

Final Year Project



FYP Report

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Abstract

Oasis Learning, an educational platform harnessing the power of artificial intelligence, endeavors to deliver bespoke, captivating, and interactive learning experiences tailored to individuals of all ages. The crux of this application lies in its noble objective: aiding users in their quest for knowledge and growth. By enabling users to choose an image, explore a myriad of captivating subjects, and have these topics elucidated in their preferred language, Oasis Learning ensures inclusivity and accessibility for all. In essence, Oasis Learning emerges as a beacon of promise, poised to revolutionize the very essence of educational paradigms, propelling users towards boundless learning potential.

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1. Introduction

Oasis Learning is an exceptional educational platform that leverages the power of artificial intelligence to provide personalized, engaging, and interactive learning experiences for users of all ages. With the ability to choose image, explore diverse topics, and receive explanations in preferred languages, Oasis Learning ensures a tailored and inclusive educational journey. It caters to the need of the user, make it accessible to a wide range of individuals. By revolutionizing the way user acquires knowledge, Oasis Learning emerges as a promising force in the realm of education. Through its innovative approach, this platform has a potential to transform the landscape of learning, empowering users to unlock their full learning potential.

2. Vision Document

2.1.Problem Statement

The existing education system faces two main problems. The first problem is that it doesn't do a great job of meeting the different needs of students. It fails to adapt and cater to the unique requirements and learning styles of individuals. The second problem it face is that not everyone has easy access to good education. It's like having limited options when it comes to finding the best schools or learning opportunities.

2.1.1. Motivation

The driving force behind Oasis Learning is rooted in the vision of crafting a truly student-centered learning platform. We firmly believe in the uniqueness of each learner and acknowledge that individuals acquire knowledge in distinct ways. Embracing this philosophy, we aspire to revolutionize the educational landscape by offering a personalized and interactive experience through Oasis Learning. By placing the user at the heart of our design, we aim to create an environment that caters to diverse learning styles, fostering an optimal and enriching educational journey for all. With Oasis Learning, we endeavor to empower users to unlock their full potential through an experience that is truly tailored to their individual needs.

2.2. Business Opportunity

The Oasis Learning platform presents a remarkable opportunity in education technology. With its unique features, personalized approach, immersive technologies, mobile accessibility, and strategic collaborations, Oasis Learning meets the demand for online education. By leveraging AI, algorithms, and partnerships, Oasis Learning caters to diverse learners, fosters comprehension through immersive experiences, and remains a leading platform. What sets Oasis Learning apart is its commitment to innovation and integration of virtual and augmented reality, enhancing engagement and understanding. With mobile apps, learners access resources conveniently. Collaborations with institutions, creators, and providers ensure continuous improvement. Oasis Learning revolutionizes education, empowering learners globally.

2.3.Objectives

- Provide personalized learning experience for all users.
- Making learning fun and engaging.
- Make learning accessible to all users, including those with disorders.
- Improve student learning outcomes.

2.4.Scope

The project endeavors to create a comprehensive educational software that delivers a personalized, engaging, and accessible learning experience for all users. By incorporating innovative features and methodologies, it focuses on improving student learning outcomes while aligning with the corporate goals of promoting inclusivity, enhancing educational effectiveness, and fostering a positive learning environment. Leveraging cutting-edge technology, such as artificial intelligence and machine learning algorithms, the software adapts to individual user needs and preferences, ensuring an authentically personalized learning experience. It offers a wide range of educational content across various subjects and grade levels, catering to learners of different ages and academic levels, complemented by a diverse collection of multimedia resources to captivate and engage users throughout their learning journey.

2.5.Constraints

- The platform needs reliable computers, software, and internet connections to work properly. Without these things, it won't function well or may not work at all.
- It's important to keep user information safe and private. We don't want unauthorized people to access or use personal data, so we need to take steps to protect it.
- It is crucial to focus on making the Oasis Learning platform appealing and easy to use so that users embrace it and find value in it.

2.6.Stakeholder and User Description

2.6.1. Market Demographics

The market demographics of Oasis Learning exhibit a wide spectrum of users, targeting individuals across various age groups, including children, students, professionals, and lifelong learners. The platform caters to individuals with diverse educational backgrounds, ranging from primary education to higher education and beyond. Oasis Learning strives to reach a global audience, accommodating users from different geographical locations and cultural contexts. By offering multilingual support and a diverse range of content, the platform aims to meet the needs and preferences of this diverse user base.

2.6.2. Stakeholder Summary

Name	Description	Responsibilities
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Management Team	Management team are individuals responsible for the overall operations of the System.	<ul style="list-style-type: none"> • Configure and maintain system settings to ensure optimal performance, including customizing user preferences and adjusting platform features. • Perform routine system maintenance tasks, software updates, and troubleshoot technical issues. • Ensure system security and implement access controls.
Administrators	Administrators are system administrators overseeing the OASIS LEARNING.	<ul style="list-style-type: none"> • Manage user accounts and permissions. • Configure and customize Oasis Learning to meet organization's specific needs.

2.6.3. User Environment

Users actively engage with the Oasis Learning platform within a dynamic and technology-driven environment. They interact with the platform through a range of devices, including computers, laptops, tablets, and smartphones. The platform is carefully designed to be compatible with prevalent operating systems such as Windows, macOS, iOS, and Android. Users access the platform through modern web browsers like Chrome, Firefox, Safari, and Edge. A reliable internet connection is pivotal to ensure uninterrupted access to the platform's extensive features and resources. The user environment is defined by a digital landscape that facilitates convenient and flexible learning experiences, empowering individuals to engage with educational content anytime and anywhere.

2.6.4. Stakeholder Profiles

2.6.4.1. Project Supervisor.

Representative:	Supervisor: Dr. Usama
Description:	They are directly in the supervision of the activities of the development process.
Type:	They are technical stakeholders i.e., have expertise in the domains applied to this project.

Responsibilities:	<ul style="list-style-type: none"> • Monitors the progress of the project. • Ensure that the project will have a sufficient market demand. • Gives proper direction to the development team. • Facilitate the development team to complete the project under defined resources and time.
Success Criteria:	The completion of features that were committed by the development team at the start of the project.
Involvement:	<ul style="list-style-type: none"> • Requirement reviewer • Senior managers • Reviews implementation
Comments/Issues:	None

2.6.4.2. Development Team.

Representatives:	Hamza Sajjad Umar Kamran Zaeem Muhammad Yaseen
Description:	The development team is responsible for designing, developing, and maintaining the system.
Type:	They are technical stakeholders.
Responsibilities:	<ul style="list-style-type: none"> • Design and develop software for oasis learning. • Implement computer vision algorithms for movement of lips. • Plan and coordinate project activities, ensuring deadlines are met. • Conduct testing, debugging, and quality assurance for system functionalities. • Manage project resources and budgets to ensure successful completion. • Ensure adherence to quality standards and maintain code integrity.
Success Criteria:	The completion of features that were committed by the development team at the start of the project.

Involvement:	<ul style="list-style-type: none"> • Documentation • Website development
Comments/Issues:	None

3. System Requirement Specification

This system would be a web application that will be accessible to all the users.

The project would've the following features:

3.1. System Features

Following are the features for our Oasis Learning;

3.1.1. Registration

The system will give functionality to register new traffic wardens for the system.

3.1.2. Login

The system will have login functionality in it. Admin can log in to the system to use it.

3.1.3. Image Upload.

The system will allow user to upload image of his own choice.

3.1.4. Language Selection

The system will allow user to select their preferred language.

3.1.5. User Interaction and Control

The system also provides a User Interface as a web application, allowing users to see their progress.

3.1.6. Engaging Multimedia Content

The system will offer a captivating multimedia content like videos and reading material (articles).

3.1.7. Recommendation System

The system will recommend other learning resources based on individual interests.

3.1.8. Progress Tracking

The system will show the user history so he can see his progress.

3.2. Functional Requirements

3.2.1. Registration

REQ 1. The system shall be able to register a new user.

3.2.2. Login

REQ 1. The system shall be able to authenticate registered users.

REQ 2. The system shall be able to login into the registered user.

3.2.3. Image Upload

REQ 1. The system shall have the capability of uploading an image.

3.2.4. Topic Search

REQ 1. The system shall be able to take Users query / question.

3.2.5. Language Selection

REQ 1. The system shall be able to take user desired language.

3.2.6. Accent Selection

REQ 1. The system shall be able to take user desired accent.

3.2.7. User Interaction and Control

REQ 1. The system shall be able to offer a user interface accessible via web applications.

REQ 2. The system shall be able to provide an intuitive and user-friendly interface for ease of use.

3.2.8. Personalized Learning

REQ 1. The system shall provide the history option so that the user can see their progress.

3.2.9. Contact Us

REQ 1. The system shall be capable of ensuring / enabling users to contact us regarding any query relating to the system or the material it is giving.

3.2.10. Recommend Related Topics

REQ 1. The system shall be able to recommend related videos and reading materials.

3.3.Non-Functional Requirement

3.3.1. Usability and Use Experience

REQ 1. The user interface must be intuitive, ensuring that even non-technical users can easily surf it.

3.3.2. Security and Data Protection

- REQ 1.** The system must implement secure data transmission protocols (such as HTTPS) to protect user interactions with the web interface.
- REQ 2.** The access to sensitive data, especially video feeds, must be restricted to authorized personnel only.

3.3.3. Scalability

- REQ 1.** The system must handle a 50% increase in traffic volume during peak hours without affecting the accuracy of vehicle and pedestrian detection.

3.3.4. Reliability

- REQ 1.** The system must have a minimum uptime of 99.9%, ensuring continuous operation.
- REQ 2.** The system must have a backup storage supply to ensure availability during system failure.

3.3.5. Maintainability

- REQ 1.** The system must be modular, allowing easy replacement or upgrade of individual components without disrupting the entire system.