
ChatBot-Hotel Room Booking Assistant

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OVERVIEW

In this project, we built a chatbot using Amazon Lex to simplify hotel bookings for users. The chatbot assists users in selecting room types, provides pricing information, and handles bookings seamlessly. The system's key focus is to automate and enhance user experience in booking hotel rooms.

GOALS

1. To develop a fully functional chatbot for hotel room reservations.
2. To provide users with detailed information about room categories and pricing.
3. To enable a smooth, step-by-step booking flow.
4. To ensure all booking confirmations include relevant details (room type and stay duration).

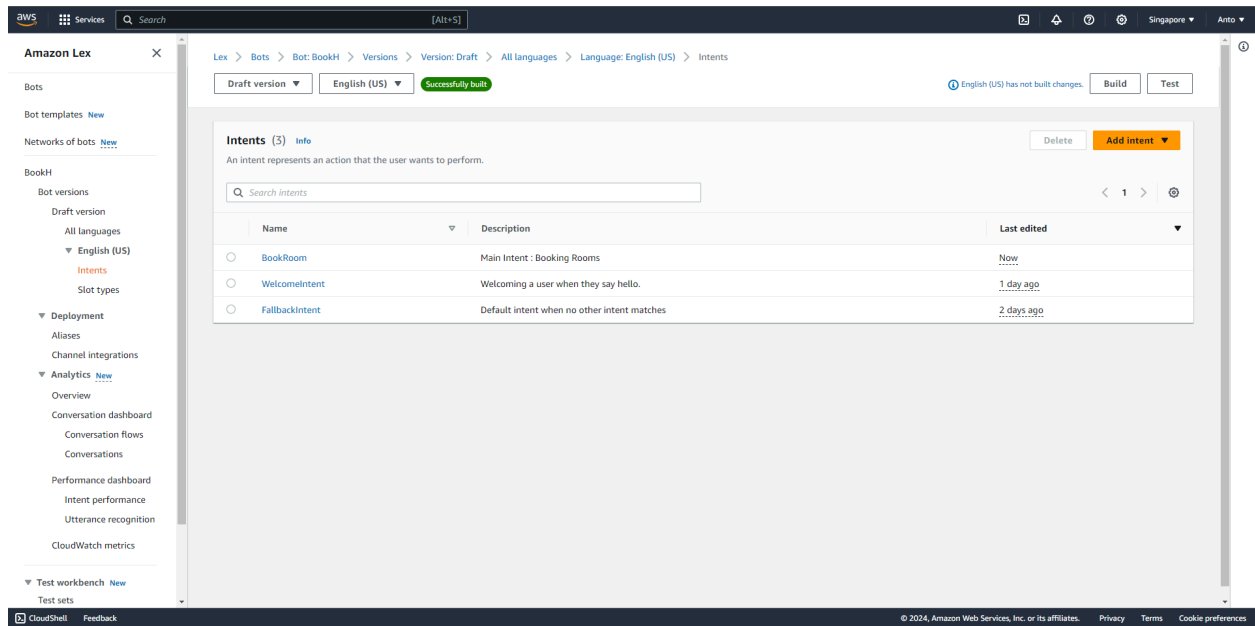
Tools and Technologies

- Amazon Lex: Natural Language Understanding (NLU) service for chatbot interaction.
- AWS Lambda: For fulfillment logic to process user input and complete booking.
- Amazon DynamoDB: Optional for storing booking details.
- AWS CloudWatch: For monitoring and logging.
- AWS IAM: To control permissions and security for Lex and Lambda.

Implementation

1.1. Amazon Lex Setup

The chatbot was created in Amazon Lex using the **BookHotelRoom** intent. The slots were used to gather the necessary information from the user.



1.2. Intent Configuration

- **Intent Name:** BookRoom
- **Sample Utterances:**
 - "Are any rooms available?"
 - "Need to book rooms"
 - "Need Rooms"

1.3. Slots and Slot Types

Slot Name	Slot Type	Description
RoomType	Custom (Classic, Duplex, Suite, etc.)	Captures the room type chosen by the user.
CheckInDate	Amazon.Date	Captures check in date.
DurationOfStay	Amazon.NUMBER	Captures the number of days for the stay.
Confirmation	Amazon.YesNo	Confirms the booking details with the user.

▼ Slots (4) - optional [Info](#)

Information that a bot needs to fulfill the intent. The bot prompts for slots required for intent fulfillment, in priority order below.

Add slot

Q Filter

⋮

▶ Prompt for slot: RoomType

Message: What type of room would you like to book? ...

Slot type
RoomType

×

⋮

▶ Prompt for slot: CheckInDate

Message: What date would you like to check in?

⚡ Slot type
AMAZON.Date

×

⋮

▶ Prompt for slot: DurationOfStay

Message: How many days would you like to stay?

⚡ Slot type
AMAZON.Number

×

⋮

▶ Prompt for slot: ConfirmBooking

Message: Do you want to confirm your booking?

⚡ Slot type
AMAZON.Confirmation

×

RoomPrice: You can create custom slot types for room categories and associate each room with a static price. For example:

- Classic: \$100 per night
- Deluxe: \$150 per night
- Suite: \$200 per night
- Duplex: \$250 per night

Singapore ▼

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Slot: RoomType > Slot prompts editor

Title

RoomType

Maximum 250 characters. Valid characters: A-Z, a-z, 0-9, @, #, \$

Subtitle

Maximum 250 characters. Valid characters: A-Z, a-z, 0-9, @, #, \$

▼ Buttons - optional

Button 1 title

Classic-\$100 per day

Button title can have up to 50 characters.

Button 1 value

Classic-\$100 per day

Button value can have up to 50 characters.

Button 2 title

Deluxe-\$150 per day

Button title can have up to 50 characters.

Button 2 value

Deluxe-\$150 per day

Button value can have up to 50 characters.

Button 3 title

Suite-\$200 per day

Button title can have up to 50 characters.

Button 3 value

Suite-\$200 per day

Button value can have up to 50 characters.

Button 4 title

Duplex-\$250 per day

Button title can have up to 50 characters.

Button 4 value

Duplex-\$250 per day

Button value can have up to 50 characters.

Add button

Cancel

Update prompts

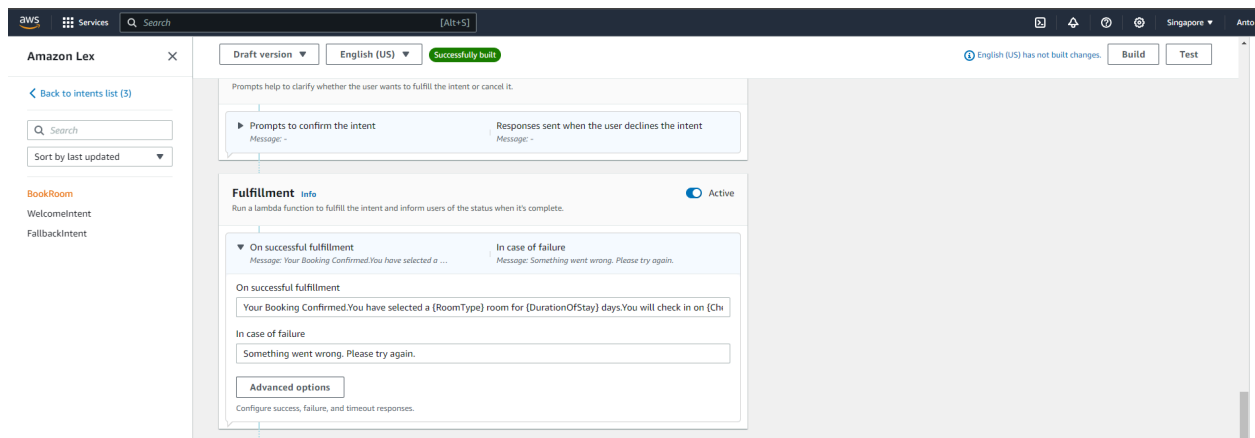
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1.4. Fulfillment Logic



Once the user provides all the required slot information (room type and stay duration), Lex will generate a **confirmation message** based on predefined logic. For example:

- Your Booking Confirmed.You have selected a {RoomType} room for {DurationOfStay} days.You will check in on {CheckInDate}. Thank you for choosing our hotel.

To handle situations where the user enters information that doesn't match any of the bot's defined intents or slots, you can implement a **fallback intent**.

“Something went wrong. Please try again.”

Testing and Results

Extensive testing was performed to ensure the chatbot responds accurately to user inputs and provides relevant room options and pricing details. Sample test cases included:

- Booking for various room types and stay durations.
- Ensuring the flow worked seamlessly for different user queries.

Test Draft version

Last build submitted: 8 minutes ago



Inspect

Hello

Hi! I'm BookH, your Hotel booking Assistant. How can I help you today?

Any rooms available?

OK, I can help you with that.

What type of room would you like to book? We have Classic, Deluxe, Suite, and Duplex rooms available.

RoomType

✓ Ready for complete testing



Type a message

Test Draft version

Last build submitted:

10 minutes ago



Inspect

RoomType

Classic-\$100 per
day

Deluxe-\$150 per
day

Suite-\$200 per
day

Duplex-\$250 per
day

Suite

What date would you like to
check in?

✓ Ready for complete testing



Type a message

Test Draft version

Last build submitted:

11 minutes ago



Inspect

30/10/2024

How many days would you like to stay?

2

Do you want to confirm your booking?

Yes

Your Booking Confirmed.You have selected a Suite room for 2 days.You will check in on 2024-10-30. Thank you for choosing our hotel.

✓ Ready for complete testing



Type a message

Future Improvements

Potential enhancements to the chatbot include:

- Adding more dynamic room types and seasonal pricing.
- Integrating with external hotel booking APIs for real-time availability.
- Expanding language support and adding more user-friendly features like cancellations and modifications.

Conclusion

The Hotel Booking Chatbot using Amazon Lex successfully demonstrates the use of cloud-based chatbot technology to automate and simplify the hotel booking process. By providing users with easy access to room information and booking confirmation, the chatbot significantly enhances the overall user experience.