SOFTWARE REQUIREMENT SPECIFICATION

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ROLL NO : 7376221CS146

SEAT NO : 47

PROJECT ID : 7

PROJECT TITLE : PROJECT WORK MARK CONSOLIDATION SYSTEM

1. TECHNICAL COMPONENTS :

COMPONENT	TECH STACK
Backend	Node JS with Express JS
Frontend	React JS
Database	MongoDB (NOSQL Database)
API	OpenAPI

2. IMPLEMENTATION TIMELINE :

PHASE	DEADLINE	STATUS	NOTES
Stage 1	02/05/24	Completed	Planning and resource gathering
Stage 2			Design and UI/UX development
Stage 3			Database design and implementation
Stage 4			Backend development
Stage 5			Integration and testing
Stage 6			Deployment

3. PROBLEM STATEMENT :

Build a system for calculating project reviews mark for individuals based on the constraint given by the admin. The calculated mark must be displayed in the individual student login. Provide analytics and reporting capabilities for data analysis.

- Manual calculation of the project review mark is time consuming, hence slowing down the whole process of project review.
- The admin is not able to view a statistical report for data analysis.
- The students are not able to see their project review marks fastly.
- The guides are not able to track the mark of students under their guidance.

  Constraints:
- The system needs to calculate the difference mark for each student that is **max(PMC1,PMC2,PMC3) - min(PMC1,PMC2,PMC3).**
- If the difference mark is above 10% of the PMC **(difference > PMC*10/100)** mark then the students must be listed to the admin and the admin will re enter their moderation marks.
- Calculate the overall mark :

  final mark = (moderation mark / the avg of PMC marks) + guide mark.

4. PROJECT FLOW :

A. PURPOSE :

To automate the project review mark calculation process and display the final marks to admin, students and guides.

B. SCOPE :

- A portal for office academics admin, students (Semester 7 and semester 8) and faculties.
- The system will automate the mark calculation and lists the students who need moderation.
- After the moderation marks are entered by the admin, the marks are displayed to the students and their guides.
- Overall report and analytics is displayed to the admin.

C. BUSINESS CONTEXT :

- Increasing organizational efficiency.
- Reducing the time consumption of the overall process.
- Primary stakeholders : Admin, Students (Semester 7 and semester 8), guides.

D. CONSIDERATION :

- The details in the excel sheet that is uploaded by the admin is correct / error free.
- Addressing organizational efficiency and reducing time consumption.

E. DEPENDENCIES :

- Integration with Google OAuth for user authentication.
- Depends on the input file given.

F. USER PERSONAS :

- Admin : Needs an effective system for easy mark calculation and analytics.
- Students : To view their review marks faster.
- Faculty/Guide : To track the mark of students under their guidance.

G. USER STORIES :

- As an admin, I want an effective system which automates the mark calculation to make the process fast.
- As a student, I want to get to know my project review mark faster.
- As a faculty member, I want to know the mark of students under my guidance.

H. FUNCTIONAL REQUIREMENTS :

- User Authentication: Implement Google OAuth integration for user authentication as a functional requirement.
- Mark Calculation Algorithm: Develop a robust algorithm based on admin-provided constraints to calculate project review marks accurately.
- Student Dashboard: Provide a user-friendly dashboard for students to view their project review marks promptly upon calculation.
- Admin Panel: Create an intuitive admin panel for uploading project review data, moderating marks, and accessing analytics and reports.

- Guide Access: Enable guides to access the marks of students under their guidance through a designated interface.
- Analytics and Reporting: Develop comprehensive analytics and reporting capabilities for admins to analyze project review data and generate statistical reports.

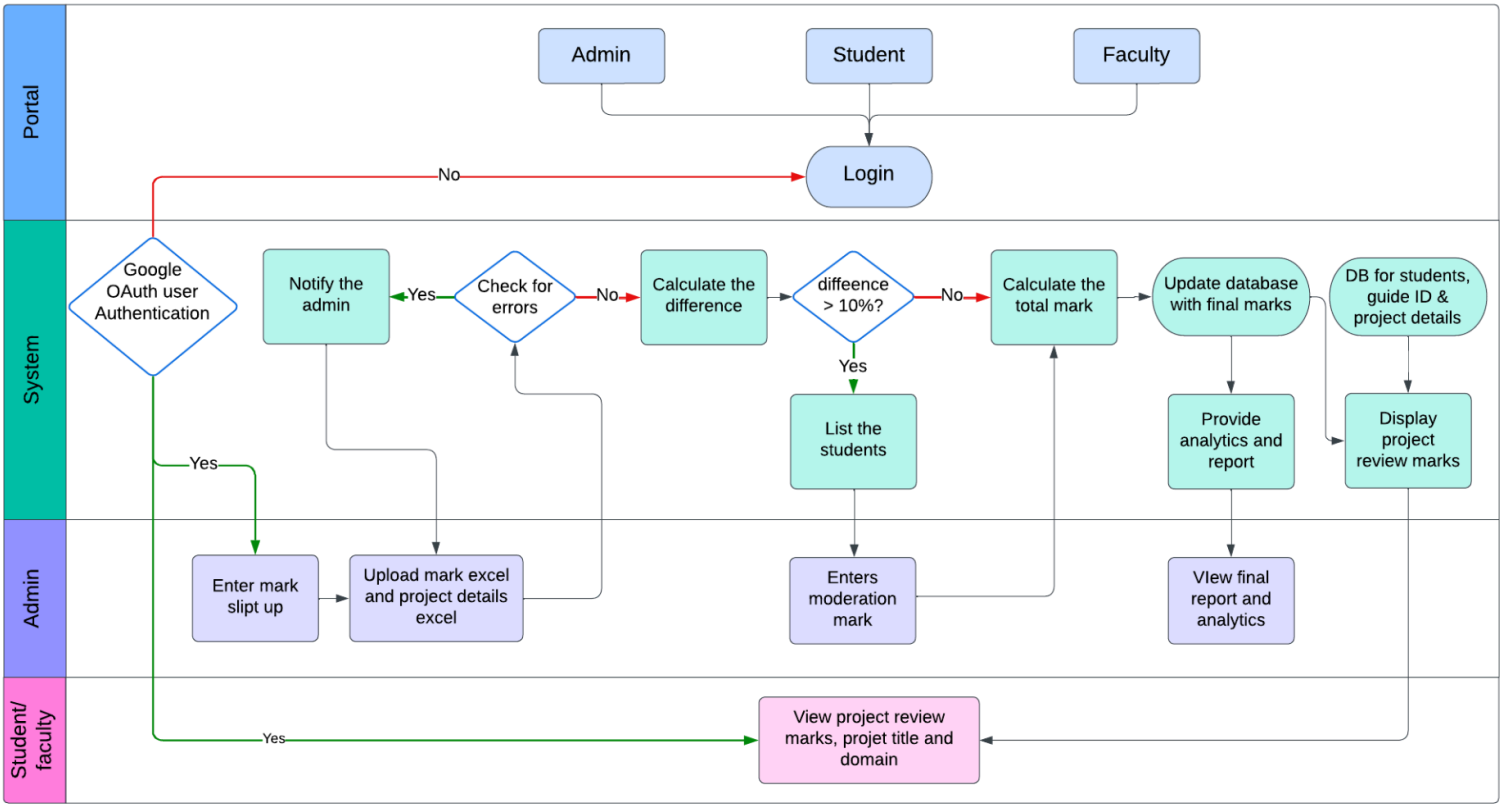
I. NON FUNCTIONAL REQUIREMENTS :

- Scalability: Ensure the system can handle a growing number of users and data as the platform expands.
- Performance: Optimize system performance to deliver fast response times for mark calculations and data retrieval.
- Security: Implement robust security measures to protect user data, especially since sensitive academic information will be stored and accessed.
- Reliability: Design the system to be reliable, with minimal downtime and data integrity maintained at all times.
- Accessibility: Ensure the system is accessible to users with disabilities, following accessibility guidelines and standards.

J. FEATURES :

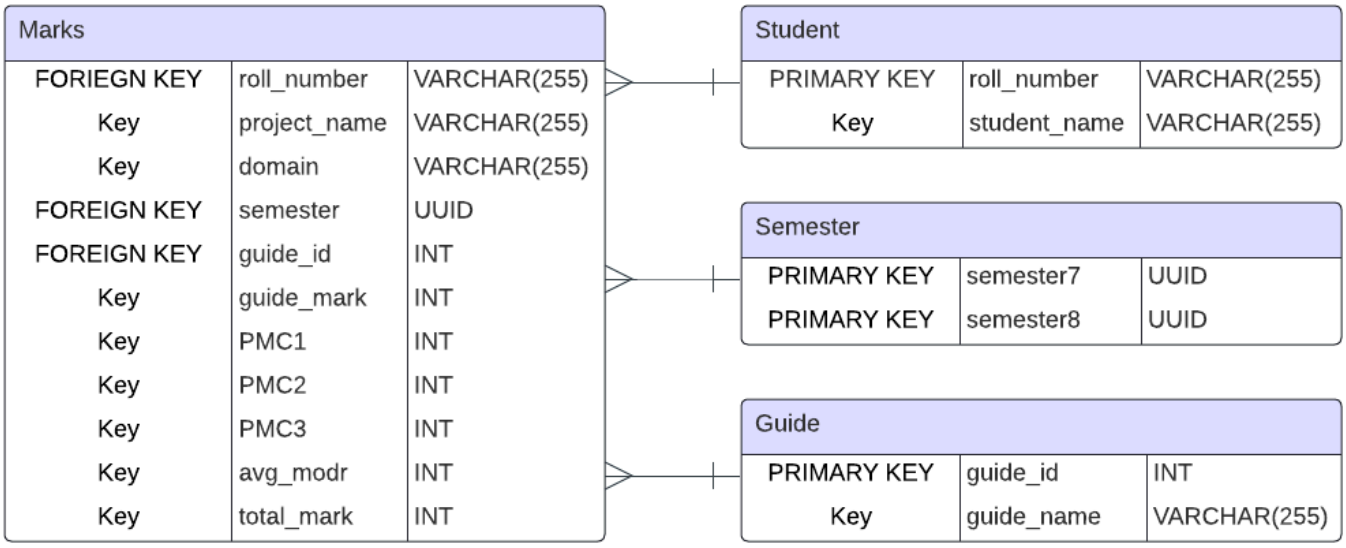
- Real-time Updates: Provide real-time updates to students and guides when marks are calculated or moderated.
- Notification System: Implement a notification system to alert users about important events, such as mark availability or moderation requests.
- Revision History: Maintain a revision history for project review marks, allowing admins to track changes made over time.
- Data Analysis: Provide analytics and overall report for data analysis.
- Data Backup and Recovery: Implement regular data backups and establish protocols for data recovery in case of system failures or data loss.
- Customization Options: Provide customization options for admins to configure system settings according to their institution's requirement.

K. FLOW CHART :



L. ER DIAGRAM :

- Each student is assigned to one project (1:N relationship between project and student).
- Each student is assigned to one guide (1:N relationship between Guide and Student).
- Each project marks entry corresponds to one student and one project (1:N relationship between Student and Project_Marks, and 1:N relationship between Project and Project_Marks).


Marks
FORIEGN KEY
Key
Key
FOREIGN KEY
FOREIGN KEY
Key
Key
Key
Key
Key
roll_number
project_name
domain
semester
guide_id
guide_mark
PMC1
PMC2
PMC3
avg_modr
total_mark
VARCHAR(255)
VARCHAR(255)
VARCHAR(255)
UUID
INT
INT
INT
INT
INT
INT
INT
Student
PRIMARY KEY
Key
roll_number
student_name
VARCHAR(255)
VARCHAR(255)
Semester
PRIMARY KEY
PRIMARY KEY
semester7
semester8
UUID
UUID
Guide
PRIMARY KEY
Key
guide_id
guide_name
INT
VARCHAR(255)