GenAI Assignment 1

Name:	Shakirth Anisha
SRN:	PES2UG23CS927
Section:	I
Email ID	shakirthanisha@gmail.com
Phone Number	+91 7892754353

The objective of this benchmark assignment was to analyze how different transformer architectures behave when applied to tasks they are not specifically designed for, highlighting the importance of architecture in Generative AI.

Three models were evaluated using Hugging Face pipelines:

- BERT – encoder-only
- RoBERTa – optimized encoder-only
- BART – encoder–decoder

Tasks Performed

1. Text Generation:
   BERT and RoBERTa failed to generate meaningful text due to their encoder-only design. BART was able to generate text, though with limited quality.
2. Fill-Mask:
   BERT and RoBERTa performed well as this task aligns with their masked language modeling training. BART showed weaker results.

3. Question Answering:
   All models produced inconsistent outputs since the base models were not fine-tuned for question answering.

Observations

- Encoder-only models are best suited for understanding tasks.
- Encoder–decoder models are more suitable for generation tasks.
- Poor performance on mismatched tasks reflects architectural limitations.

Conclusion

This benchmark demonstrates that model performance strongly depends on the alignment between task requirements and transformer architecture, reinforcing key concepts from Unit 1.