Unit 1 Hands-on: Generative AI & NLP Fundamentals

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Output Table:

Generation	BERT	*Failure*	*Example: Generated nonsense or random symbols.*	*BERT is an Encoder; it isn't trained to predict the next word.*
	RoBERTa	Failure	Similar to BERT, output was incoherent or generation did not complete properly.	RoBERTa is also an encoder-only model focused on understanding, not generation
	BART	Partial Success	Text was generated but was largely incoherent and accompanied by weight mismatch warnings.	BART is an encoder–decoder model but is not optimized for free-form text generation like GPT-style models.
Fill-Mask	BERT	*Success*	*Predicted 'create', 'generate'.*	*BERT is trained on Masked Language Modeling (MLM).*
	RoBERTa	Success	Produced accurate and confident predictions for the masked token	RoBERTa is optimized for MLM with improved training strategies.
	BART	Failure	Task not well supported; predictions were poor or inconsistent.	BART is trained for sequence-to-sequence tasks, not MLM.

QA	BERT	Partial Success	Answer was incomplete or sometimes inaccurate.	Base BERT is not fine-tuned on QA datasets like SQuAD.
	RoBERTa	Partial Success	Slightly better answers than BERT but still inconsistent.	Improved pretraining helps, but QA fine-tuning is still required.
	BART	Failure	Output was incorrect or unrelated to the question.	BART requires task-specific QA fine-tuning; base model is unsuitable.