Requirements Document for Project Module Management System

1. Introduction

This document outlines the requirements for the development of a Project Module Management System. This system is aimed at facilitating the management and assessment of a year-long (two semesters) project module, which is offered to students following their degree program in the following specializations: Information Technology (IT), Software Engineering (SE), Information Systems (IS), Cyber Security (CS), Data Science (DS), and Computer Systems and Network Engineering (CSNE). In this module, students are expected to form a team of four members. Ideally, a team should consist of students from the same specialization. However, there can be instances where a team consists of students from different specializations.

Generally, the project consists of four presentations: Proposal, Progress 1, Progress 2, and Final. Each presentation panel would comprise three staff members, known as examiners. Each examiner will simultaneously access the marks entering sheet to enter the marks of the students for each presentation.

In addition to presentations, there are several reports such as topic assessment form, project charter, status document 1, log book, proposal document, status document 2, and final thesis. Staff members appointed as supervisors and co-supervisors will simultaneously enter marks for these reports.

In addition to the project coordinator, there are several staff members who are involved with project module who are known as ‘Project Members’.

The system will streamline the process of recording marks, scheduling presentations, managing reports, and overseeing project progress.

2 Functional Requirements

2.1 User Roles and Permissions

- **Project Coordinator:**
    - Access to all functionalities of the system including the addition of new users.
    - Grant permission to students to view the semester 1 and semester 2 marks.
    - Assign project members to create presentation schedules and marking rubrics for presentations and reports.
    - Viewing and editing rights for generated mark sheets.
    - Add new assessments to the system and delete or modify existing assessments.

    - Search for a particular group based on the project number and retrieve the marks that each student in that group has received for each assessment, along with the comments provided by the examiners for each presentation, and the comments provided by the supervisors or co-supervisors for each report.
    - Create marking rubrics for each presentation using the system and share them with the examiners to enter the marks that each student obtains for each presentation.
    - Create marking rubrics for each report using the system and share them with the supervisors and co-supervisors to enter the marks that each student obtains for each report.
- **Project Members:**
    - Create presentation schedules by grouping examiners into different panels. Project members have the option of selecting all the examiners of the faculty from a dropdown list and selecting three of them at once to form a presentation panel.
    - Create marking rubrics for each presentation using the system and share them with the examiners to enter the marks that each student obtains for each presentation.
    - Create marking rubrics for each report using the system and share them with the supervisors and co-supervisors to enter the marks that each student obtains for each report.
    - Add new assessments to the system and delete or modify existing assessments.
- **Examiners:**
    - Enter marks that each student obtains for proposal, progress 1, progress 2, and final presentations.
    - Search for marks that each group obtained for proposal, progress 1, progress 2, and final presentations.

- **Supervisors and Co-supervisors:**
    - Enter marks that each student obtains for the following reports : status document 1, log book, proposal, status document 2, and final thesis.
    - Search for projects they are supervising based on the names, registration numbers, contact numbers, and specializations (IT, SE, IS, CS, DS, or CSNE) of the students.
    - While supervisors should be able to assess and provide marks and feedback on the following reports: status report 1, proposal document, status report 2, log book, and final thesis, co-supervisors should be able to assess and provide a separate mark for the groups they co-supervise.

- **Students:**
    - Register project groups by entering the following information for each student in the project: name, registration number, contact number, email address, batch (Regular or June), and specialization (IT, SE, IS, CS, DS, or CSNE). Additionally, include the name and registration number of the project leader, project title, research area of the project, research group to which the project belongs (Machine Learning, Natural Language Processing, Intelligent Systems, or Robotics), and select the names of their supervisors and co-supervisors from a dropdown list.
    - Along the project group number and enter the following details regarding their research paper publication into the system:
        - Title of the research paper.
        - Students, supervisors, and co-supervisors involved with the paper from dropdown lists.
        - Name of the conference or journal.
        - ISSN number of the journal (if applicable).
        - Link to Google Scholar to view the H5-Index, or a link to Scimago Journal Ranking to view the H-index of the conference or journal.
        - Link to the Scopus site to verify the Scopus indexing of the journal or conference.
        - Photo of the acceptance letter and reviewer sheet (optional) received from the conference or journal.
        - Photo confirming successful registration at the conference or journal.
        - Registration fee paid for the conference or journal in LKR or USD.
    - Once permission is granted by the project coordinator:
        - In the first semester, view the total marks obtained for the following assessments Proposal and Progress 1 presentations, status report 1, and proposal document.
        - In the second semester, view the total marks obtained for the following assessments : Progress 2 presentation, Final presentation, status report 2, log book, website, and final thesis.

2.2 Research Paper Publication

- Once the details regarding the research paper publication have been entered, the system should scan the photo uploaded confirming successful registration at the conference or journal and identify whether it's a genuine registration to the correct journal or conference mentioned by a student.
- Unless granted special permission by the project coordinator or project members, only one student from a group is allowed to enter details regarding their research paper publication.

2.3 Mark Sheet Generation

- **Comprehensive Mark Sheet:**
    - Can only be viewed and edited by the project coordinator.
    - Once marks for all the assessments (all presentations and reports) have been entered, the system should generate a detailed mark sheet that shows the registration number and names of the students, project group number, marks obtained for each assessment, total marks, grade, pass/fail status.
    - Project coordinator should be able to filter students based on their project group number, grades obtained, batch, and pass/fail status. Additionally, he should be able to retrieve the counts and percentages of pass and fail statuses, counts and percentages for each grade, and generate a bell curve based on the grades. Furthermore, he should be able compare the current year’s pass/fail and grade counts and their percentages with the previous year data.

3. Non-Functional Requirements

- **Security:**
    - Implement role-based access control to ensure data privacy and integrity.
    - Authenticate users securely.
- **Scalability:**
    - Design the system to accommodate a growing number of users and projects.
- **Usability:**
    - Ensure an intuitive user interface for ease of navigation and interaction.
- **Performance:**
    - Optimize system performance to handle simultaneous marking and assessment activities.