

## Walchand College of Engineering, Sangli

#### (An Autonomous Institute)

**Department of Computer Science and Engineering**

TY CSE Mini Project 1

Report on

Uttar. Ai: AI-based question-solving and quiz-setting portal

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**Walchand College of Engineering, Sangli**

(An Autonomous Institute)

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### CERTIFICATE

This is to certify that the Project Report entitled, **“Uttar.Ai”** submitted by Mr. Viraj Patil, Mr. Datta Gangji and Mr. Jyotiraditya Patil to Walchand College of Engineering Sangli, India, is a record of bonafide project work of course **Mini Project I** **(6CS341)**carried out by him/her under our supervision and guidance and is worthy of consideration for the award of the degree of Bachelor of Technology in Computer Science & Engineering of the Institute.

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| --- | --- | --- |
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# Acknowledgement

The acknowledgement page depicts the gratitude, respect and thankfulness of the student towards the people who helped him in pursuing the project successfully and ensured successful completion and implementation of the project. In this page, the author expresses his gratitude and concern by using praising and thanks giving words.

(Acknowledgement to Director, HOD, Project Coordinator, Guide: Institute as well as Industry n others)

# Declaration

I hereby declare that work presented in this project report titled **“SKILLSLINKUP”** submitted by me in the partial fulfillment of the requirement of the award of the degree of **Bachelor of Technology (B. Tech)** in the **Department of Computer Science & Engineering, Walchand College of Engineering, Sangli** is an authentic record of my project work carried out under the guidance of Prof. Siddharaj Pujari

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Place: Sangli

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#### Abstract

In an era characterized by the increasing integration of artificial intelligence into our daily lives, there exists a compelling opportunity to harness this transformative technology for educational and informational purposes. The project presented in this abstract introduces a pioneering web-based platform designed to streamline and enhance the way questions are extracted from images, answered accurately, categorized effectively, and ultimately utilized to create quizzes.

The core challenges this project seeks to address is the automation of question recognition and answer generation from images, a task that holds significant potential in various domains, including education, content creation, and knowledge management. Current methods often rely on manual processes, limiting efficiency and scalability. Our project endeavors to bridge this gap by harnessing cutting-edge artificial intelligence techniques and image processing algorithms.

#### Introduction and Related work

In the modern age of technology, artificial intelligence (AI) has emerged as a transformative force, permeating various aspects of our lives. One area where AI holds immense potential is in the automation and augmentation of educational content creation and access. The project presented in this synopsis represents a pioneering step towards realizing this potential by seamlessly integrating AI into the process of recognizing and answering questions from images. This introduction sets the stage by providing context, motivation, and a clear understanding of the project's objectives.

The Context of AI in Education and Content Creation:

Education and knowledge dissemination have seen a remarkable shift towards digital platforms and technology-driven solutions. Online learning, e-books, and digital course materials are becoming increasingly prevalent. However, these advancements often lack the automation necessary to efficiently handle questions and answers within these contexts. Herein lies the opportunity for AI to play a transformative role.

Artificial intelligence is not just a buzzword; it is a technology with tangible capabilities. Machine learning, deep learning, and natural language processing have empowered AI systems to comprehend and respond to human language with remarkable accuracy. These capabilities are poised to revolutionize the way we interact with educational content, make learning more accessible, and facilitate

#### Problem statement

The project addresses the challenge of automating question recognition and answer generation from images, particularly in educational and informational contexts. Current methods need more efficiency and automation in processing questions extracted from images.

#### Objectives

1. To implement Image Processing for Question Extraction
2. To Implement AI-Based Question Answering
3. To design a Data System for Categorization and Tagging
4. To develop quiz generation system.

#### Methodology

* Literature Review​
* Educational Data Visualization​
* Platform Development​
* Tailwind CSS Styling

#### Project diagrams

#### Question Answer FlowChart and Quiz Generation Flowchart

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#### Testing (Unit, Integration and System)

#### Unit Testing:

#### Objective:

#### Collect Information:

#### Gather data related to students, clubs, and faculty.

#### Verification:

#### Verify the correctness of the collected data.

#### Ensure that individual components or units of the software (e.g., functions, methods) perform as intended.

#### Integration Testing:

#### Objective:

#### Integrate Data:

#### Combine the collected information with the server.

#### Ensure that data flows seamlessly between different components.

#### User Interface (UI):

#### Provide a user interface (UI) that interacts with the integrated data.

#### Verify that the UI elements function correctly and present the integrated data accurately.

#### System Testing:

#### Objective:

#### Website Functionality:

#### Check the overall functionality of the website.

#### Ensure that all integrated components work together as a cohesive system.

#### Performance:

#### Evaluate the performance of the system under different conditions.

#### Test the website's responsiveness and loading times.

#### Validation:

#### Validate that the website meets the specified requirements.

#### Confirm that the system behaves as expected

#### Results and Conclusion

#### Evaluation of Question Recognition and Answer Generation:

#### Results from the evaluation of question recognition and answer generation highlight the accuracy and efficiency of the AI-based system, comparing it with manual methods and other existing approaches.

#### Analysis of Categorization and Tagging Accuracy:

#### The categorization and tagging accuracy are assessed based on the relevance and consistency of assigned categories and tags, providing insights into the effectiveness of the organizational system.

#### Effectiveness of Quiz Generation Algorithm:

#### The effectiveness of the quiz generation algorithm is evaluated in terms of quiz diversity, relevance to content, and adaptability to different educational contexts.

#### Limitations and Future Enhancements:

#### The report acknowledges any limitations encountered during the project and proposes potential avenues for future enhancements, whether in terms of algorithm refinement, additional features, or expanded functionality.

#### The overall conclusion summarizes the project's achievements, emphasizing its contribution to addressing challenges in question extraction from images, its impact on educational content creation, and its alignment with broader trends in AI for education.

#### References

* + React Playlist : https://youtube.com/playlist?list=PLC3y8-rFHvwgg3vaYJgHGnModB54rxOk3&si=ngE-6kac9wIBAH1t
  + Simply Learn Course - Data Visualis​
  + VanderPlas, J. Python Data Science Handbook. O'Reilly Media.​
  + Heer, J., & Bostock