Assignment3

Part A – Conceptual Questions

1. Explain the core architecture and working mechanism of Amazon Comprehend.
2. Use Case: Propose how Amazon Comprehend could be used by an e-commerce company to automatically extract and analyze customer feedback from product reviews.
3. Describe the main components of Amazon Lex (Intents, Utterances, Slots, Prompts).
4. What role does Automatic Speech Recognition (ASR) and Natural Language Understanding (NLU) play in Lex?

5. Use Case: Design a banking chatbot using Amazon Lex that helps customers check their account balance and transfer funds. Identify intents, utterences,slots
6. Compare the different voice generation technologies: Standard TTS, Neural TTS (NTTS), and Generative Engine.
7. Use Case: Imagine you are building an e-learning platform for visually impaired students. Explain how Amazon Polly can make the platform more inclusive and effective.
   8. Outline the key steps involved in Amazon Transcribe's processing pipeline.
9. How does Speaker Diarization and Custom Vocabulary improve transcription accuracy?

10. Use Case: Describe how a media company can use Amazon Transcribe to automatically generate subtitles for live news broadcasts.

Part B – Analytical & Application Questions

1. 7. Mini Project: Choose one of the following real-world application ideas and outline how you would implement it using at least two AWS AI services discussed in the module:
   a. Healthcare: Automate doctor's note transcription and medical term extraction.
   b. Education: Convert lecture videos into transcribed, searchable text and generate narrated summaries.
   c. Retail: Create a multilingual voice-based shopping assistant.
   d. Human Resources: Build a chatbot that screens resumes and schedules interviews.
   For your chosen project:
   - Define the problem statement.
   - Identify which AWS services you'll use and why.
   - Describe the data flow and expected outputs.
   - Mention any challenges or ethical considerations.

Part C – Research & Real-World Analysis

1. case study on Netflix OR BMW Group OR Siemens OR Coca-Cola that uses AWS language AI services. Describe which service they use and how it has impacted their operations or customer experience.