

IS2901 - Software Development Project

Project Proposal



Department of Interdisciplinary Studies
Faculty of Information Technology
University of Moratuwa

2024

Group Name	SyntaxStorm	
Project Name	Enterprise Learning Management System (LMS)	
Client's name and address	Excellly Labs (pvt.) Ltd. 440B,Batama South, Kadana, Sri Lanka	
Group Members	Index No	Name
	225128K	B.G.A.U. Deshapriya
	225089N	R.A.M.R.Ranawaka
	225077C	P.G.S.Nirodya
	225130J	U.S.D.Silva
	225047K	Kahawalage D.I.
Supervisors' names	1. Ms. M.B. Mufitha 2. Ms. M.N. Chandimali	

1. Introduction

In the current dynamic corporate environment, ongoing staff education and development are essential for organizational success. Organizations encounter the problem of providing their employees with the requisite skills to adjust to emerging technologies, market dynamics, and consumer expectations. This proposal presents a complete and engaging learning solution through the introduction of a bespoke Enterprise Learning Management System (LMS) for ExcelllyGen.

This LMS will offer a unified platform for employees to access a variety of learning resources, including courses, videos, and interactive assessments. The suggested LMS intends to establish a dynamic and efficient learning environment by utilizing contemporary technologies such as React for an intuitive interface and .NET Core for a resilient backend. This solution will enable employees to develop new skills, improve their performance, and contribute to ExcelllyGen's overall growth and competitiveness.

2. Problem in brief

The challenge of maintaining a highly skilled and adaptable workforce in a swiftly changing business environment is one that ExcellyGen, like many modern organizations, is confronted with. Traditional training methods frequently prove to be inefficient, costly, and inflexible, as they are unable to meet the changing demands of the industry and the diverse learning requirements of employees. This leads to the following:

- **Skill disparities:** Employees may be unable to maintain pace with technological advancements and emerging industry practices due to skill disparities.
- **Unequal distribution of training:** Variations in employee knowledge and performance may result from the unequal distribution of training opportunities.
- **Limited engagement:** Conventional training methods may be uninspiring and fail to actively involve employees in the learning process.
- **Progress tracking challenges:** Progress tracking is challenging due to the absence of a centralized system, which complicates the evaluation of the efficacy of training programs and the monitoring of employee learning progress.

It is imperative that ExcellyGen confront these obstacles to cultivate a culture of perpetual learning, enhance employee performance, and preserve a competitive advantage in the market. A learning solution that is both engaging and robust is required to enable employees to achieve their maximum potential, provide consistent training, and bridge skill gaps.

3. Aim and Objectives

Aim: The aim of this project is to develop a comprehensive Enterprise Learning Management System (LMS) for ExcelllyGen to address the challenges of employee training and development with the use of modern technologies and innovative learning approaches.

Objectives:

- To provide a centralized platform for employees to access and engage with a diverse range of learning resources.
- To streamline the training process and ensure consistent delivery of learning materials across departments and roles.
- To empower employees to learn at their own pace and according to their individual needs and preferences.
- To enhance employee engagement through interactive courses, assessments, and gamified learning experiences.
- To enable administrators to efficiently manage learning content, track employee progress, and generate insightful reports.
- To foster a culture of continuous learning within ExcelllyGen and contribute to the development of a highly skilled and adaptable workforce.
- To implement a leaderboard system that motivates employees to consistently engage with courses by tracking their progress and awarding badges and rewards, fostering a culture of continuous learning and achievement.

4. Proposed Solution

In order to satisfy ExcellGen's training and development requirements, we suggest the implementation of a comprehensive Enterprise Learning Management System (LMS) that is constructed on a scalable and resilient technology platform. This solution will offer a centralized platform that enables administrators and employees to effectively administer and interact with learning resources.

4.1 Technology to be Adapted:

- **Frontend (React):** A modern JavaScript library for building dynamic and interactive user interfaces. React's component-based architecture allows for a modular and maintainable frontend, ensuring a seamless user experience across various devices.
- **Backend (.NET Core):** A high-performance, cross-platform framework for developing robust and scalable web applications. .NET Core will handle user authentication, data management, API integrations, and business logic for the LMS.
- **Database (PostgreSQL):** A powerful open-source relational database management system known for its reliability, data integrity, and scalability. PostgreSQL will store user data, course content, learning progress, and other essential information.
- **Cloud Hosting (Azure):** Microsoft Azure will provide the infrastructure for hosting the LMS, ensuring high availability, scalability, and security. Services like Azure Blob Storage will be used for storing video content and other learning materials.

4.2 Nature of Solution:

- **Input:** The LMS will accept various inputs, including user registrations, course uploads, video content, quiz creation, and learning path configurations.
- **Output:** The system will provide personalized dashboards for employees, progress reports for administrators, certificates upon course completion, and downloadable CVs generated from user profiles, along with insightful analytics on learning patterns.
- **Process:** The LMS will facilitate a streamlined learning process, including course enrollment, content delivery, assessments, progress tracking, and communication between employees and administrators.
- **Users:** The primary users of the system will be ExcellGen employees (learners) and administrators (HR, trainers, managers).

4.3 Feasibility of Implementation:

The proposed solution is feasible due to:

- **Availability of mature technologies:** The chosen technology stack consists of widely adopted and well-supported tools and frameworks.

- **Cloud-based infrastructure:** Azure provides a scalable and reliable hosting environment, minimizing upfront infrastructure costs and maintenance overhead.

4.4 Capability to Solve the Problem:

The proposed LMS directly addresses the identified problems by:

- **Centralizing learning resources:** Provides a single platform for accessing all training materials.
- **Enabling self-paced learning:** Allows employees to learn at their own convenience and preference.
- **Tracking progress effectively:** Provides tools for monitoring individual and group learning progress.
- **Facilitating efficient administration:** Streamlines content management and reporting for administrators.

5. Timeline

Phase 1: Requirements Gathering and Planning (November 27th, 2024 - December 15th, 2024)

- Detailed requirement analysis: Finalize the scope of features, user roles, and functionalities of the LMS.
- Technology stack confirmation: Confirm the chosen technologies (React, .NET Core, PostgreSQL, Azure) and any third-party integrations.
- Project plan creation: Develop a detailed project plan with tasks, timelines, and resource allocation.
- UI/UX design: Design React.js for the initial set of front-end pages.

6. Signatures of group Members

Index No	Name	Signature
225128K	B.G.A.U. Deshapriya	
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225077C	P.G.S.Nirodya	
225130J	U.S.D.Silva	
225047K	Kahawalage D.I.	

7. Supervisors' declaration

I hereby declare that I have checked this project and, in my opinion, this project is adequate in terms of scope and quality

1. Name of Supervisor: **Ms. M.B. Mufitha**

Designation:

Date:

Signature:

Any further comments:

2. Name of Supervisor: **Ms. M.N. Chandimali**

Designation: Lecturer (Probationary)

Date: 28/11/2024

Signature:

Any further comments: -