SRS (Software Requirement Specification)

Project Report

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Project Work Mark Consolidation System

Project Id - 7

Seat No - 327

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LAMP Stack

1. Introduction

This Software Requirement Specification (SRS) document outlines the requirements and specifications for the development of a website solution to streamline and automate the existing manual process of reviewing and publishing results. The purpose of this website is to import data from Excel sheets, automate calculations, facilitate result publication, conduct secondary reviews, and provide analytics functionalities.

2. Background:

Currently, the review process relies on manual entry of marks into an Excel sheet. Calculations are performed manually, and results are published based on these calculations. In case of a secondary review, new marks are manually entered, and final results are published. Analytics for results are also done manually, considering batch, year, and team.

3. Functional Requirements:

3.1 Data Import:

The website shall import data from Excel sheets containing review marks.

It should support various file formats and handle different data structures.

3.2 Calculation Automation:

The website shall automate calculations based on predefined rules.

It should accurately perform the required calculations and handle different scenarios.

3.3 Result Publication:

Based on the calculated results, the website shall publish results (pass/fail) if they meet certain criteria.

It should provide clear and intuitive visualization of the results.

3.4 Secondary Review Process:

If the calculated results don't meet the specified criteria, the website shall trigger a secondary review process.

It should notify the relevant stakeholders and provide a mechanism to conduct the secondary review.

3.5 Secondary Review Marks Entry:

Users shall be able to enter secondary review marks directly on the website.

The website should validate and store the entered marks accurately.

3.6 Final Results Calculation and Publication:

The website shall calculate final results based on the secondary review marks.

It should publish the final results, indicating the pass/fail outcomes.

3.7 Analytics Functionalities:

The website shall provide analytics functionalities for results based on batch, year, and team.

It should generate reports, charts, or visualizations to present meaningful insights.

4. Non Functional - Requirements

4.1 Performance:

The website should handle a large volume of data efficiently and respond quickly to user interactions.

4.2 Security:

The website should implement appropriate security measures to protect the data and prevent unauthorized access.

4.3 Usability:

The user interface of the website should be intuitive and user-friendly, requiring minimal training for users to navigate and perform tasks.

4.4 Reliability:

The website should be stable and reliable, ensuring minimal downtime and data integrity.

4.5 Compatibility:

The website should be compatible with different web browsers and devices to ensure a consistent user experience.

5. Assumptions and Constraints

It is assumed that the Excel sheets provided for data import will follow a specific format and structure.

The website will be developed using a specific technology stack and programming language.

The project will adhere to the specified timeline and budget constraints.

6. Dependencies

The website development is dependent on access to the required Excel sheets and the availability of relevant stakeholders for input and feedback.

7. Acceptance Criteria

The website should be thoroughly tested to ensure all functional and non-functional requirements are met.

It should be validated against real-world scenarios and user feedback for successful acceptance.

8. Use Cases:

1. Import Review Marks:

- Actors: Administrator, System

- Description: The administrator uploads Excel sheets containing review marks.

- Precondition: The Excel sheets follow the specified format.

- Postcondition: Review marks are imported into the system.

2. Automate Calculations:

- Actors: System

- Description: The system performs calculations on the imported review marks based on predefined rules.

- Precondition: Review marks are imported successfully.

- Postcondition: Calculated results are available for further processing.

3. Publish Results:

- Actors: System, Users

- Description: The system publishes pass/fail results based on the calculated scores.

- Precondition: Calculated results are available.

- Postcondition: Results are published and visible to users.

4. Trigger Secondary Review:

- Actors: System, Users

- Description: If the calculated results don't meet certain criteria, the system triggers a secondary review process.

- Precondition: Calculated results indicate a need for a secondary review.

- Postcondition: Secondary review process is initiated.

5. Enter Secondary Review Marks:

  - Actors: Users

  - Description: Users enter secondary review marks directly on the website.

  - Precondition: Secondary review process is initiated.

  - Postcondition: Secondary review marks are stored in the system.

6. Calculate Final Results:

  - Actors: System

  - Description: The system calculates final results based on the secondary review marks.

  - Precondition: Secondary review marks are entered.

  - Postcondition: Final results are available for publishing.

7. View Analytics:

  - Actors: Users

  - Description: Users can access analytics functionalities to view results based on batch, year, and team.

  - Precondition: Results are published and available.

  - Postcondition: Analytics insights are displayed to users.

9. System Architecture

The proposed system can be developed using the LAMP stack (Linux, Apache, MySQL, PHP) along with Laravel as the PHP framework. The front-end components will be built using HTML, CSS, and JavaScript.

The system architecture can follow a layered approach, separating the presentation layer, business logic layer, and data layer. Here's a high-level overview:

1. Presentation Layer:

   - HTML, CSS, and JavaScript will be used to create the user interface (UI).

   - The UI will interact with the back-end via HTTP requests and handle user interactions.

2. Business Logic Layer:

   - Laravel, a PHP framework, will handle the business logic of the system.

   - It will receive requests from the presentation layer, process data, and coordinate the flow of information.

   - Laravel's routing, controllers, and services will handle request handling and business operations.

3. Data Layer:

   - MySQL will be used as the relational database management system (RDBMS) to store data.

   - Laravel's Eloquent ORM can be utilized for database operations, including data retrieval, storage, and manipulation.

4. Excel Data Import:

   - A module or library within Laravel can handle the parsing and import of Excel sheets.

   - It should convert the data into a compatible format for further processing.

5. Calculation Engine:

- Laravel's business logic layer will include components responsible for performing calculations on the imported review marks.

- Pre-defined rules will be applied to calculate scores and determine pass/fail outcomes.

6. Result Publication and Secondary Review:

- The system will handle the publishing of results based on the calculated scores.

- If the results don't meet certain criteria, the secondary review process will be triggered.

7. Secondary Review Marks Entry:

- Users will be able to enter secondary review marks directly on the website.

- Laravel's forms and validation can be used to ensure accurate and valid data entry.

## 8. Final Results Calculation:

- The system will calculate the final results based on the secondary review marks.

- It will apply the necessary calculations and rules to determine the pass/fail outcomes.

9. Analytics Functionality:

- Laravel's data querying capabilities can be utilized to generate reports and retrieve analytics based on batch, year, and team.

- The results can be visualized using charts or other data visualization techniques.

10. Project WebApp Workflow

Project Mark Consolidation System (PMCS) - WebApp Workflow Breakdown
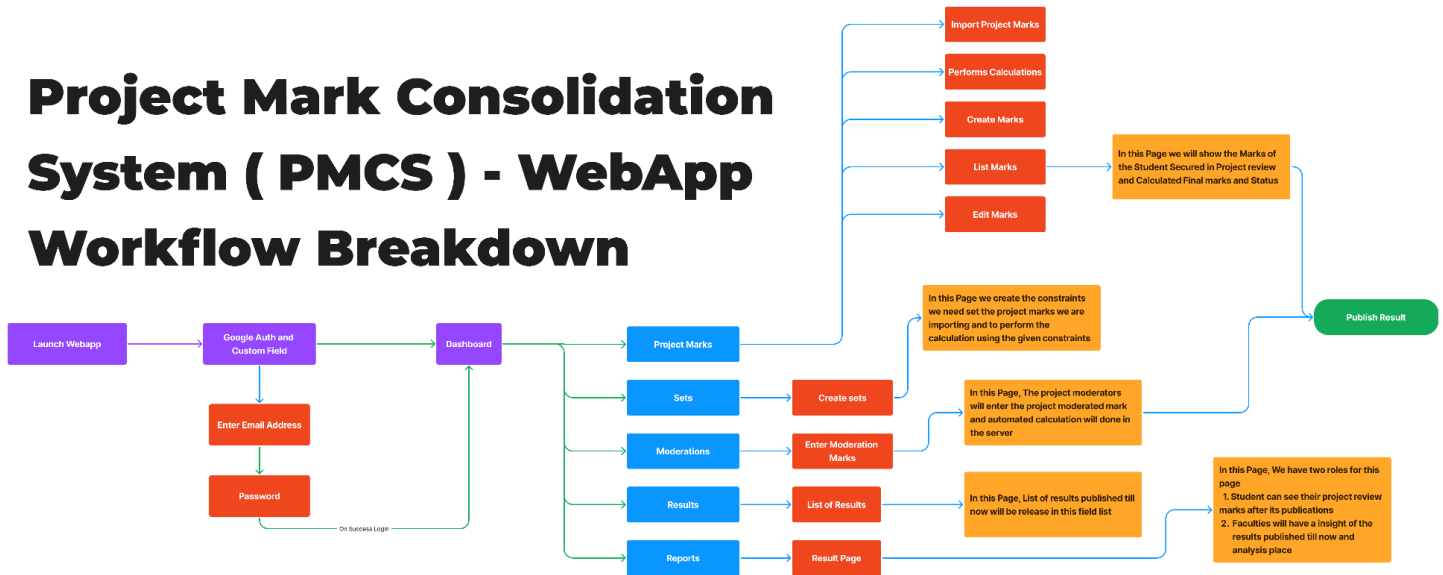
11. Project Workflow

Project Mark Consolidation System (PMCS) - Project Workflow Breakdown