Gen-AI Hands On-1Project

NAME: Aakanksha Palavalli

SRN: PES2UG23CS925

Section: A

Documentation :

Project Summary: Poetry & Song Writer using Text Generation Models

This project implements a creative text generation system that automatically produces poetry and song-like text based on a user-defined themes such as Love, Space, or Coding. The system demonstrates the use of Natural Language Processing and Transformer-based language models to generate coherent, imaginative, and rhyming stanzas.

The core of the project is built using the Hugging Face Transformers library, specifically leveraging the pipelineAPI. A pre-trained GPT-2 Medium model is used as the text generator, which has been trained on a large corpus of internet text and is capable of learning linguistic patterns such as rhyme, rhythm, and semantic coherence.

The project is executed in Google Colab, providing access to GPU acceleration for efficient model inference. A custom prompt is designed to guide the model to generate poetic content with emotional depth and vivid imagery. Sampling techniques such as temperature scaling, top-p, and repetition penalty are applied to enhance creativity while maintaining readability and reducing redundant outputs.

Users can input any theme, and the system dynamically generates a short poem or song stanza aligned with that theme. The modular design allows easy switching between models depending on performance requirements.

Overall, this project demonstrates:

- Practical use of Transformer-based language models
- Application of text generation pipelines
- Prompt engineering for creative AI tasks
- Deployment of NLP models in a cloud environment

The system highlights how modern language models can be used as creative agents, opening possibilities in content generation, creative writing assistance, and AI-based artistic applications.