**TECH TUTOR PERSONALIZED AI LEARNING ASSISTANCE FOR TECH ENTHUSIASTS**

**ABSTRACT**

An AI-based Question Answer Generation and Evaluation System uses advanced NLP and machine learning to create and assess questions and answers automatically. It generates a variety of relevant questions from text, supporting effective testing and personalized learning. The system evaluates answers with accurate algorithms, offering detailed feedback and scores. This technology ensures consistent, efficient, and scalable assessments. It improves educational and training environments, enhancing learning experiences and outcomes.

**SYSTEM ANALYSIS**

**EXISTING SYSTEM**

In the existing system, early approaches relied on predefined templates and rule-based algorithms for tasks such as generating questions from text and analysing network data. While these methods were straightforward, they often lacked flexibility and adaptability to dynamic changes. Similarly, automated grading systems employed NLP techniques like keyword matching, syntactic analysis, and semantic similarity to evaluate answers against predefined correct responses. Though effective, these methods were limited by their reliance on static rules, making them less efficient in handling complex or evolving patterns.

**Disadvantages**

1. Lack of Flexibility

2. Time-Consuming

3. Limited Accuracy

4. Scalability Issues

5. Inability to Evolve

6. Dependence on Static Rules

**PROPOSED SYSTEM**

The proposed AI-based question-answer generation and evaluation system leverages advanced AI technologies to enhance efficiency, accuracy, and scalability in education and training. It comprises two main components: Question Generation and Answer Evaluation, developed through stages like data collection, preprocessing, model training, and system integration. An RNN model is employed for question generation, effectively handling sequential data to understand context and create relevant questions. Techniques such as teacher forcing and beam search are used to improve the quality and diversity of generated questions. For answer evaluation, a separate RNN model is trained to analyse responses, compare them with ideal answers using semantic similarity, assign scores based on predefined rubrics, and provide detailed feedback to enhance learning outcomes.

**Advantages:**

1. Efficiency
2. Scalability
3. Accuracy
4. Personalization
5. Diversity
6. Consistency

**Module Description:**

In this project we have created modules for faculties and students to sign up and login to application. After login faculty will perform below operations

1. Text Summary: Faculty can enter text or upload pdf or word file and then system will generate summary from input file or text
2. Subjective Question: using this module faculty can upload or enter text and then system will generated subjective question and answer from given text
3. Multiple Choice Question: using this module faculty can upload or enter text and then system will generated multiple choice question and answer from given text
4. View Marks: system will apply AI algorithm to evaluate students answers and then assigned marks and those marks can be view by faculty
5. Model Analysis: will display accuracy of model in terms of assigning marks to students answers evaluation which will compare students answers with correct answers generated by AI models

Students can login and perform below options

1. Generate Summary: can generate summary from word, pdf or text
2. Write Exam: can write subjective or multiple choice questions exam
3. View Marks: can view their marks obtained for each assignment.

**SYSTEM REQUIREMENT:**

**HARDWARE REQUIREMENTS:**

* **Processor - Intel i3(min)**
* Speed - 1.1 GHz
* RAM - 4GB(min)
* Hard Disk - 500 GB

**SOFTWARE REQUIREMENTS:**

* Operating System - Windows10(min)
* Programming Language - Python(3.7.0)