



BANNARI AMMAN

INSTITUTE OF TECHNOLOGY

An Autonomous Institution, Affiliated to Anna University,
Approved by AICTE, Accredited by NAAC with 'A+' Grade

Name : KANAGADURGA S
Roll No : 73736221EC189
Seat No :
Project ID : 14
Project Title : MARK ENTRY
Stack: LAMP

TECHNICAL COMPONENTS

Components Techstack
Frontend : HTML,CSS,Javascript
Backend : Linux
Database: MongoDB(NOSQL Database)
API OpenAPI

1. INTRODUCTION

This document outlines the design and functionalities Five CO wise Periodical test marks, CO PO calculation , Result analysis .

Key Functionalities:

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1. Performance Evaluation:

- Detailed analysis of student performance in periodical tests for each Course Outcome (CO), highlighting strengths and areas for improvement.

2. CO to PO Mapping:

- Quantitative mapping of Course Outcomes (COs) to Program Outcomes (POs) to assess alignment and contribution towards achieving educational objectives.

3. Result Analysis and Insights:

- Comprehensive synthesis of performance data and CO-PO mapping to derive actionable insights and recommendations for curriculum enhancement and instructional strategies.

1.1 PROBLEM STATEMENT

The performance assessment and educational outcome alignment in the current curriculum lack a structured approach to systematically evaluate student achievements and their correlation to predefined Program Outcomes (POs). This gap leads to inefficiencies in identifying areas needing improvement and making

informed decisions for curriculum development and instructional strategies.

Therefore, there is a need for a comprehensive analysis framework that accurately measures student performance in Course Outcomes (COs), maps these outcomes to POs, and provides actionable insights for enhancing the educational program.

Objectives

1. Evaluate Student Performance:

- Conduct a detailed analysis of student marks in the five periodical tests for each Course Outcome (CO) to identify performance trends and pinpoint specific areas where students excel or struggle.

2. Map COs to POs:

- Establish a quantitative and qualitative framework to map each Course Outcome (CO) to the corresponding Program Outcomes (POs), demonstrating the contribution of COs to the overall educational objectives.

3. Derive Actionable Insights:

- Synthesize the performance data and CO-PO mappings to produce a comprehensive result analysis, providing actionable recommendations for curriculum enhancement, targeted

instructional strategies, and continuous improvement in achieving educational outcomes.

1.2 PURPOSE

The purpose of this analysis is to systematically evaluate student performance across five Course Outcomes (COs) through periodical test marks, establish a clear mapping of these COs to Program Outcomes (POs), and derive actionable insights. This process aims to identify strengths and areas for improvement, ensuring alignment with educational objectives and informing data-driven decisions for curriculum enhancement and targeted instructional strategies, ultimately leading to continuous improvement in educational outcomes.

1.3 SCOPE

The scope of this analysis encompasses the evaluation of student performance based on periodical test marks for five specific Course Outcomes (COs), the mapping of these COs to relevant Program Outcomes (POs), and the synthesis of this information to provide a comprehensive result analysis. This includes identifying trends, assessing alignment with educational goals, and generating recommendations for curriculum and instructional improvements. The focus is on providing a detailed yet concise framework for understanding and enhancing the effectiveness of the educational program.

1.4 BUSINESS CONTEXT:

In the business context, this analysis serves as a critical tool for educational institutions aiming to improve the quality and effectiveness of their programs. By systematically evaluating student performance and aligning Course Outcomes (COs) with Program Outcomes (POs), institutions can ensure their curriculum meets industry standards and stakeholder expectations. This alignment enhances the institution's reputation, supports accreditation processes, and ensures graduates are well-prepared for the professional market, ultimately driving student success and institutional growth.

2. CONSIDERATION:

This analysis must ensure accurate data collection and integrity in student performance metrics, consistent and transparent CO-PO mapping, and the ability to derive meaningful insights that can inform curriculum and teaching strategy adjustments.

2.1 DEPENDENCIES:

The analysis relies on timely and accurate periodical test data, robust frameworks for CO-PO mapping, and collaboration between educators, administrators, and

curriculum designers to implement recommendations effectively.

2.2 USER PERSONAS

1. Educators: Instructors seeking to understand student performance, identify areas for improvement, and align their teaching strategies with program outcomes.
2. Curriculum Designers: Professionals responsible for developing and updating the curriculum to ensure it meets educational standards and industry requirements.
3. Administrators: School or university officials focused on accreditation, program effectiveness, and overall institutional reputation.
4. Students: Learners who benefit from improved instructional methods and curriculum alignment, leading to better educational outcomes and career readiness.

2.3 USER STORIES

1. Admin

Secure Access:

As an admin, I want to log in securely to the system to access administrative functionalities.

User Management:

As an admin, I want to manage user roles and permissions to ensure data security and privacy.

Data Entry:

As an admin, I want to input and manage periodical test marks for students, including the details of evaluations and evaluators.

CO-PO Mapping:

As an admin, I want to configure and maintain the mapping of Course Outcomes (COs) to Program Outcomes (POs).

Moderation:

As an admin, I want to manage moderation cases by adjusting marks as necessary.

Report Generation:

As an admin, I want to generate comprehensive reports on student performance, CO-PO alignment, and moderation cases.

Insight Analysis:

As an admin, I want to analyze results to provide actionable insights and recommendations for curriculum improvements.

2. Staff/Evaluators

Secure Access:

As a staff member, I want to log in securely to the system to access evaluation functionalities.

Marks Entry:

As a staff member, I want to enter evaluation marks for assigned students for each periodical test.

Performance Tracking:

As a staff member, I want to view individual student marks, overall performance trends, and moderation status.

Data Export:

As a staff member, I want to download student marks and performance data in PDF or Excel format.

Report Generation:

As a staff member, I want to generate reports on evaluation data for analysis and decision-making.

3. Students

Secure Access:

As a student, I want to log in securely to the system to view my evaluation marks.

Performance Viewing:

As a student, I want to view my own periodical test marks and overall performance across different Course Outcomes.

Progress Tracking:

As a student, I want to understand how my performance in different Course Outcomes contributes to the overall Program Outcomes.

FUNCTIONALITY REQUIREMENT

1. User Management

1.1 Registration

- Users (Admin, Faculty, Students) can register using email addresses.
- Send a verification email upon registration.
- Users set a password during registration.

1.2 Login

- Secure login with registered email and password.
- Password reset functionality.

1.3 User Roles

- Roles: Admin, Faculty, Students.
- Permissions:
 - Admin: Full access.
 - Faculty: Mark entry, CO-PO calculations, result analysis.
 - Students: View test marks and result analysis.

2. CO Wise Periodical Test Marks

2.1 Test Mark Entry

- Form for faculty to enter periodical test marks for each student.

2.2 Course Outcomes (COs)

- Map test questions to specific COs.
- Support multiple COs for each test.

2.3 Absence Handling

- Mark absences ('A') for non-participating students.

3. CO-PO Calculation

3.1 CO-PO Mapping

- Map COs to Program Outcomes (POs).
- Interface to define CO-PO relationships.

3.2 CO Attainment Calculation

- Calculate CO attainment based on student marks.

3.3 PO Attainment Calculation

- Calculate PO attainment based on CO attainment levels.

4. Result Analysis

4.1 Student View

- View periodical test marks and CO attainment levels.
- Graphical representation of performance.

4.2 Faculty View

- View student marks, CO attainment, and PO attainment.
- Analytical tools for trend identification.

4.3 Admin View

- View all student marks, CO and PO attainment levels.
- Generate summary reports for institutional analysis.

5. Reporting

5.1 Report Generation

- Generate comprehensive reports on performance, CO, and PO attainment.
- Customize report parameters.

5.2 Export Formats

- Export reports in PDF and Excel formats.

CONCLUSION

The development of the CO Wise Periodical Test Marks, CO-PO Calculation, and Result Analysis System is a comprehensive project that aims to streamline and enhance the evaluation process within educational institutions. By addressing both functional and non-functional requirements, the system is designed to provide a robust, secure, and user-friendly platform for managing and analyzing student performance data.

PHASE STATUS	
Planning and Requirement Gathering	FINISHED
Design and UI/UX Prototyping	ONGOING
Database Design and Implementation	
Backend Development	
Integration and Testing	
Deployment	