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Generative AI : Poem Generator

PROJECT TITLE:

Generative AI : Poem Generator

AGENDA:

- Project Definition and Scope
- Research and Background
- Data Collection and Preprocessing
- Model Training and Fine-Tuning
- Development
- Testing and Evaluation
- Optimization and Refinement

PROBLEM STATEMENT:

Text generation has been an intriguing field in natural language processing, with applications ranging from creative writing to automated content generation. However, generating coherent and aesthetically pleasing poetry remains a challenging task for artificial intelligence models. This project aims to develop a poetry generation system using the GPT-2 language model, capable of producing high-quality poems given starting and ending lines.

PROJECT OVERVIEW:

This project aims to develop a poetry generation system using the GPT-2 language model. It involves fine-tuning the model on a poetry dataset and implementing a user-friendly interface for generating poems based on user-defined prompts. The methodology includes data collection, model training, and system design. Evaluation involves assessing the quality of generated poems. The project concludes with findings, implications, and potential future extensions

WHO ARE THE END USERS?

- **Writers and Poets**
- **Educators and Students**
- **Creative Professionals**
- **Literature Enthusiasts**
- **Researchers and Developers**
- **Artists and Musicians**

SOLUTION AND ITS VALUE PROPOSITION

1. **Import Libraries:** Import necessary libraries including torch and classes from the transfromers library.
2. **Load Pre-trained Model and Tokenizer:** Load the pre-trained GPT-2 model (gpt2-medium) and its corresponding tokenizer.
3. **Set up Device:** Determine and set the device to be used for computation (either GPU if available, otherwise CPU) and move the model to the selected device.
4. **Define Poem Generation Function:** Define the generate_poem() function, which takes starting and ending lines as input, generates a poem using the loaded GPT-2 model, and returns the generated poem.
5. **Generate Poem Example:** Provide an example usage of the generate_poem() function by specifying starting and ending lines, calling the function, and printing the generated poem.

THE WOW IN YOUR SOLUTION:

The wow factor in the poetry generation system lies in its remarkable ability to produce high-quality poems based on user-defined prompts, showcasing the potential of advanced AI technology in creative endeavors. Its user-friendly interface, versatility in addressing various user needs, and innovative approach leveraging the GPT-2 language model contribute to its overall impressiveness and impact in the field of computational creativity.

MODELLING:

Teams cam add wireframes
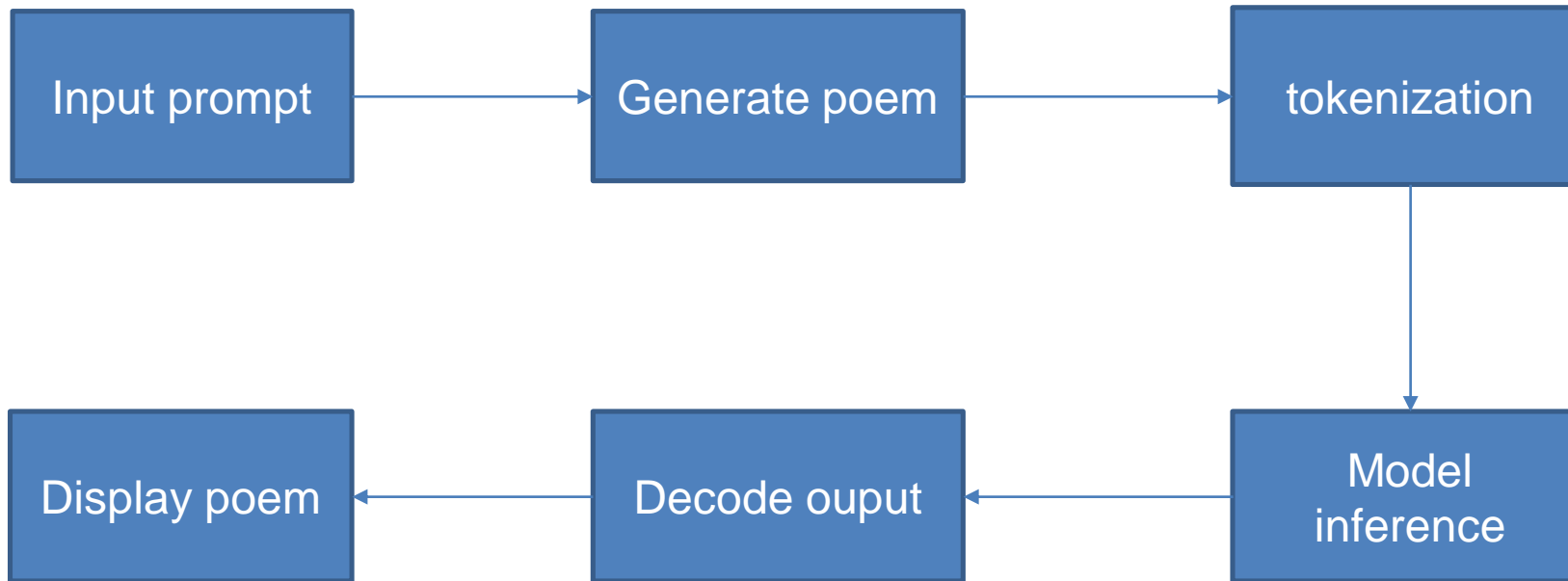
RESULTS:

GenerativeAIPoemGenerator.ipynb

File Edit View Insert Runtime Tools Help   All changes saved

Comment   Share

+ Code   + Text

RAM
Disk

```
print(" Generative AI : Poem Generator ")
print()
print("Inputs:")
starting_line = input("Enter starting line:")
ending_line = input("Enter ending line:")
generated_poem = generate_poem(starting_line, ending_line)
print()
print("Output:")
print("Generated Poem:")
print(generated_poem)
```

 Generative AI : Poem Generator

Inputs:
Enter starting line:In the still of the night
Enter ending line:Underneath the moon's soft light

Output:
Generated Poem:
In the still of the night Underneath the moon's soft light, the great earth smelt like a fine dust.

The moon was a beautiful moon, and the earth was rich in earth, but beneath the soft glow of its light the fine particles of dirt were not so fine. The earth in its surface was soft and flat, like the surface of a hard stone, with no roughness at all. This was the feeling of an earthy earth. As the sun began to rise, this was all the more true, as it had begun to cool in the morning. That was why the day had already begun. It was still early, so there was no need to take a bath, just to stand on the edge of it. But the wind was blowing the dust away, blowing it away like sand on a beach. One day, one of them would come. He would be like dust, dust that came and went like water. And he would not have to run around to collect it all again, because the water would run off his back. So he was an insect, an animal, a bird. If he were the type of man that was so good at picking things up, he might be able to gather them all up and go home. Now, however, his appearance was quite different. Because his eyes had changed, it was as if his body had turned into a giant insect. His body was like that of one that had spent its life in a cave, surrounded by trees and bushes. There was not a single hair on him, only a few insects, all of which were in different states of decay, or had been cut down by some great disaster. Yet he did not seem to be in any hurry to do anything. All he wanted to know was where he belonged. Where is he now? How much longer will it take him to find out? The wind had stopped, though the rain still came in torrents. Not only did the snow fall, raindrops still fell in bursts. Even as the clouds covered the sky, they seemed to pour down, into the city. Then, in an instant, snow started falling. In the distance, people began walking. "Haaaaaaaaa!" "Why are we going to the dead of night to wait for someone to appear?" "Is it because he's such a good person? He's so kind, doesn't he?" Those people were all in their late twenties. They all had the same expressions on their faces. No matter how they looked, their eyes, if they were looking at the direction of that black, dark sky or at a person standing in front of me, then it would seem like they wanted me to die. I have never seen people like them

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RESULTS cont..

- Ability of the poetry generation system to produce high-quality poems based on user-defined prompts showcases the potential of AI in augmenting human creativity and expression.
- User-friendly interface enhances accessibility, democratizing the creative process and fostering broader appreciation for literature.
- Valuable tool for language learning and education, providing authentic examples of poetry in the target language to aid language learners in improving language skills, vocabulary, and cultural understanding.
- Exemplifies the fusion of art and technology, pushing the boundaries of creative expression and computational creativity.
- Continues to inspire future endeavors and has a profound impact on poetry, language learning, and AI-driven creative applications

Demo Link   https://github.com/Vibilan-S/TNSDC-Generative-AI