**CSE DEPARTMENT CONSULTANCY SERVICES PLATFORM (CSE-CSP)**

**PROJECT SYNOPSIS**

OF MAJOR PROJECT

**BACHELOR OF TECHNOLOGY**

Computer Science and Engineering

SUBMITTED BY

|  |  |  |
| --- | --- | --- |
| DILRAJ SINGH | EKUSPREET SINGH | HARSIMRAN SINGH |
| 2104092 | 2104097 | 2104117 |

August 2024



UNDER THE GUIDANCE OF

DR. SITA RANI

**GURU NANAK DEV ENGINEERING COLLEGE,**

**LUDHIANA**

**INDEX**

|  |  |  |
| --- | --- | --- |
| **Sno.** | **Topic** | **Page Number** |
| 1. | Introduction |  |
| 2. | Rationale |  |
| 3. | Objectives |  |
| 4. | Literature Review |  |
| 5. | Feasibility Study |  |
| 6. | Methodology |  |
| 7. | Facilities Required |  |
| 8. | Expected Outcomes |  |
| 9 | References |  |

**INTRODUCTION**

We propose a Web based application solution that is a pioneering software platform designed to empower institutions to achieve Outcome-Based Education (OBE) by streamlining the entire process, from curriculum management to assessment and attainment of Program Education Objectives (PEOs), Program Outcomes (POs), and Course Outcomes (COs). The application will be a result of extensive research and collaboration with experts in the field of education, aiming to address the challenges faced by institutions in implementing OBE through manual processes.

The platform offers a range of features, including:

* Curriculum management: It enables institutions to manage their curriculum effectively, including defining and aligning PEOs, POs, and COs.
* Assessment and attainment: The platform provides a robust assessment and attainment framework, enabling institutions to measure the attainment of PEOs, POs, and COs.
* Data management and reporting: It offers a centralized data management system, generating reports and analytics to support informed decision-making.

**RATIONALE**

The proposed project helps to overcome the following problems faced by using existing project.

* Lack of a robust assessment framework: Institutions find it challenging to develop and implement a robust assessment framework that measures the attainment of PEOs, POs, and COs.
* Difficulty in selecting appropriate assessment methods: Institutions struggle to select assessment methods that are valid, reliable, and relevant to the outcomes being measured.
* Challenges in setting attainment targets: Institutions find it challenging to set attainment targets that are realistic and achievable, yet still meet the requirements of accreditation agencies.
* Ensuring that assessment data is used to improve programs: Institutions struggle to ensure that assessment data is used to inform program improvements and make data-driven decisions.
* Manual data collection and analysis: The manual process of collecting and analysing data is time-consuming and prone to errors.
* Difficulty in generating reports that meet accreditation requirements: Institutions struggle to generate reports that meet the requirements of accreditation agencies, which can lead to delays and inefficiencies.
* Challenges in maintaining data integrity and security: Institutions find it challenging to maintain the integrity and security of assessment data, which can compromise the validity of the assessment process.
* Ensuring that data is used to inform decision-making: Institutions struggle to ensure that assessment data is used to inform decision-making and drive program improvements.

**OBJECTIVES**

* To create a comprehensive system that allows efficient updating, organizing, and managing of curriculum details to improve the academic planning process.
* To develop tools that facilitate the automated generation of reports, conduct assessments, and track student attainment, thereby reducing manual work and increasing accuracy.
* To implement features that allow effective collection and analysis of feedback through surveys, and track faculty contributions to academic and extracurricular activities, fostering a more engaged and collaborative academic environment.

**LITERATURE REVIEW**

Existing application

About IonCUDOS: Curriculum management system of IonCUDOS. Mainly focuses on curriculum design enabling faculties to create appropriate lesson plans, frame COs and mapping COs to Pos and frame question banks.

* Curriculum Design: The curriculum in IonCUDOS is created by the Head of the Department (HOD) feeding PEOs, POs and mapping between PEOs and POs. Afterwards, faculties are allocated specific subjects. The faculties will then login and create a lesson plan and frame the course outcomes (COs) and perform the mappings to the program outcomes (POs), frame Topic Level Outcomes (TLOs) and map TLOs to COs, frame competencies and performance indicators.
* Delivery Planning: Faculties while framing COs specify the delivery method used to deliver each CO to the students and also specify the appropriate Bloom’s level for that particular CO. This process helps to maintain consistency in delivering the curriculum.
* User interface: The current system doesn’t have user-friendly or beginner friendly UI/UX. Methods used for adding and editing particular records of curriculum are not easy to access.
* Performance: Fetching data from server and loading that into front end part takes unacceptable time resulting in poor performance.

**FEASIBILITY STUDY**

1. Operational Feasibility: Proposed projects can be implemented and integrated successfully within the existing operational environment of an organization. It evaluates the practicality and viability of implementing a specific solution or project, taking into consideration various factors such as technical, logistical, resource-related, and organizational constraints.
2. Economic Feasibility: Assessing the market demand and conditions relevant to the project or product is crucial. Understanding the market dynamics, customer needs, competition, and potential market share helps in estimating potential revenue and sales projections.
3. Significance of project: Some of the existing software for Curriculum design is too slow to operate and even not economically feasible. So, the main significance of the project is to create software which is easily operational and economical.

**METHODOLOGY**

Report Generation: Implement automated report generation features to create academic performance reports, attendance reports, and other necessary documentation. Utilize templates and customizable options to cater to different reporting needs.

Assessment Tools: Create tools for designing, conducting, and evaluating assessments. This includes online quizzes, exams, assignment submissions, and grading mechanisms.

Utility Functions: Develop additional functionalities such as user management (registration, login, role assignment), notification systems (email, SMS alerts), and other supportive tools that enhance the system's usability and efficiency.

**FACILITIES REQUIRED FOR PROPOSED WORK**

Hardware Requirements:

* Processor: Quad-core or higher
* RAM: 16 GB or more
* Storage: 500 GB SSD or more
* Network: High-speed internet connection

Frameworks to be used:

* Next JS framework
* TypeScript
* TailwindCSS.
* Express.js server

**EXPECTED OUTCOMES**

The expected outcomes of the project:

* Comprehensive Curriculum Management: A well-organized system to manage and update curriculum details efficiently.
* Accurate and Timely Reports: Automated generation of various academic reports, reducing manual workload and errors.
* Effective Assessments: Streamlined processes for creating, conducting, and evaluating assessments.
* Improved Attainment Tracking: Enhanced ability to track and analyze student performance and attainment levels.
* Insightful Surveys: Efficient collection and analysis of survey data to gather feedback and improve academic processes.
* Enhanced Faculty Contribution Tracking: Clear visibility of faculty contributions to academic and extracurricular activities.
* Utility Tools: Effective user management, notification systems, and other utility functions to support smooth operations.
* Continuous Improvement: A feedback loop for ongoing improvements based on user input and performance analysis.

**REFERENCES**

https://www.ioncudos.com/