Generative AI and its Applications

HandsOn - 1

Name: Nandita R Nadig

SRN: PES2UG23CS365

Section: F

Observation Table:

Task	Model	Classification (Success/Failure)	Observation (What actually happened?)	Why did this happen? (Architectural Reason)
Generation	BERT	Failure	Pipeline throws error as text generation not supported.	BERT is an encoder-only model and cannot autoregressively generate tokens.
	RoBERTa	Failure	Text generation is not supported.	RoBERTa is also encoder-only and designed for representation learning.
	BART	Success	Generates text, but output is unstable.	BART supports generation via encoder–decoder architecture but is not optimized for free-form LM generation.
Fill-Mask	BERT	Success	Correctly predicts words like “generate”, “create”.	BERT is trained using Masked Language Modelling (MLM)
	RoBERTa	Success	Well-ranked masked word predictions.	RoBERTa improves upon BERT’s MLM training with more data and better optimization.
	BART	Success	Reasonable predictions but less confident than BERT/RoBERTa.	BART uses a denoising autoencoder objective rather than pure MLM.
QA	BERT	Failure	Incomplete answers	Base BERT is not fine-tuned for extractive QA tasks.
	RoBERTa	Failure	Extracts relevant phrases but inconsistent.	Strong encoder representations, but missing QA fine-tuning.
	BART	Failure	Answers are fluent but unreliable.	Encoder–decoder model without QA-specific fine-tuning.