and hits the send button.
- **Exceptions**
    a. Throws error at various instances such as if the student being searched is not present in the database.

Use Case #5 (Upload Preliminary Report)

Author – Akshay Nair

Purpose - The purpose of this use case is to enable students to contribute their preliminary reports for both End Semester and Mid Semester assessments, facilitating the evaluation process.

Requirements Traceability – Fn0, Fn6 is used in this case.

Priority - Its Priority is High.

Preconditions

a. The student must be logged into the system.
b. The student has chosen a guide

Post conditions -

a. The uploaded report is stored in the system.
b. The guide receives a notification about the uploaded report.
c. The guide can review and provide feedback (approval or rejection with comments).

Actors – Student, Guide

Flow of Events

- **Basic Flow:**

  1. Student Action:

  a. The student logs into the system.
  b. The student navigates to the "Upload Report" section.
  c. The student uploads the preliminary report.

  2. System Action:

  a. The system stores the uploaded report in the database.
  b. The system sends a notification to the guide about the uploaded report.

  3. Guide Action:

  a. The guide receives an email about the uploaded report.
  b. The guide logs into the system.
  c. The guide reviews the report and has the option to approve or reject it with comments.

Expectations:

a. The system ensures a secure and efficient upload process.
b. The guide receives timely email about the uploaded reports.
c. The guide can provide feedback in the form of approval or rejection with constructive comments.

Use Case #6 (Viewing the Status of Report)

Author – Akshay Nair

Purpose:

The purpose of this use case is to allow students, guides, and coordinators to view the status of submitted reports, providing transparency and insight into the evaluation process.

Requirements Traceability: Fn0 is used in this case.

Preconditions:

a. The user (student, guide, or coordinator) must be logged into the system.

Postconditions:

a. The current status of the report (Pending, Approved, Rejected) is displayed.

Actors: Student, Guide, Coordinator

Flow of Events:

. **Basic Flow:**

1. User Action:

a. The user navigates to the "Report Status" section.
b. The system displays the status of the submitted report (Pending, Approved, Rejected).

Expectations:

a. The system provides real-time feedback on the status of reports.
b. The coordinator can use the batch-level view to monitor the overall status of reports for the entire batch.

Use case #7 (Creating a Committee)

Author – Akshay Nair

Purpose:

The purpose of this use case is to enable coordinators to create committees for project evaluations, ensuring a well-structured evaluation process.

Requirements Traceability: Fn0, Fn9 is used in this case.

Preconditions:

a. The coordinator must be logged into the system.

Postconditions:

a. A committee is created with specified members (guide, experts, chairperson).

Actors: Coordinator

Flow of Events:

Basic Flow:

1. Coordinator Action:

a. The coordinator navigates to the "Create Committee" section.
b. The system prompts the coordinator to specify committee members.
c. The coordinator selects a guide, two experts, and a chairperson.
d. The system creates the committee with the selected members.

Expectations:

a. The system ensures a straightforward process for creating committees.
b. The coordinator can easily select and assign members to the committee.

Use case #8: Schedule Meeting

Author – Akshay Nair

Purpose:

The purpose of this use case is to allow guides to schedule meetings with committee members and notify them through email, facilitating effective communication during the project evaluation process.

Requirements Traceability: Fn0, Fn4 is used in this case.

Preconditions:

a. The guide must be logged into the system.
b. A committee must be formed, including the guide, experts, and chairperson.

Postconditions:

a. A meeting is scheduled.
b. Notifications are sent to committee members via email.
c. The student receives a meeting notification.

Actors: Guide

Flow of Events:

Basic Flow:

1.Guide Action:

a. The guide navigates to the "Schedule Meeting" section.
b. The system prompts the guide to provide meeting details, including date, time, and agenda.
c. The guide schedules the meeting.
d. The system sends email notifications to committee members, including experts and the chairperson.

2. Email Notifications:

a. Committee members receive email notifications with meeting details.

3. Student Notification:

a. The system also sends a meeting notification to the student, including meeting details.

Expectations:

a. The system ensures a user-friendly interface for guides to schedule meetings.
b. Email notifications are sent promptly to committee members with accurate meeting details.
c. The student receives a timely meeting notification.

Use Case #9 (Enter Marks by Chairperson)

Author – Akshay Nair

Purpose:

The purpose of this use case is to allow chairpersons to enter marks for students, facilitating the grading process.

Requirements Traceability: Fn0, Fn10 is used in this case.

Preconditions:

a. The chairperson must be logged into the system.

Postconditions:

a. Marks are entered and stored in the system.

Actors: Chairperson

Flow of Events:

Basic Flow:

1. Chairperson Action:

a. The chairperson navigates to the "Enter Student Marks" section.
b. The system prompts the chairperson to enter marks for each student.
c. The chairperson enters the marks for the respective students.
d. The system stores the entered marks.

Expectations:

a. The system provides a user-friendly interface for chairpersons to enter and submit student marks.
b. The chairperson can easily navigate through the grading process.

Use case #10 (View and Download Grades)

Author – Akshay Nair

Purpose:

The purpose of this use case is to allow chairpersons to view and download grades for students, ensuring accessibility to evaluation results.

Requirements Traceability: Fn0, Fn11 is used in this case.

Preconditions:

a. The chairperson must be logged into the system.

Postconditions:

a. The chairperson can view and download grades.

Actors: Chairperson

Flow of Events:

Basic Flow:

1.Chairperson Action:

a. The chairperson navigates to the "View and Download Grades" section.
b. The system displays the grades for each student.
c. The chairperson has the option to download the grades.

Expectations:

a. The system provides a clear view of student grades for the chairperson.
b. The chairperson can easily download the grades for further reference.

4 Other Non-functional Requirements

4.1 Performance Requirements

- The website should not take more than 10 seconds to load even if there are multiple user logins simultaneously.
- The website should be able to handle 2,000 user logins in a week to accommodate graduating students.
- Response time for generating grade reports and accessing data related to students should be minimal for the coordinator.
- The system can be scaled easily depending on the user traffic.

4.2 Safety and Security Requirements

- The students should be able to upload reports only after the guide selects the particular student.
- The Students should not be able to modify/change any data given by the system from Guides & Chair person.
- Each Report that student submits can be verified later using the unique ID in the certificate.
- The password(if used) is not directly stored in the database, instead, a secure hashing algorithm to maintain the confidentiality and integrity of the users.
- The system should be safe from common web application security threats like cross-site scripting, SQL injection attacks, etc.

4.3 Software Quality Attributes

4.3.1 Availability

The Website should have a high level of availability and be operational 24/7 with minimal scheduled maintenance.

4.3.2 Compatibility

The Website should be compatible with various browsers and Operating systems to ensure broad accessibility.

4.3.3 Usability

The user interface of the website should be user-friendly and Intuitive and the user should be able to navigate with minimal effort.

5 Other Requirements

NIL

Appendix A - Activity Log

Appendix A - Activity Log

Three meetings were conducted in total.

1. Offline meeting on 12-02-2024 from 5:00 pm to 5:30 pm.
2. Offline meeting on 14-02-2024 from 5:30 pm to 6:00 pm.
3. Offline meeting on 15-02-2024 from 11:00 am to 11:30 am.

Things discussed in 1st meeting :

Understanding the Problem Statement.
Understanding Functionality of different users.
Process/Flow of Mtech Project Coordinate System - discussed and finalized with the Madhu Kumar Sir

Things discussed in 2nd meeting:

Fixed about the rough idea of each role and their functionalities.
The rough idea of Design.
Discussed the use cases in depth.

Things discussed in 3rd meeting:

Division of work for SRS document.

Member - Contribution

Pradyna Gaikwad:

Defining the Use Cases and Requirements.
Defining the basic structure of Website Design.
Defining the basic structure of Database Design.
Helping in writing different sections of the document.
Proof-reading the document.

Nerella Akhil:

Defining the Use Cases.
Discussed & Written Functional Requirements & Use cases sections in the document.
Discussed & Written Other Non Functional Requirements section which includes Performance,Software Quality Attributes etc.

Akshay Nair:

Defining the Use Cases.
Written Functional Requirements & Use cases sections in the document.
Discussed & Written Other Non Functional Requirements section which includes Performance,Software Quality Attributes etc.

Muhammed Raneesh CM:

New ideas for the design of the website.

Designing User interfaces for the system.

Ritika Jaiswal:

Authored Section 1:Introduction
Helping in making flowchart of application
Contribution in working of website internally

Deeraj U:

Authored Section 3.1.2: Hardware Interfaces
Revised and formatted Section 3.1.3: Software Interfaces
Conducted research on industry standards for SRS document formatting
Implemented consistent font styles and formatting throughout the document

George TL:

Identified and meticulously documented key use cases, aligning project goals with specific scenarios specified in the use cases.
Clearly defined project boundaries, preventing scope creep.
Conducted a comprehensive assessment of limitations, with respect to time and expertise of the group and set achievable goals accordingly.