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Praesignis AWS re/Start Special Projects

Project 3 - Create your interactive chatbot using AWS Lex

1. Project Overview

In this project learners will learn to create an interactive chatbot using AWS Lex. Learners will:

- Understand the basics of AWS Lex chatbot creation.
- Create a functional chatbot with one intent and related utterances.
- Demonstrate knowledge of Amazon Lex's user interaction flow.
- Learning Outcomes:
- By the end of Part 1, learners will be able to:
  - ✓ Set up and configure a chatbot using AWS Lex.
  - ✓ Create intent-driven responses aligned with utterances.
  - ✓ Deploy a simple chatbot for user interaction.
- By the end of Part 2, learners will be able to:
  - ✓ Build a functional knowledge quiz in Amazon Lex.
  - ✓ Demonstrate effective communication and presentation skills.
  - ✓ Deliver a live demo and explain chatbot functionalities to stakeholders

2. Learning Outcomes

Through this project, learners will develop the following skills:

2.1. Chatbot Development: Learners will design and build interactive chatbots using Amazon Lex.

2.2. Problem-solving: They will create quiz-based flows with branching logic to handle various user responses.

2.3. Technical Knowledge: The project will deepen learners' understanding of AWS services like Amazon Lex and their role in AI-driven interactions.

2.4. Communication and Presentation: By presenting their chatbot, learners will improve their ability to explain technical concepts to non-technical audiences.

3. Project Steps to follow

What Are Chatbots?

Chatbots are computer programs designed to simulate conversations with humans. They use

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natural language processing (NLP) to understand user input and provide relevant responses. Chatbots can be found in customer service applications, virtual assistants, and educational tools.

Why Are Chatbots Useful?
Due to their versatility and efficiency, chatbots are becoming essential tools for businesses and individuals. In this project, we will use AWS Lex, AWS's AI service, which allows you to build, test, and deploy your very own chatbot.

Instructions – Part 1

Step 1:

- Log in to AWS:
- Navigate to the AWS Management Console.
- Search for "Lex" and open Amazon Lex.
- Create Your Lex Bot:

Step 2:

- Click "Create bot."
- Name your bot. Ensure it uses "English (ZA)" as the language.(Use any name that is relevant for your example)
- Choose "None" for advanced configurations.
- Select "Create."

Step 3:

- Add One Intent:
- In the intents section, click "Create intent."
- Name it (e.g., S3Info). (You can use any name relevant to your example)

Step 4:
Add Utterances:

- Enter utterances that are topic-specific (e.g., "What is S3?", "Tell me about Amazon S3"). Ensure all utterances relate to Amazon S3. For this part of the project add one intent and one utterance.

Utterances are what a user might type into a bot like a question or a request for help

Step 5:
Set a Response:

- Under the "Response" section, add your response (e.g., "Amazon S3 is a cloud storage service that lets you store and retrieve any amount of data from anywhere.").

You want your user to receive this response to their questions or utterances.
Tip: for this section try not to add a lot of utterances and differing responses (keep it to one for now)

Step 6:

- Save the Intent:

- Save and build your bot. Test it by typing one of the utterances in the test window to ensure it responds accurately.
- Congratulations you have just created a simple bot

AWS Chatbot Creation – Part 2 with Client Scenario and Presentation (Challenge)

Scenario:
You are a chatbot developer working with an educational startup "Cloud Learners Inc." (You can choose any company or make up your own this is just for example purposes) The company wants to introduce a knowledge-check quiz for learners using Amazon Lex. They have requested a simple but engaging chatbot that quizzes users on Amazon S3 (you can choose any AWS service or any AWS services) Your job is to create the quiz, ensure the responses are interactive, and then present a live demo with a PowerPoint presentation to the client.

This portion of the project is a CHALLENGE and is meant to stretch you beyond your comforts. Therefore, the instructions are basic. They will not give you everything. You will need to figure out errors on your own first before asking for help from your instructor.

Learning Objectives (Part 2)

- Create a quiz in the chatbot to test knowledge on a specific topic (Amazon S3).
- Use branching logic to handle multiple-choice responses.
- Present a live demo and explain chatbot features to a fictional client.

Learning Outcomes:
By the end of Part 2, learners will be able to:

- Build a functional knowledge quiz in Amazon Lex.
- Demonstrate effective communication and presentation skills.
- Deliver a live demo and explain chatbot functionalities to stakeholders.

Instructions – Part 2
Step 1: Scenario Setup:
Imagine your client (CloudLearners Inc.) wants:

- A chatbot that quizzes learners on their knowledge of Amazon S3(or your chosen scenario)
- Clear feedback for correct and incorrect answers.
- An engaging, educational experience to encourage users to learn more.

Step 2: Creating the S3 Quiz Intent:

- Create a new Intent:
- Name it S3Quiz.

- Add utterances like:
- “Start quiz.”
- “Quiz me on S3.”
- “I’m ready for the quiz.”
- Add the First Quiz Question:

Step 3:

- Add a response like: “What does S3 stand for?”
- Provide multiple choices in the response:
- Simple Storage Service
- Secure Server Storage
- Smart Storage System
- Prompt: “Choose A, B, or C.”

Step 4: Using Branching Logic for User Responses:

Add Conditional Responses:

- For the correct answer (“A”), add:
- Response: “Correct! S3 stands for Simple Storage Service.”
- Follow-up: “Would you like the next question?”
- For incorrect answers:
- Response: “Incorrect. The correct answer is Simple Storage Service. Would you like to try the next question?”
- Continue the Quiz:

Step 4.1: Add another question:

- “What is Amazon S3 mainly used for?”

A) Cloud storage
B) Web hosting
C) Cloud computing
Use the same logic to provide feedback for each answer.
Step 5. Testing the Quiz:
Test the Quiz:

- Go to the test window in Amazon Lex.
- Try all quiz-related utterances.
- Test both correct and incorrect responses to ensure they are handled correctly.
- Ensure the quiz flow allows users to retry or move on to the next question.

4. Project Requirements

4.1. PowerPoint Presentation

Instructions:
Scenario Presentation Guidelines:
Your task is to present your chatbot to "CloudLearners Inc." (or whichever client you choose) as if they are your client. Prepare a short presentation and live demo.
Your presentation should cover the following key points:

- **Introduction to Amazon Lex:**
  Explain what Amazon Lex is, its core capabilities, and how it can be used to build conversational interfaces like chatbots.

- **Client Requirements:**
  Imagine Cloud Learners Inc. as your client. Outline their requirements for an educational chatbot that provides an interactive quiz experience for students.

- **Solution Overview:**
  Describe how you built the quiz bot to meet the client's requirements. Highlight the quiz's structure, user interactions, feedback for correct and incorrect answers, and how the bot maintains a user-friendly flow.

- **Technical Approach:**
  Briefly discuss how you used intents, utterances, and branching to create a seamless quiz flow. Mention any challenges you faced and how you overcame them.

Prepare to demonstrate your working quiz bot. Walk the audience through the interaction flow, showing how users are prompted with questions, receive feedback, and navigate through the quiz.

4.2. Live Demo

- Open Amazon Lex and show the chatbot in action.
- Demonstrate the quiz by typing quiz-related utterances.
- Show how the chatbot responds to both correct and incorrect answers.
- Highlight the smooth flow of the quiz.