| **College** | **RV COLLEGE OF ENGINEERING®** | | | |
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| **Department** | **COMPUTER SCIENCE AND ENGINEERING** | | | |
| **PROGRAM: M.Tech** | **CSE** | **MINOR PROJECT** | **Course Code** | **MCX461P** |
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| **Project Title** | **MCQnA Generator from a Custom Document using Generative AI** | | | |
| **Under taken at** | **RVCE** | | | |
| **Internal**  **Guide** | **Dr. Ramakanth Kumar P** | | **Prof. & Head of the Dept, CSE, RVCE** | |

**INTRODUCTION:**Generative AI represents a transformative advancement in artificial intelligence, utilizing deep learning models to create content that mimics human intelligence. These models, such as Large Language Models (LLMs), have the ability to generate coherent and contextually relevant text based on provided input, enabling a range of applications across industries like education, healthcare, and customer support.

The application leverages the capabilities of these models to streamline the process of question creation and answer generation from textual resources. It aims to provide educators, students, and content creators with an intelligent tool for generating meaningful questions and answers directly from source materials such as PDFs, Word documents, or plain text files.

**OBJECTIVES:**1. Take in user provided document (PDF document/ Word document/ Text file).

2. Employ Large Language Models (LLMs) provided by OpenAI (such as GPT-3.5 turbo, GPT-4, GPT-4o mini) for the following tasks:

* Generate Multiple Choice Questions (MCQs) each with 4 choices relevant to the content from the given document and also give the correct choice.
* For a descriptive type question, give a brief answer to the question relevant to the content from the document.

3. Compare the performance of the 3 OpenAI LLMs and deploy the best performing model in the application.

**METHODOLOGY:**

The proposed work incorporates 2 modules.One is the Question and Answer (QnA) system, which takes in a question from the user and gives a descriptive answer to the question relevant to the content from the input document. The second module is the MCQ Generation System, which from the input document generates MCQs and also the correct choice for that question. Both the modules make use of the LLMs from OpenAI for the task of content generation.

**SOFTWARE REQUIREMENTS:**

* Python 3.x
* Libraries: OpenAI LLMs (GPT-3.5 turbo, GPT-4, GPT-4o mini), Langchain, Streamlit
* IDE: VSCode, PyCharm, Google Colab

**HARDWARE REQUIREMENTS:**

* Processor: Intel Core i5 or higher
* RAM: 8 GB or higher

**INNOVATION / CONTRIBUTION TO THE FIELD:**

The "MCQnA Generator from a Custom Document using Generative AI" is an innovative project that automates question and answer generation using advanced AI models like GPT-3.5 turbo, GPT-4, GPT-4o mini. It simplifies the process of creating MCQs and descriptive answers directly from text, saving time and effort. By transforming raw text into useful learning tools, the project highlights the potential of AI to make education more efficient, accessible, and personalized.

**Internal Guide Signature of Assoc. Dean Signature of the HOD**

**Dr.Ramakanth Kumar P Dr.Nagaraja G S Dr.Ramakanth Kumar P**

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