

HOTEL BOOKING

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AIM

Creating a Chat bot using Amazon Lex Tool.

Intent of the chat bot : Book Hotel

TOOLS

Amazon Lex

Purpose: The core service for building conversational interfaces using voice and text.

Features: Automatic speech recognition (ASR), natural language understanding (NLU), integration with AWS Lambda, built-in dialog management.



PROJECT OVERVIEW

The hotel booking chatbot is designed to revolutionize the way users interact with hotel reservation systems. Leveraging the capabilities of Amazon Lex, this chatbot provides a seamless, conversational interface that allows users to book hotel rooms efficiently through both text and voice interactions. By automating the booking process, the chatbot ensures a smooth and personalized user experience, enhancing customer satisfaction and streamlining hotel operations.

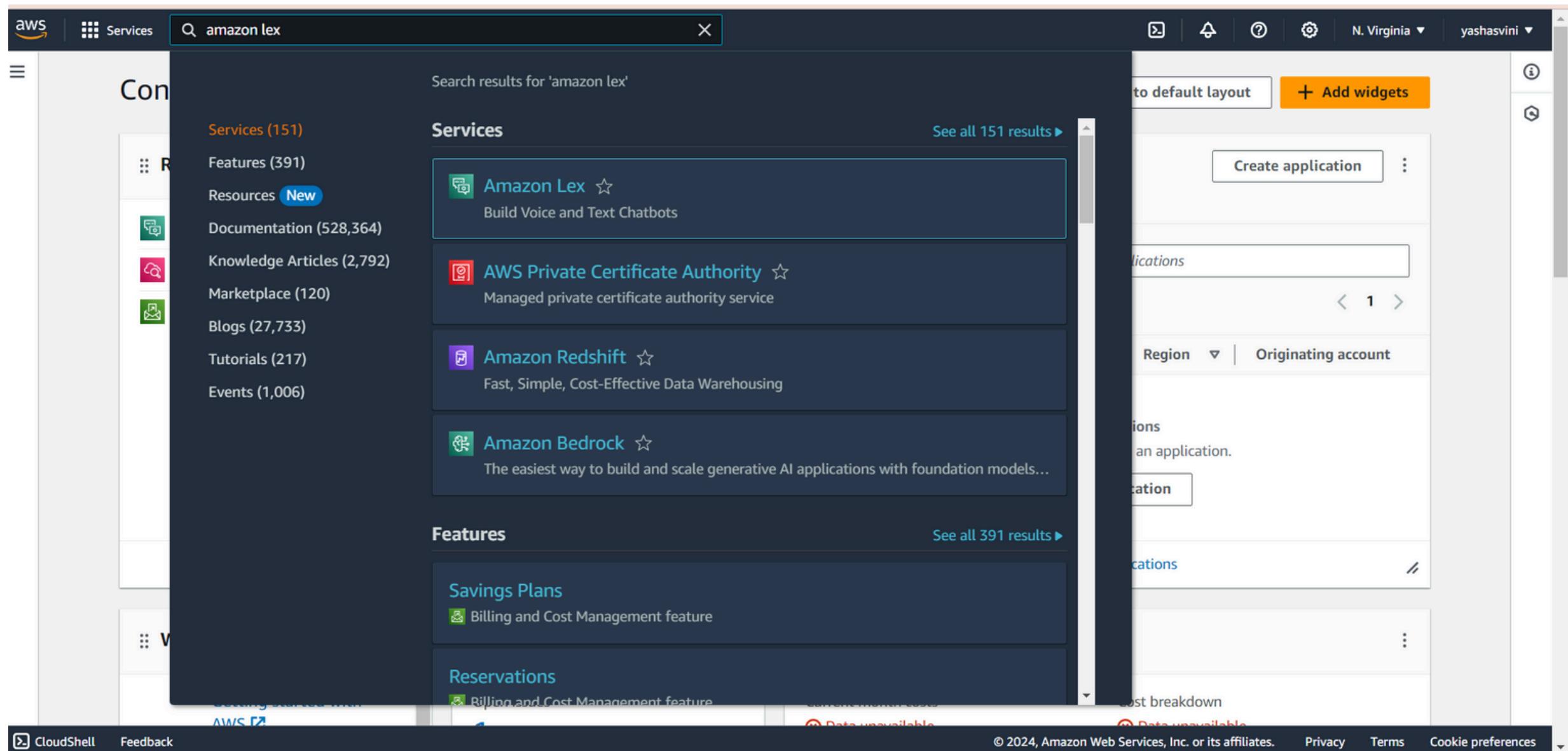
Key Features

- Room information
- Price calculation
- Availability checking

IMPLEMENTATION STEPS

Step - 1

Sign Up for AWS and Access the Amazon Lex Console



Step - 2

Create a New Lex Bot

Bot name: Booking Hotel

IAM role: Create or select an IAM role that Amazon Lex will use to access AWS resources.

The screenshot shows the AWS Lambda function configuration interface. The top navigation bar includes the AWS logo, Services, Search, and user information (N. Virginia, yashasvini). The main content area is divided into two sections: 'Bot configuration' and 'IAM permissions'.

Bot configuration

- Bot name:** BookHotel (Maximum 100 characters. Valid characters: A-Z, a-z, 0-9, -, _)
- Description - optional:** IT HelpDesk bot for employees in the North America office. (Maximum 200 characters)

IAM permissions Info

IAM roles are used to access other services on your behalf.

Runtime role: Choose a role that defines permissions for your bot. To create a custom role, use the IAM console.

Create a role with basic Amazon Lex permissions.
 Use an existing role.

Creating a role takes a few minutes. Don't delete the role or edit the trust or permissions policies in this role until we've finished creating it.

At the bottom, there are links for CloudShell, Feedback, Copyright (© 2024, Amazon Web Services, Inc. or its affiliates.), Privacy, Terms, and Cookie preferences.

Step - 3

Create the BookHotel Intent

Add sample utterances to train the bot:

- Can I book a hotel
- Can you reserve a room for me?
- I need a hotel booking

The screenshot shows the AWS Lambda console interface. At the top, there's a search bar and a breadcrumb navigation path: Services > Lambda > Create function. Below the path, there's a dropdown for 'Runtime' set to 'Node.js 18.x'. Under 'Function name', the text 'BookHotel' is entered. In the 'Handler' field, 'index.handler' is selected. The 'Role' dropdown is set to 'Lambda execution role (AWSLambdaBasicExecutionRole)'. The 'Create function' button is highlighted in blue at the bottom right.

The screenshot shows the AWS Lex console interface. At the top, there's a search bar and a breadcrumb navigation path: Services > Lex > Bots > Bot: BookHotel > Versions > Version: Draft > All languages > Language: English (US) > Intents > Intent: HotelBooking. The 'Draft version' dropdown is set to 'English (US)'. The 'Intent details' section shows the intent name 'HotelBooking' and a description: 'An intent represents an action that fulfills a user's request. Intents can have arguments called slots that represent variable information.' The 'Conversation flow' section is collapsed. The bottom of the screen shows tabs for 'Editor' (selected), 'Visual builder', and 'New'.

Step - 4

Add Slots to the BookHotel Intent:

- CheckInDate
- Price
- Day of stay
- Room Type
- Guests

The screenshot shows the Amazon Lex Slot types page for the 'BookHotel' bot. The left sidebar shows the navigation path: AWS Services > Lex > Bots > Bot: BookHotel > Versions > Version: Draft > All languages > Language: English (US) > Slot types. The main content area displays a table of slot types with the following data:

Name	Description	Type	Last edited
RoomType	-	Custom	6 minutes ago
Price	-	Custom	5 minutes ago
Guests	-	Custom	1 minute ago
DayOfStay	-	Custom	19 hours ago
checkInDate	-	Custom	6 minutes ago

At the top right of the page, there are 'Build' and 'Test' buttons, and a message indicating 'English (US) has not built changes.'

Step - 5

Giving prompt to display in chatbot

- What type of room would you like to book?
- On which day are you planning to stay here?
- what is the price of a room for one day?
- what is your checkIn date?
- How many Guests will be staying?

The screenshot shows the Amazon Lex console interface. The top navigation bar includes the AWS logo, Services, Search, Draft version (selected), English (US) (selected), Successfully built, N. Virginia, and yashasvini. The main area displays the HotelBooking intent under the FallbackIntent tab. Five prompts are listed, each with a message and slot type:

- Prompt for slot: RoomType
Message: What type of room would you like to book?
Slot type: RoomType
- Prompt for slot: DayOfStay
Message: On which day are you planning to stay here?
Slot type: DayOfStay
- Prompt for slot: Price
Message: What is the price of room for one day?
Slot type: Price
- Prompt for slot: CheckInDate
Message: What is your check-in date?
Slot type: checkInDate
- Prompt for slot: Guests
Message: How many Guests will be staying?
Slot type: Guests

A Confirmation section is shown below, with the Active toggle switch turned off. At the bottom, there are tabs for Editor (selected), Visual builder, and New, along with a Save intent button.

Step - 6

Set the Fulfillment

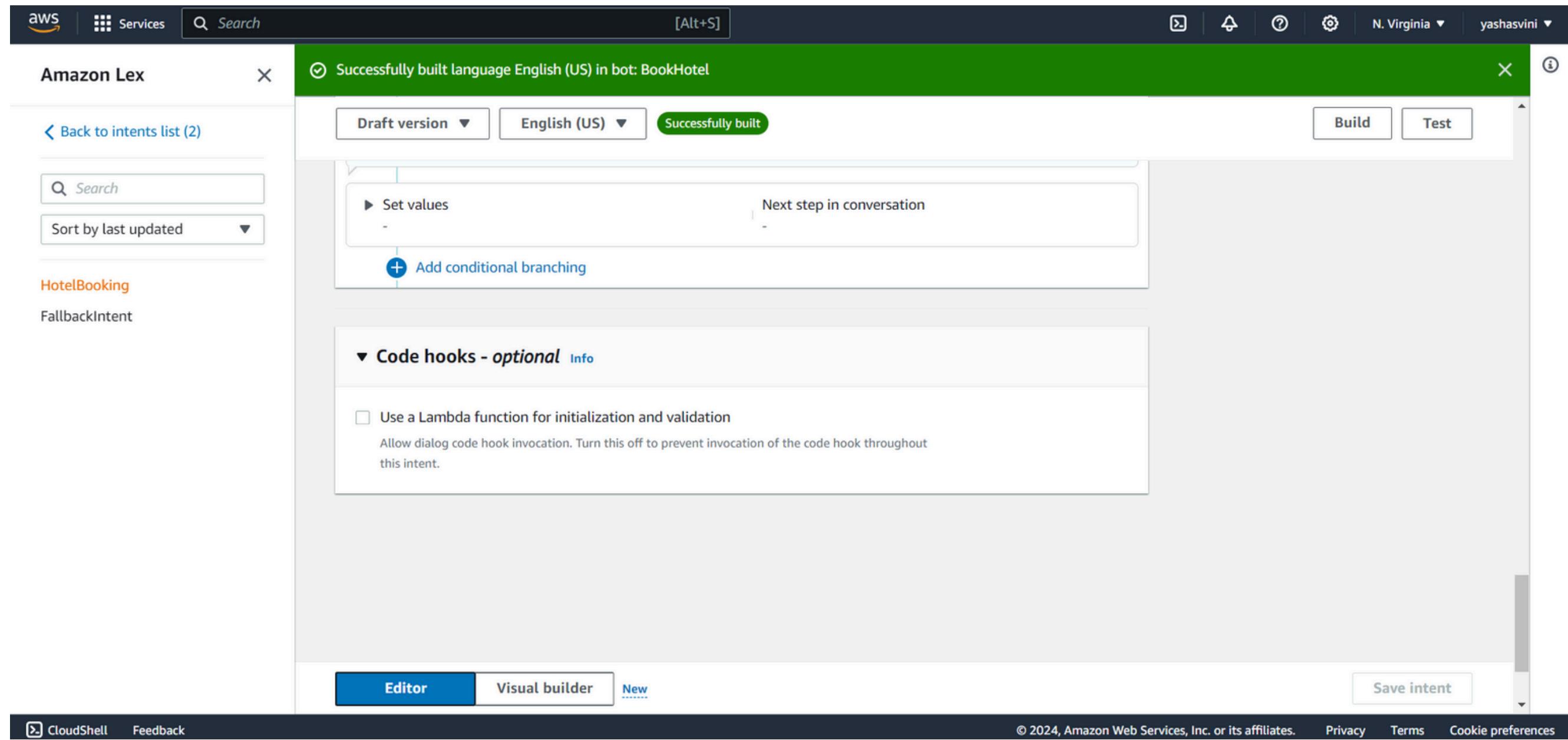
- On successfull fulfillment - Thankyou for choosing our hotel
- In case of failure - Something went wrong

The screenshot shows the Amazon Lex Fulfillment Info configuration page for the HotelBooking intent. The interface includes:

- Fulfillment Info:** A section where a Lambda function is triggered to fulfill the intent. It is currently set to "Active".
- On successful fulfillment:** Message: "Thank you for choosing our hotel."
- In case of failure:** Message: "Something went wrong"
- Advanced options:** A link to configure success, failure, and timeout responses.
- Closing response:** A section where a response is defined when the intent is closed. It is currently set to "Active".
- Editor:** The active tab for configuration.
- Visual builder:** An alternative configuration tool.
- Save intent:** A button to save the configuration.

Step - 7

Save and build the intent



The screenshot shows the Amazon Lex Intent Builder interface. At the top, there's a green banner indicating "Successfully built language English (US) in bot: BookHotel". Below the banner, the interface includes a "Draft version" dropdown, a language dropdown set to "English (US)", and a "Successfully built" button. To the right are "Build" and "Test" buttons. On the left, a sidebar lists intents: "HotelBooking" (selected) and "FallbackIntent". The main area contains sections for "Set values" (with a "Next step in conversation" link), "Add conditional branching" (with a plus icon), and "Code hooks - optional" (with an info link). Under "Code hooks", there's a checkbox for "Use a Lambda function for initialization and validation" with a descriptive note below it. At the bottom, tabs for "Editor" (selected), "Visual builder", and "New" are shown, along with a "Save intent" button.

Step - 8

Test the Bot

- In the Amazon Lex console, use the test window to simulate user interactions.
- Enter phrases like "I want to book a hotel room".
- Respond to the prompts and ensure all information is gathered correctly.
- Confirm the bot provides the booking confirmation and pricing details accurately.

The screenshot shows the Amazon Lex console interface. The top navigation bar includes the AWS logo, Services dropdown, a search bar, and account information for N. Virginia and user yashasvini. The main left sidebar lists 'Amazon Lex' and two intents: 'BookHotel' (selected) and 'FallbackIntent'. The main content area displays the 'Intent: BookHotel' configuration. It shows the intent name 'BookHotel', a description placeholder, and a 'Conversation flow' section. A modal window titled 'Test Draft version' is open on the right, indicating a successful build submitted 14 minutes ago and providing a 'Inspect' button. At the bottom, there's a message input field with a microphone icon and a 'Save intent' button.

Step - 9

Deploy the Bot

The screenshot shows the Amazon Lex console interface. On the left, a sidebar lists slot types: Guests, Price, checkInDate, RoomType, and DayOfStay. The 'DayOfStay' slot type is currently selected and highlighted in orange. The main panel displays the configuration for the 'DayOfStay' slot type. It includes sections for 'Slot value resolution' (with 'Restrict to slot values' selected) and 'Slot type values' (listing three values: 25-07-2024, 26-07-2024, and 27-07-2024). A green banner at the top indicates that the language English (US) has been successfully built for the bot BookHotel. To the right, a separate window titled 'Test Draft version' shows a conversation transcript. The user asks 'can you reserve a room for me?' and 'What type of room would you like to book?'. The bot responds with 'Queen'. The user then asks 'On which day are you planning to stay here?' and the bot replies '16-07-2024'. A green checkmark at the bottom of the test window indicates 'Ready for complete testing'.

N. Virginia yashasvini

Test Draft version

Last build submitted: 5 minutes ago

Inspect

What is the price of room for one day?

2000

What is your check-in date?

17-07-2024

How many Guests will be staying?

✓ Ready for complete testing

Type a message

Save Slot type

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N. Virginia yashasvini

Test Draft version

Last build submitted: 5 minutes ago

Inspect

How many Guests will be staying?

2

Thank you for choosing our hotel.

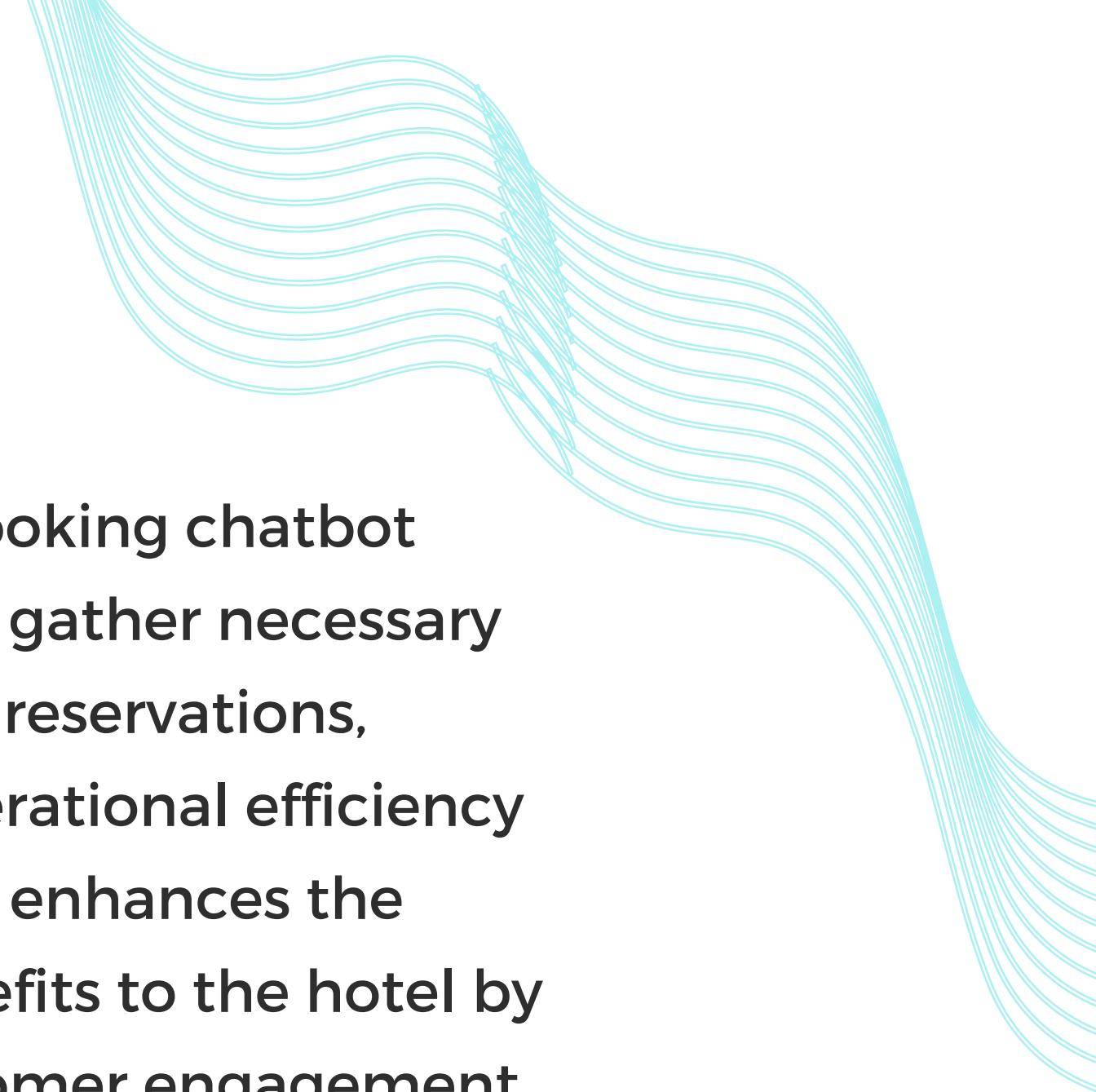
✓ Ready for complete testing

Type a message

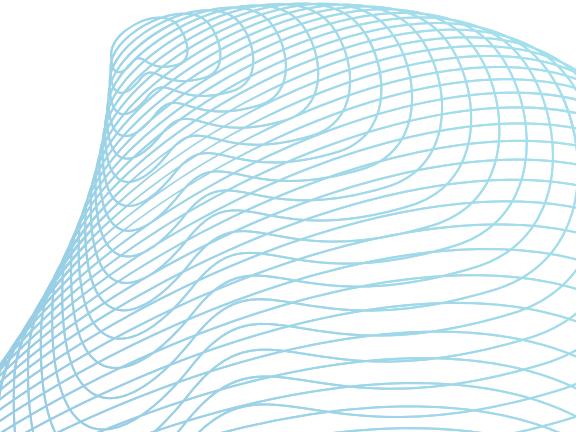
Save Slot type

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CONCLUSION



By following these steps, you can create a functional hotel booking chatbot using Amazon Lex. The chatbot will handle user interactions, gather necessary information for hotel bookings, calculate prices, and confirm reservations, providing a seamless experience for users and improving operational efficiency for the hotel. In summary, the hotel booking chatbot not only enhances the booking experience for users but also brings substantial benefits to the hotel by streamlining operations, reducing costs, and increasing customer engagement. As conversational AI continues to evolve, this chatbot exemplifies the potential of leveraging advanced technologies to drive business success and elevate customer experiences.



THANK YOU

