Work Integrated Learning Programmes Division
M.Tech. in AIML
NLP Applications
S1-25_AIMLCZG519

Assignment 2 – PS-9

General Instructions :

1. **The experiment is preferred to be conducted on the BITS OSHA Cloud Lab.**
2. **Attach a screenshot of the OSHA Lab portal that displays the student's credentials as proof of access and usage.**
3. **No extension on the deadline**
4. **Any queries regarding this problem statement should be addressed to Vasugi I, vasugii@wilp.bits-pilani.ac.in (Course LF)**

PART-A

Task A : Problem Statement:

Develop a simple application that can accurately analyze the sentiment (positive, negative, or neutral) of user-provided text. The application should leverage Natural Language Processing (NLP) techniques to extract the underlying sentiment from the text.

Web Interface: (4 Marks)

1. **User Interface:** Create an intuitive interface where users can input text or upload text files.
2. **Sentiment Display:** Visualize the detected sentiment using a clear and understandable format (e.g., a bar chart, a color-coded label).

Sentiment Analysis : (4 Marks)

1. **NLP Model Integration:** Implement an NLP model (e.g., using libraries like NLTK, spaCy, or TensorFlow) capable of performing sentiment analysis.
2. **Text Preprocessing:** Apply necessary preprocessing steps (e.g., tokenization, stemming, lemmatization) to prepare the text for analysis.

3. **Sentiment Prediction:** Utilize the trained model to predict the sentiment of the input text.

Task B : Enhancement Plan **(2 Marks)**

Provide a detailed documentation that would explain the step – by- step process to enhance your Sentiment Analysis Application to implement a real-time feedback feature that lets users provide immediate input on the accuracy of the sentiment analysis results, which can then be used to continuously refine and enhance the model.

PART – B

Literature Survey **(5 Marks)**

Conduct a literature survey on the following topic to gain insights into the current state of research.

Topic : Sentiment Analysis on Multimodal Data

Deliverables:

PART - A

- A well-documented code (Python and frontend) for the knowledge graph application.
- Instructions for running the application locally.
- A brief report explaining the design choices and any challenges faced during implementation.
- A set screenshots that explains the entire flow of the application to be included in the report.
- Task-B to be submitted as a .pdf document.

PART – B

A well-documented literature review to be presented as a .pdf document