GENAI - Handson - 1

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Task	Model	Classification (Success/Failure)	Observation (What actually happened?)	Why did this happen? (Architectural Reason)
Generation	BERT	**Failure**	Generated repetitive dots (`.....`) or nonsense.	**BERT is an Encoder-only model.** It is designed for understanding (bidirectional context), not for autoregressive text generation (predicting the next word).
	RoBERTa	**Failure**	Stopped immediately or repeated the prompt.	**RoBERTa is an Encoder-only model.** Like BERT, it lacks a decoder to generate text sequentially.
	BART	**Success (Architecturally)**	Generated text (though low quality/hallucinated).	**BART is an Encoder-Decoder model.** It has a decoder component capable of text generation, effectively making it a seq2seq model.
Fill-Mask	BERT	**Success**	Predicted meaningful words: `create` (0.54), `generate` (0.16).	**BERT is trained on Masked Language Modeling (MLM).** This is its native pre-training objective.
	RoBERTa	**Success**	Predicted meaningful words: `generate` (0.37), `create` (0.37).	**RoBERTa is also trained on MLM.** It excels at filling in missing information from bidirectional context.
	BART	**Partial Success**	Predicted relevant words: `create`, `help`. but with very low confidence.	**BART's training includes text infilling.** Although acts as a seq2seq, its encoder understands masked inputs.
QA	BERT	**Partial Success**	Returns answer but low accuracy/confidence	Not fine-tuned on QA (SQuAD)
	RoBERTa	**Partial Success**	Similar weak behavior	Base model without QA fine-tuning
	BART	**Failure**	Answer: `poses significant` (Incorrect span).	**Lack of Fine-tuning.** Base models generally need specific training data to perform precise Question Answering tasks.