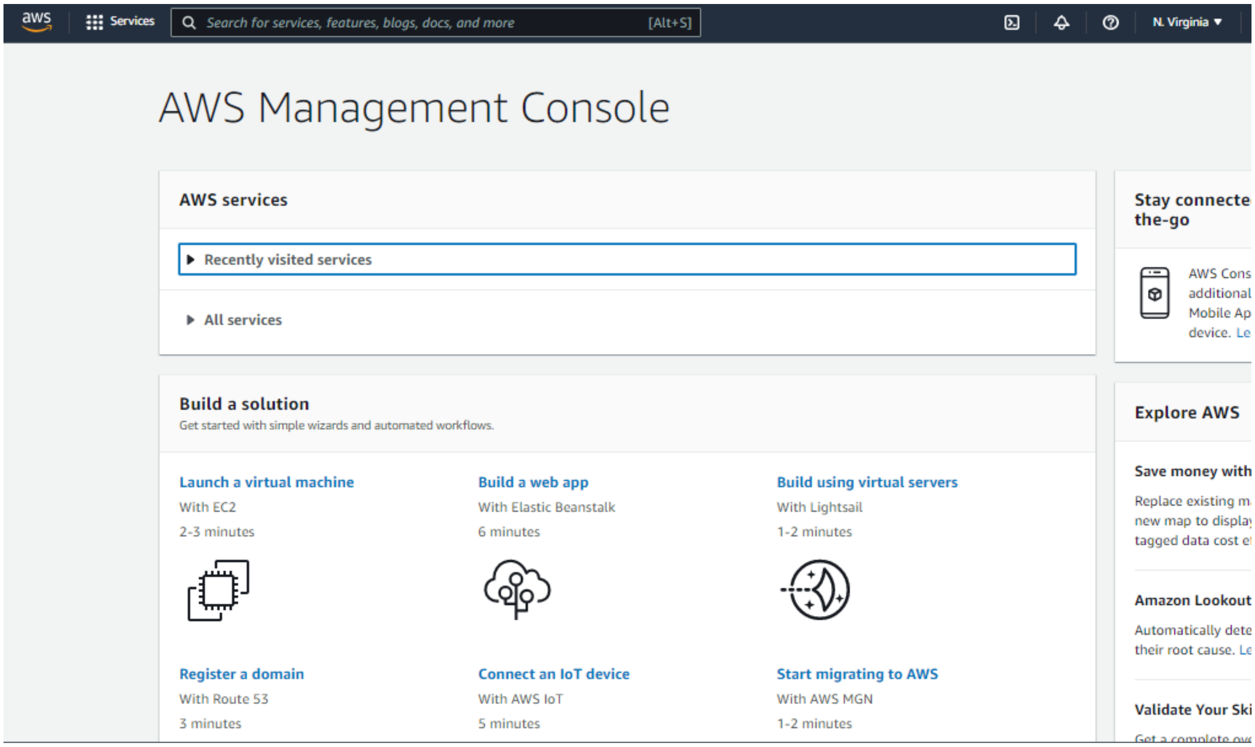
Amazon Lex documentation

Before you access to Amazon Lex, you should **have** or **sign up** AWS account and setup IAM user.

- Go to **AWS Management Console** and search for **Amazon Lex.**



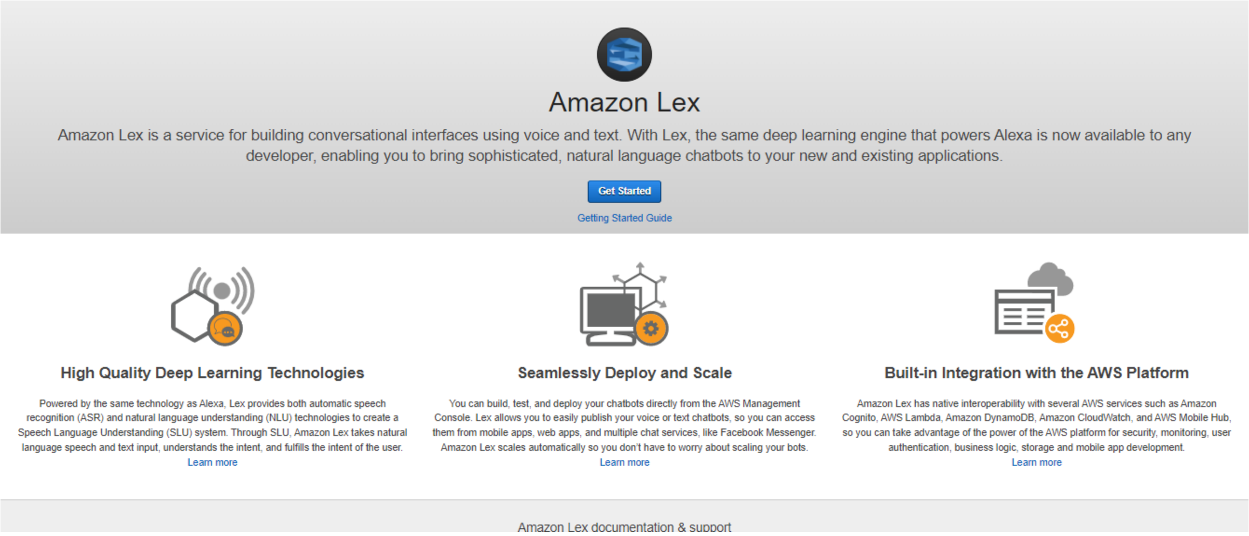
AWS Management Console

AWS services

Build a solution

Get started with simple wizards and automated workflows.

- **Amazon Lex** page will open and then click blue button as **Get started**.



Amazon Lex

Amazon Lex is a service for building conversational interfaces using voice and text. With Lex, the same deep learning engine that powers Alexa is now available to any developer, enabling you to bring sophisticated, natural language chatbots to your new and existing applications.

High Quality Deep Learning Technologies

Powered by the same technology as Alexa, Lex provides both automatic speech recognition (ASR) and natural language understanding (NLU) technologies to create a Speech Language Understanding (SLU) system. Through SLU, Amazon Lex takes natural language speech and text input, understands the intent, and fulfills the intent of the user.

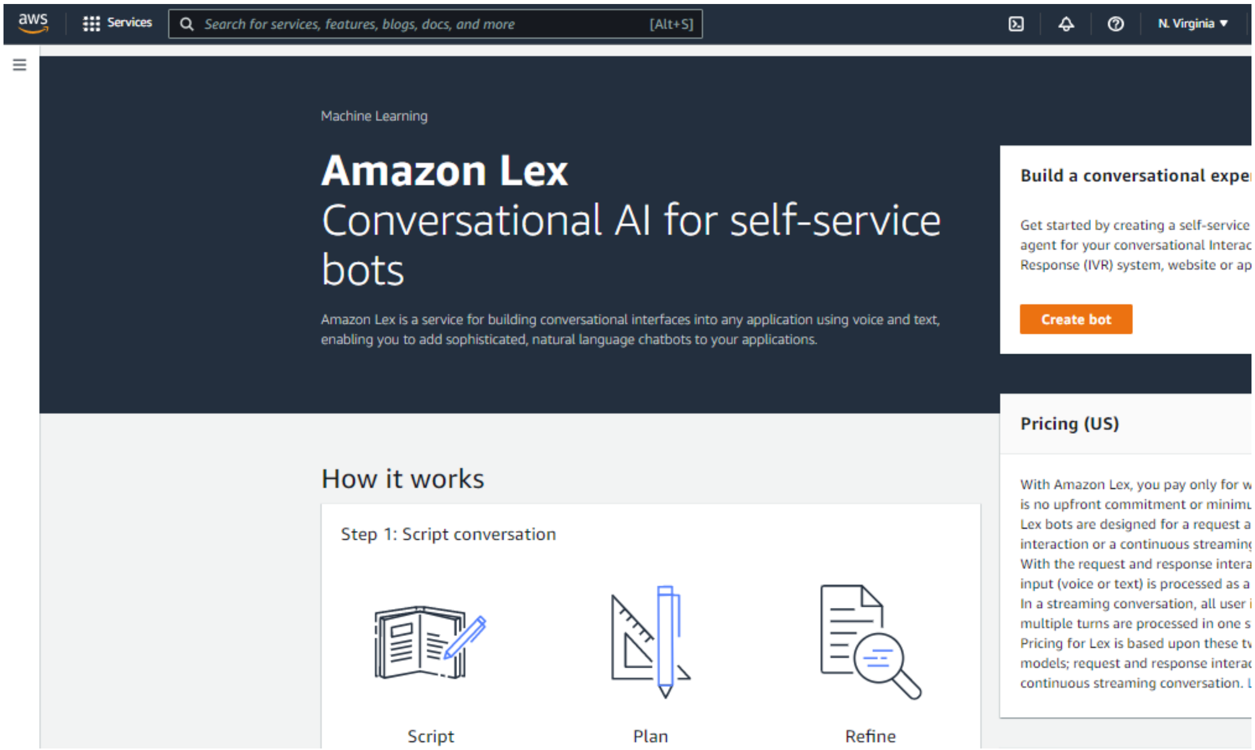
Seamlessly Deploy and Scale

You can build, test, and deploy your chatbots directly from the AWS Management Console. Lex allows you to easily publish your voice or text chatbots, so you can access them from mobile apps, web apps, and multiple chat services, like Facebook Messenger. Amazon Lex scales automatically so you don't have to worry about scaling your bots.

Built-in Integration with the AWS Platform

Amazon Lex has native interoperability with several AWS services such as Amazon Cognito, AWS Lambda, Amazon DynamoDB, Amazon CloudWatch, and AWS Mobile Hub, so you can take advantage of the power of the AWS platform for security, monitoring, user authentication, business logic, storage and mobile app development.

- Click on **Create bot** button on right corner of the page as given below.



Machine Learning

Amazon Lex

Conversational AI for self-service bots

Amazon Lex is a service for building conversational interfaces into any application using voice and text, enabling you to add sophisticated, natural language chatbots to your applications.

Build a conversational expe

Get started by creating a self-service agent for your conversational Interac Response (IVR) system, website or ap

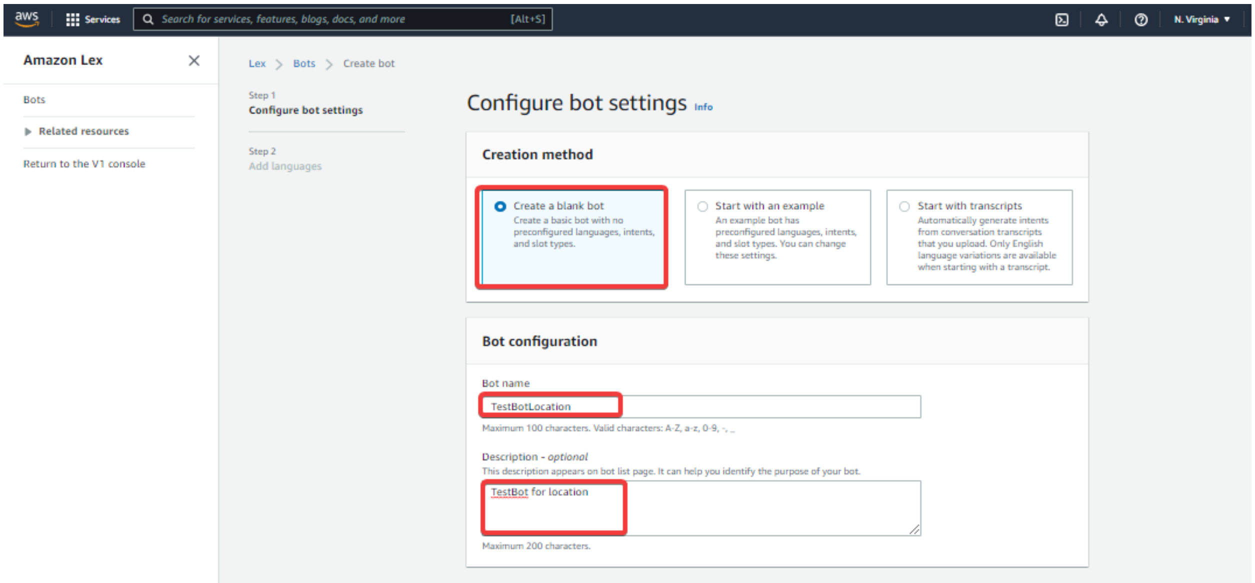
Pricing (US)

With Amazon Lex, you pay only for w is no upfront commitment or minimu Lex bots are designed for a request a interaction or a continuous streamin With the request and response intera input (voice or text) is processed as a In a streaming conversation, all user i multiple turns are processed in one s Pricing for Lex is based upon these tv models; request and response interac continuous streaming conversation. L

How it works

Step 1: Script conversation

- Amazon Lex configure bot setting page opens as mentioned below.
- Select **Create a blank bot** among three options on creation method.
- Next, Give Bot name and Description as you like such as TestBotLocation.



Configure bot settings

Creation method

- ● Create a blank bot
  Create a basic bot with no preconfigured languages, intents, and slot types.
- ○ Start with an example
  An example bot has preconfigured languages, intents, and slot types. You can change these settings.
- ○ Start with transcripts
  Automatically generate intents from conversation transcripts that you upload. Only English language variations are available when starting with a transcript.

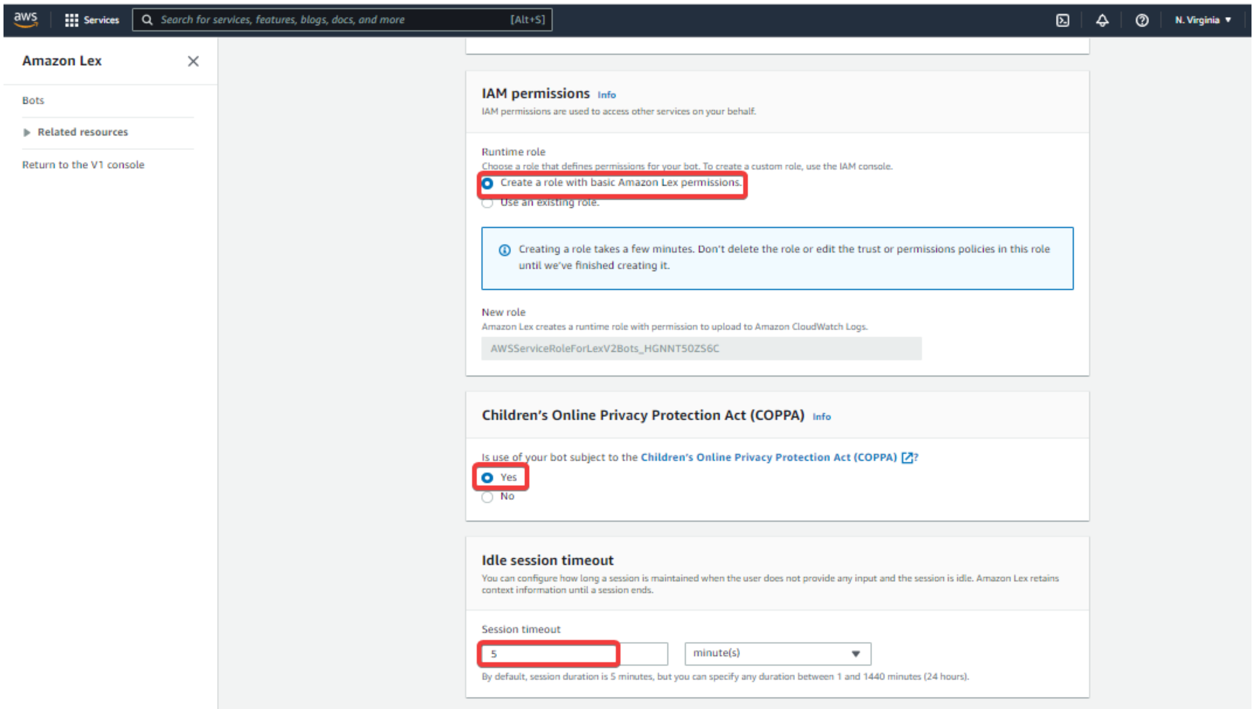
Bot configuration

Bot name
TestBotLocation
Maximum 100 characters. Valid characters: A-Z, a-z, 0-9, -, _

Description - *optional*
This description appears on bot list page. It can help you identify the purpose of your bot.
TestBot for location
Maximum 200 characters.

On the same page you will see IAM **Permissions,** choose **Create a role with basic Amazon Lex permissions on its** Runtime role**.**

- After that, Select Yes for COPPA.
- Input **session timeout like** 5 minutes.



IAM permissions

IAM permissions 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.

New role
Amazon Lex creates a runtime role with permission to upload to Amazon CloudWatch Logs.
AWSServiceRoleForLexV2Bots_HGNNT50ZS6C

Children's Online Privacy Protection Act (COPPA)

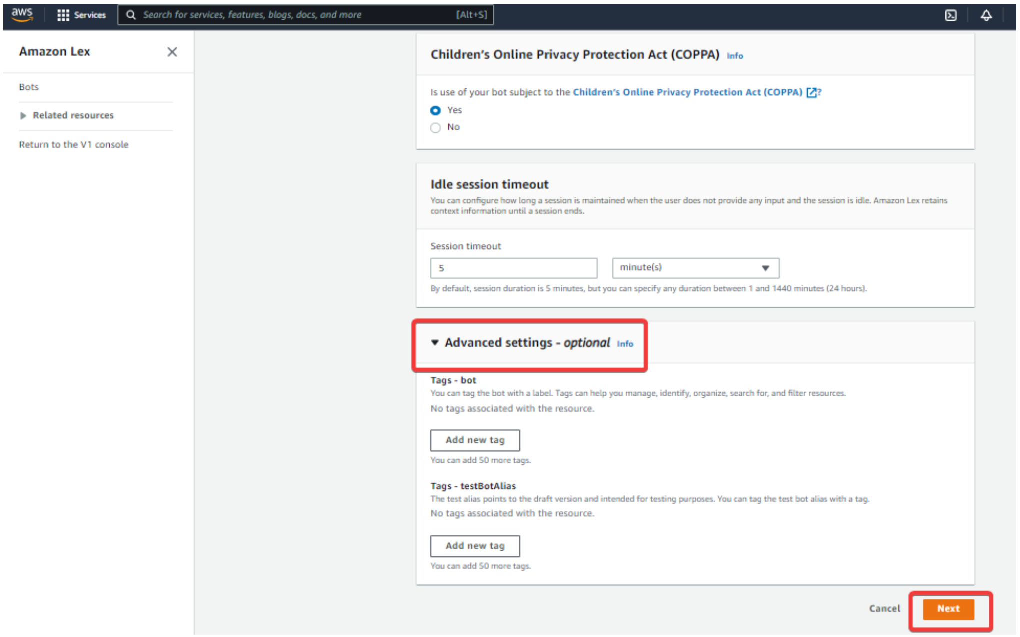
Is use of your bot subject to the Children's Online Privacy Protection Act (COPPA)?
● Yes
○ No

Idle session timeout

You can configure how long a session is maintained when the user does not provide any input and the session is idle. Amazon Lex retains context information until a session ends.

Session timeout
5 minute(s)
By default, session duration is 5 minutes, but you can specify any duration between 1 and 1440 minutes (24 hours).

- Keep **Advanced setting** default. Finally, Click **Next**.



Children's Online Privacy Protection Act (COPPA)

Is use of your bot subject to the Children's Online Privacy Protection Act (COPPA)?

● Yes

○ No

Idle session timeout

You can configure how long a session is maintained when the user does not provide any input and the session is idle. Amazon Lex retains context information until a session ends.

Session timeout: 5 minute(s)

By default, session duration is 5 minutes, but you can specify any duration between 1 and 1440 minutes (24 hours).

Advanced settings - *optional*

Tags - bot

You can tag the bot with a label. Tags can help you manage, identify, organize, search for, and filter resources.

No tags associated with the resource.

You can add 50 more tags.

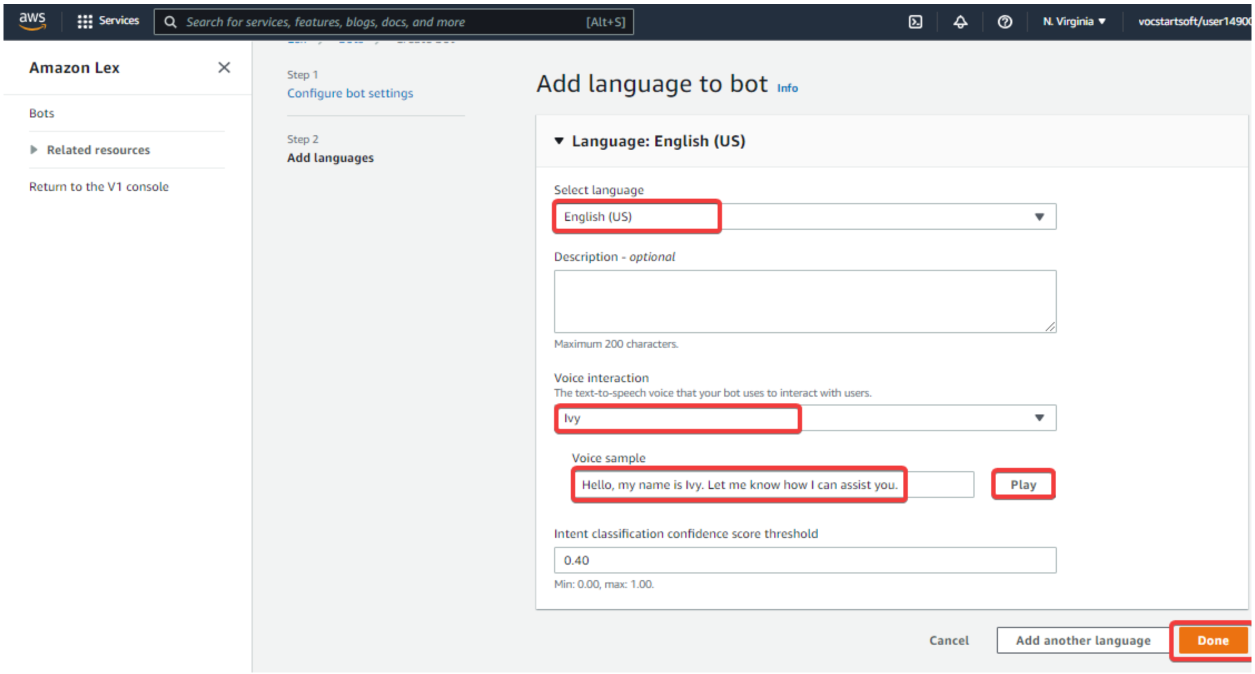
Tags - testBotAlias

The test alias points to the draft version and intended for testing purposes. You can tag the test bot alias with a tag.

No tags associated with the resource.

You can add 50 more tags.

- You can **select language** here we have chosen English (US). Also, you can choose synthesis voice on **Voice interaction.** Further, Input **Voice sample** and **Play**.
- Click on **Done**.



Step 1

Configure bot settings

Step 2

Add languages

Add language to bot

Language: English (US)

Select language: English (US)

Description - *optional*

Maximum 200 characters.

Voice interaction

The text-to-speech voice that your bot uses to interact with users.

Ivy

Voice sample

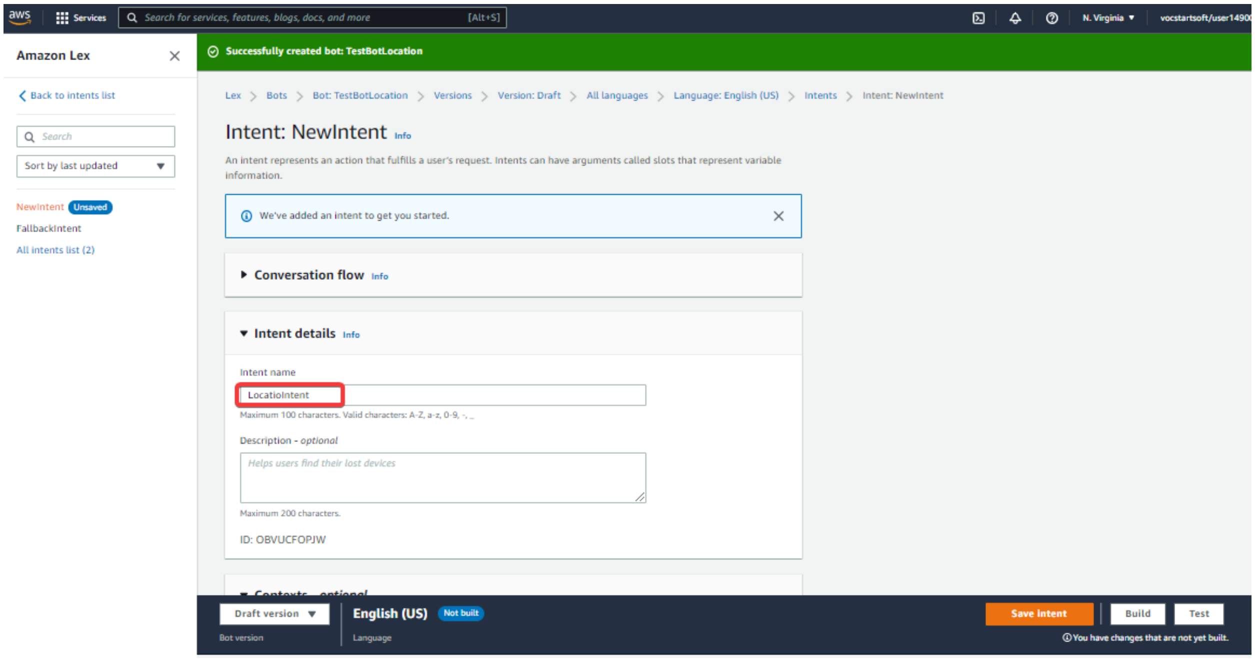
Hello, my name is Ivy. Let me know how I can assist you.

Intent classification confidence score threshold

0.40

Min: 0.00, max: 1.00.

Then, **Intent: NewIntent** page will open. Give intent name as **Locationintent.**



Successfully created bot: TestBotLocation

Intent: NewIntent

An intent represents an action that fulfills a user's request. Intents can have arguments called slots that represent variable information.

We've added an intent to get you started.

Intent name: LocatioIntent

Maximum 100 characters. Valid characters: A-Z, a-z, 0-9, -, _

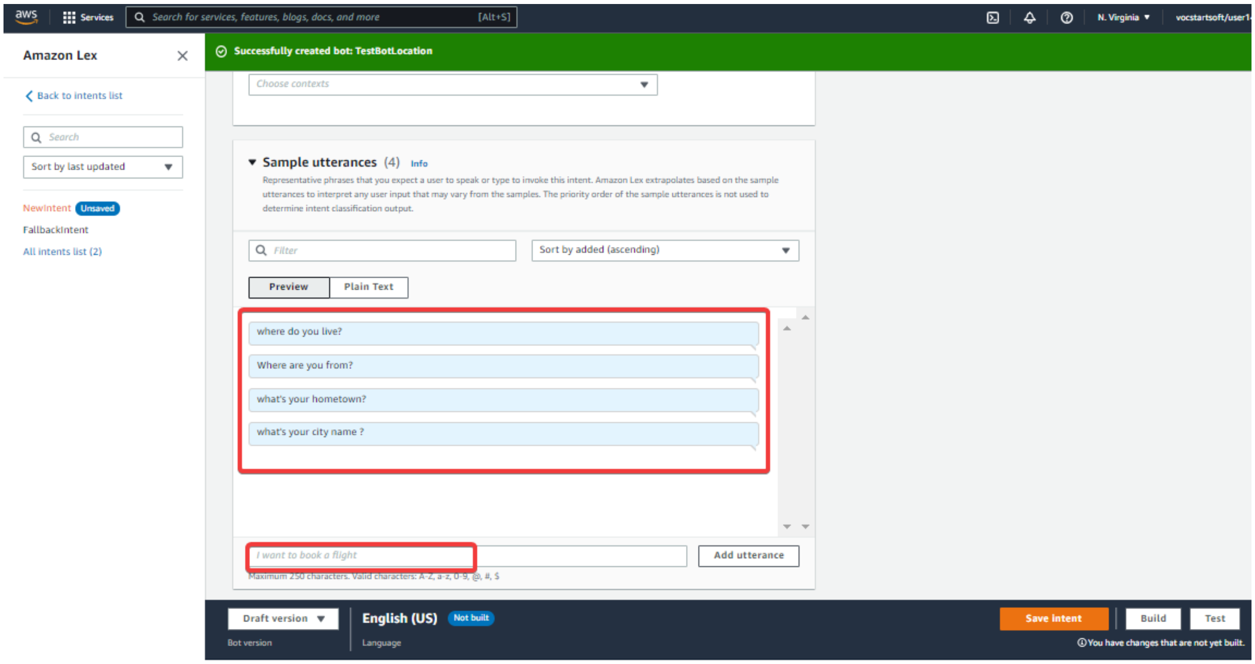
Description - *optional*: *Helps users find their lost devices*

Maximum 200 characters.

ID: OBVUCFOPJW

You have changes that are not yet built.

- **Add utterance** on the sample utterance. Here, we have asked multiple questions about the location.



Successfully created bot: TestBotLocation

Sample utterances (4)

Representative phrases that you expect a user to speak or type to invoke this intent. Amazon Lex extrapolates based on the sample utterances to interpret any user input that may vary from the samples. The priority order of the sample utterances is not used to determine intent classification output.

where do you live?

Where are you from?

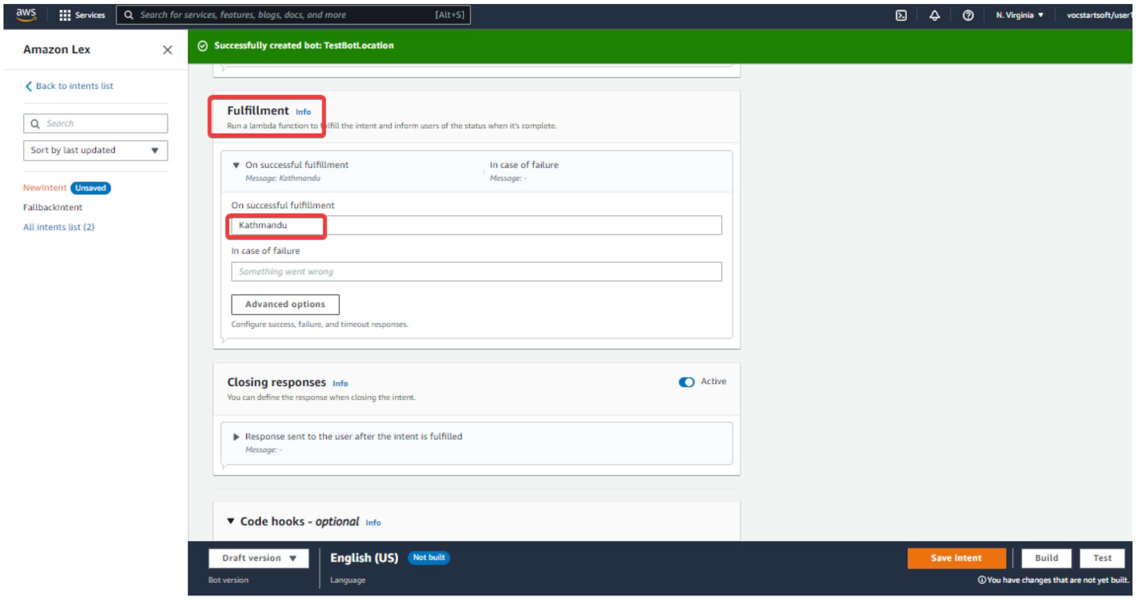
what's your hometown?

what's your city name ?

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

You have changes that are not yet built.

- On the **Fulfillment** option. Give answer the sample questions **on successful fulfilment.**
- Click **Save Intent.**



Successfully created bot: TestBotLocation

Fulfillment

Run a lambda function to fulfill the intent and inform users of the status when it's complete.

On successful fulfillment
Message: Kathmandu

In case of failure
Message: -

On successful fulfillment: Kathmandu

In case of failure

Configure success, failure, and timeout responses.

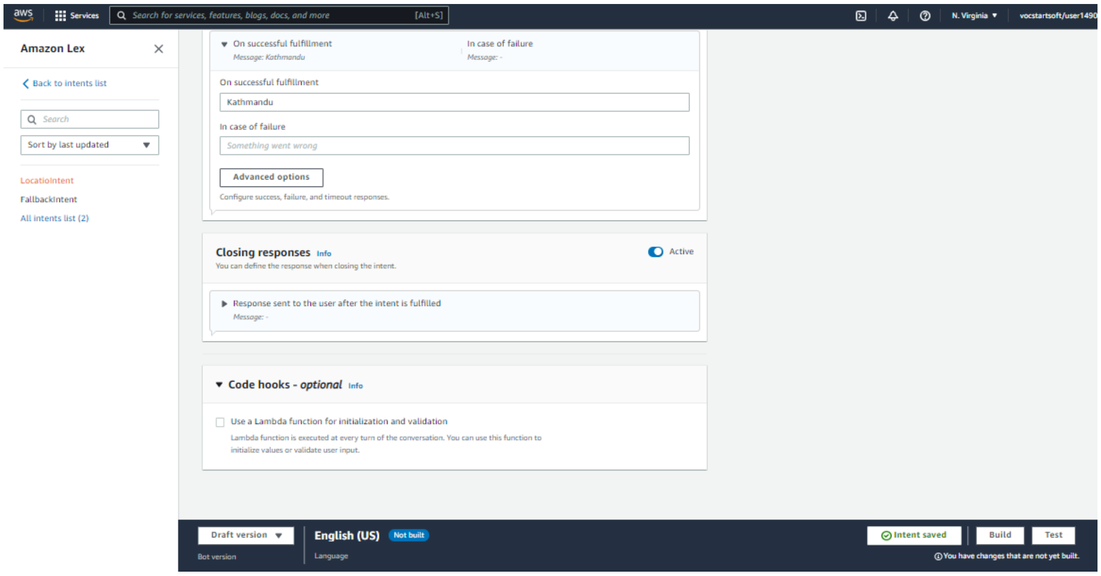
Closing responses

You can define the response when closing the intent.

Response sent to the user after the intent is fulfilled
Message: -

Code hooks - *optional*

You have changes that are not yet built.



On successful fulfillment
Message: Kathmandu

In case of failure
Message: -

On successful fulfillment: Kathmandu

In case of failure: Something went wrong

Configure success, failure, and timeout responses.

Closing responses

You can define the response when closing the intent.

Response sent to the user after the intent is fulfilled
Message: -

Code hooks - *optional*

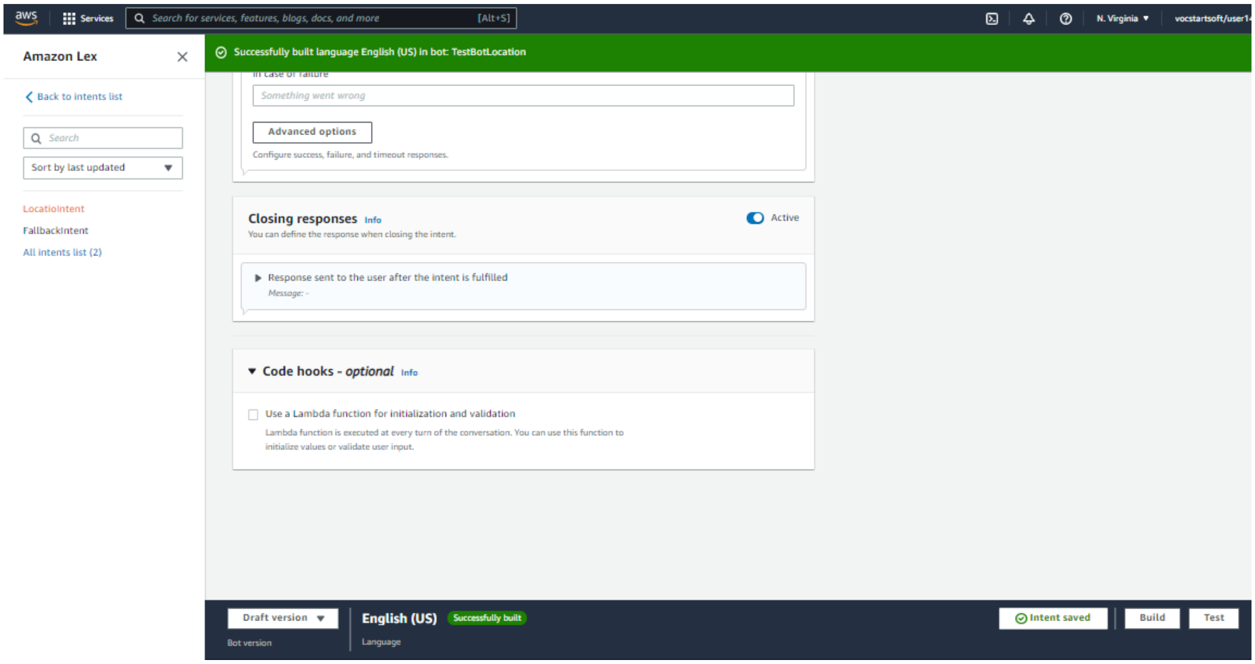
□ Use a Lambda function for initialization and validation

Lambda function is executed at every turn of the conversation. You can use this function to initialize values or validate user input.

English (US)

You have changes that are not yet built.

- Then, click on **Build.** It may take time. You will see **successfully built language** on top of the screen as given below.



Successfully built language English (US) in bot: TestBotLocation

In case of failure

Something went wrong

Configure success, failure, and timeout responses.

Closing responses

You can define the response when closing the intent.

Response sent to the user after the intent is fulfilled
Message: -

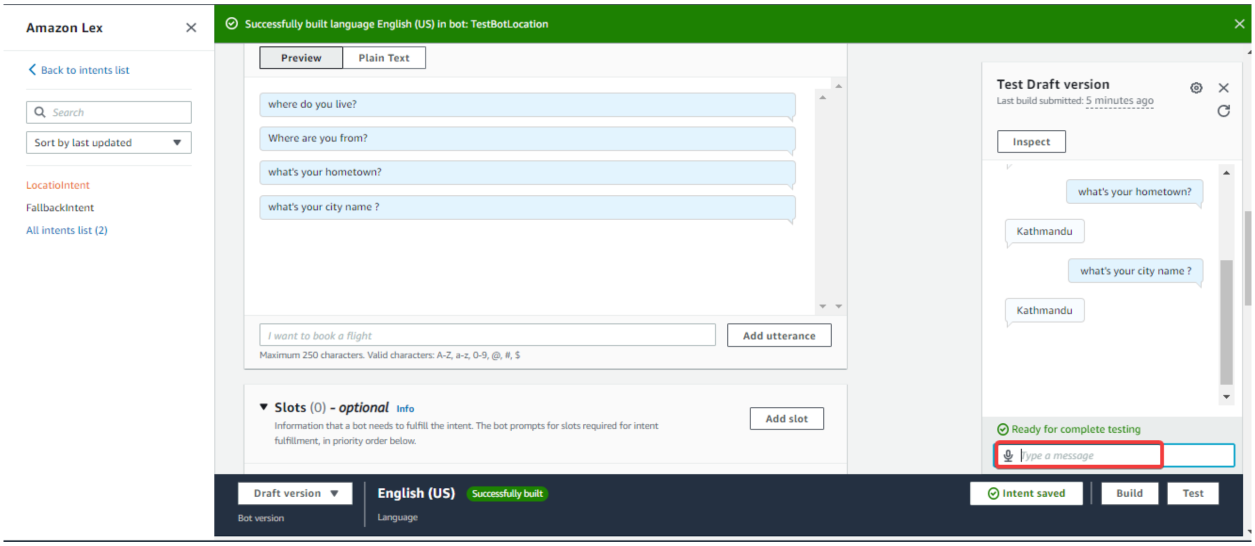
Code hooks - *optional*

□ Use a Lambda function for initialization and validation

Lambda function is executed at every turn of the conversation. You can use this function to initialize values or validate user input.

English (US)

- Click on **Test** to check our output. Now, you can ask the question we input and bot will response as mention below.


Successfully built language English (US) in bot: TestBotLocation

where do you live?

Where are you from?

what's your hometown?

what's your city name ?

I want to book a flight

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

Slots (0) - *optional*

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

Test Draft version

Last build submitted: 5 minutes ago

what's your hometown?

Kathmandu

what's your city name ?

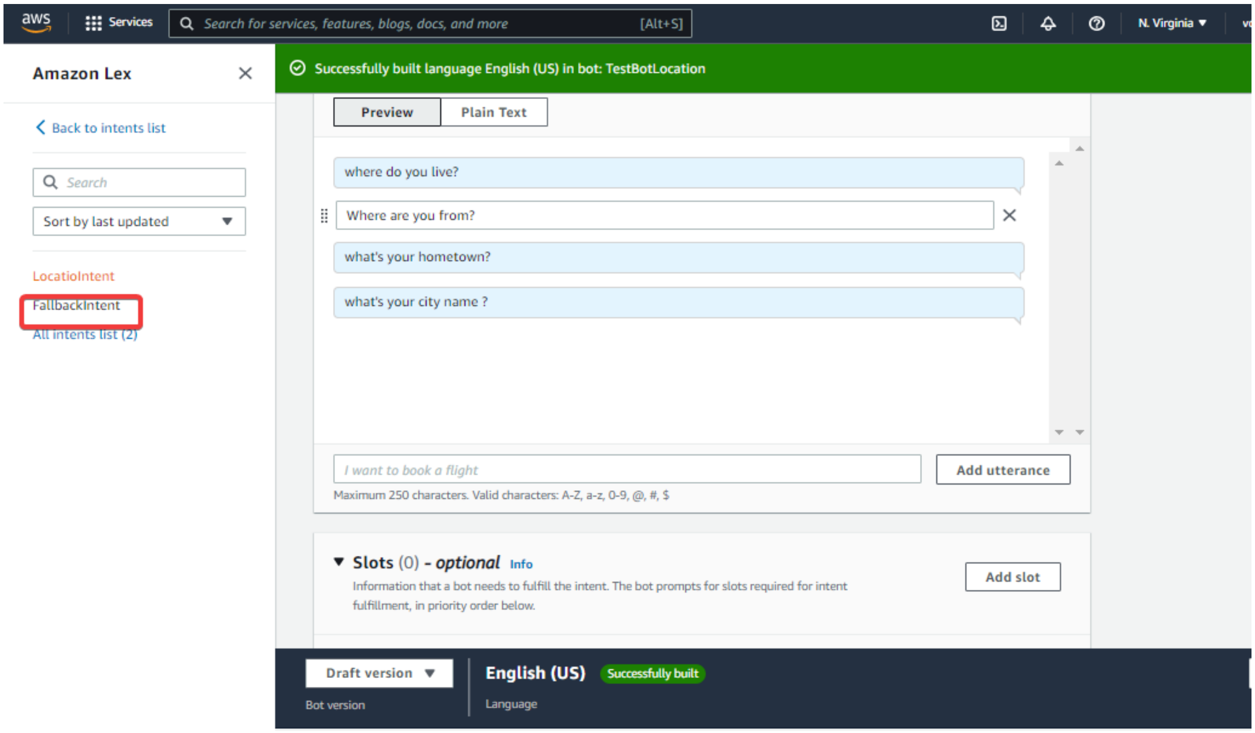
Kathmandu

Ready for complete testing

Type a message

English (US) Successfully built

For not given command, Click on Fallback Intent on right side of the same page.


Successfully built language English (US) in bot: TestBotLocation

where do you live?

Where are you from?

what's your hometown?

what's your city name ?

I want to book a flight

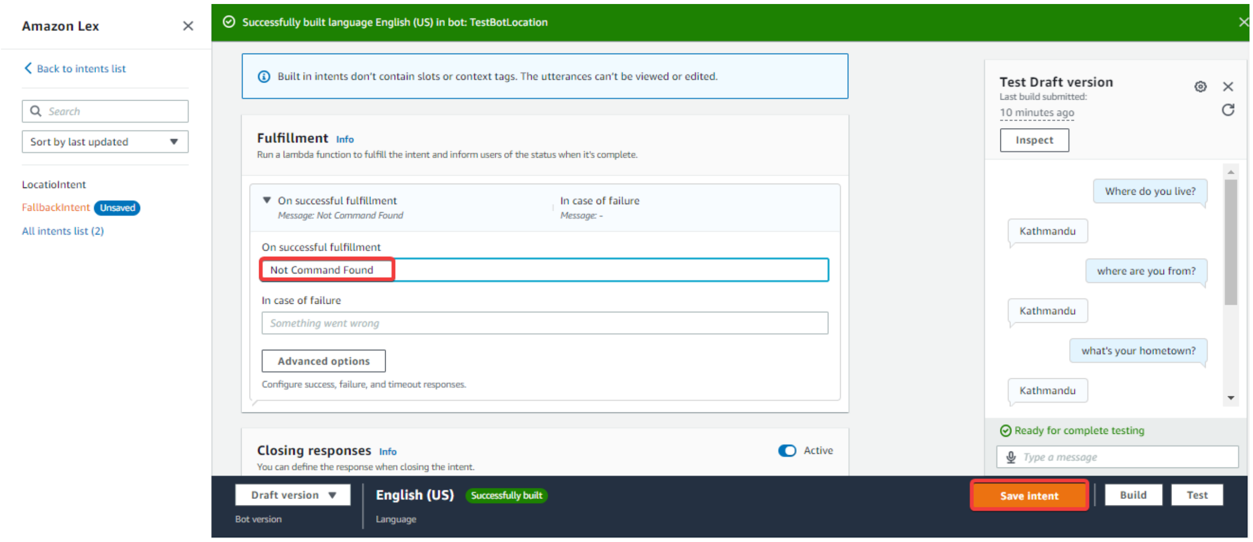
Maximum 250 characters. Valid characters: A-Z, a-z, 0-9, @, #, $

Slots (0) - *optional*

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

English (US) Successfully built

- Then, input not command found and click on **save Intent.**



Successfully built language English (US) in bot: TestBotLocation

Amazon Lex

Back to intents list

Search

Sort by last updated

LocatioIntent

FallbackIntent Unsaved

All intents list (2)

Built in intents don't contain slots or context tags. The utterances can't be viewed or edited.

Fulfillment Info

Run a lambda function to fulfill the intent and inform users of the status when it's complete.

On successful fulfillment
Message: Not Command Found

In case of failure
Message: -

On successful fulfillment

Not Command Found

In case of failure

Something went wrong

Advanced options

Configure success, failure, and timeout responses.

Closing responses Info — Active

You can define the response when closing the intent.

Test Draft version

Last build submitted: 10 minutes ago

Inspect

Where do you live?

Kathmandu

where are you from?

Kathmandu

what's your hometown?

Kathmandu

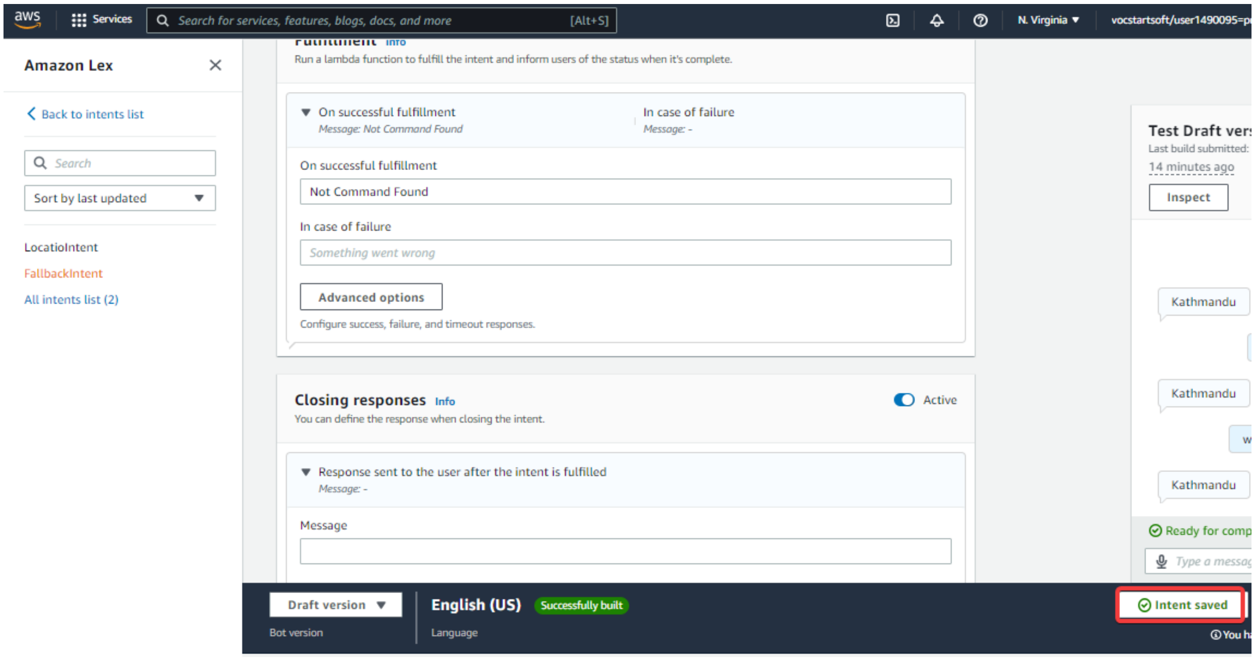
Ready for complete testing

Type a message

Draft version — Bot version

English (US) Successfully built — Language

Save intent | Build | Test



aws | Services | Search for services, features, blogs, docs, and more [Alt+S] | N. Virginia | vocstartsoft/user1490095=p

Amazon Lex

Back to intents list

Search

Sort by last updated

LocatioIntent

FallbackIntent

All intents list (2)

Fulfillment Info

Run a lambda function to fulfill the intent and inform users of the status when it's complete.

On successful fulfillment
Message: Not Command Found

In case of failure
Message: -

On successful fulfillment

Not Command Found

In case of failure

Something went wrong

Advanced options

Configure success, failure, and timeout responses.

Closing responses Info — Active

You can define the response when closing the intent.

Response sent to the user after the intent is fulfilled
Message: -

Message

Test Draft ver

Last build submitted: 14 minutes ago

Inspect

Kathmandu

Kathmandu

Kathmandu

Ready for comp

Type a messag

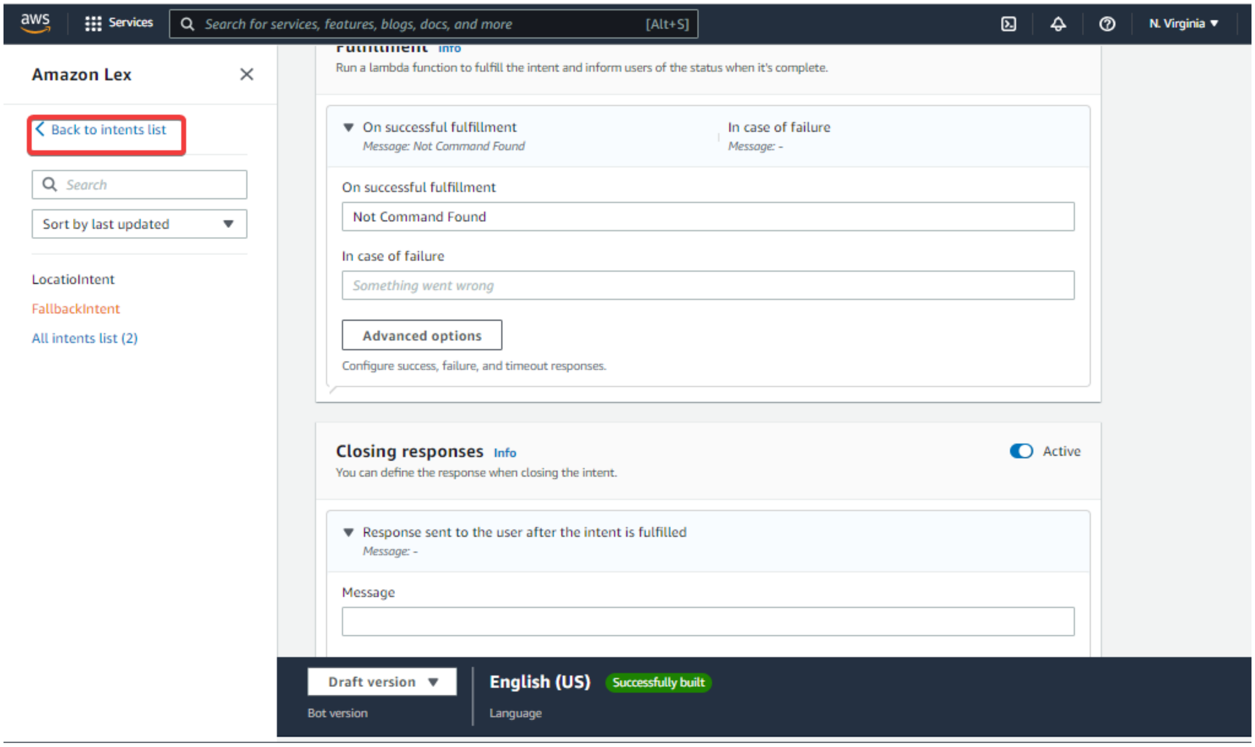
Draft version — Bot version

English (US) Successfully built — Language

Intent saved

You h

- Click on **Back to intents List.**



Fulfillment Info

Run a lambda function to fulfill the intent and inform users of the status when it's complete.

On successful fulfillment
Message: Not Command Found

In case of failure
Message: -

On successful fulfillment

Not Command Found

In case of failure

Something went wrong

Configure success, failure, and timeout responses.

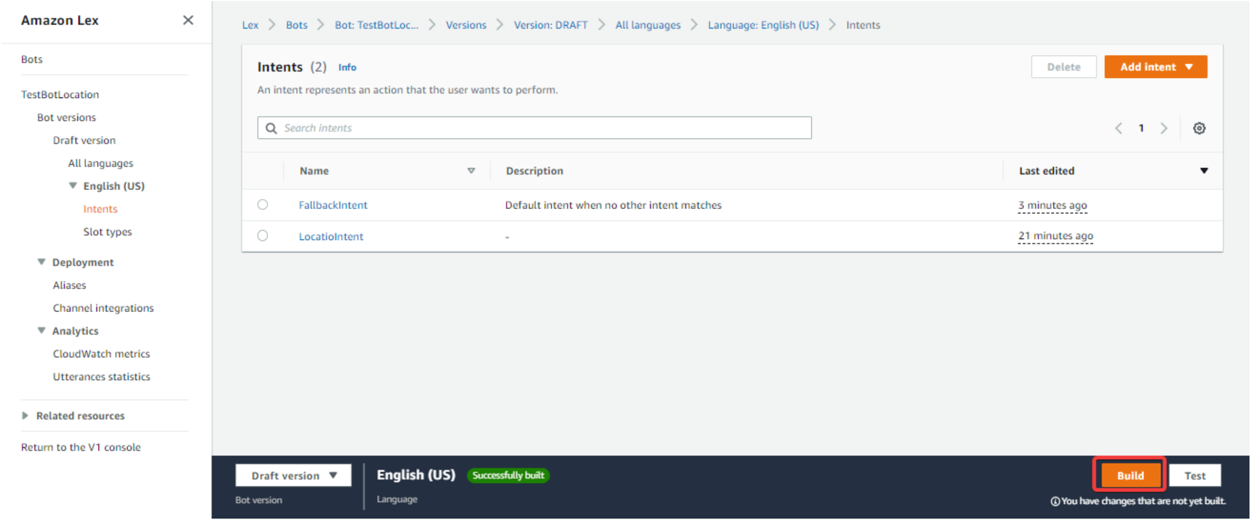
Closing responses Info — Active

You can define the response when closing the intent.

Response sent to the user after the intent is fulfilled
Message: -

Message

- Click on **Build.**



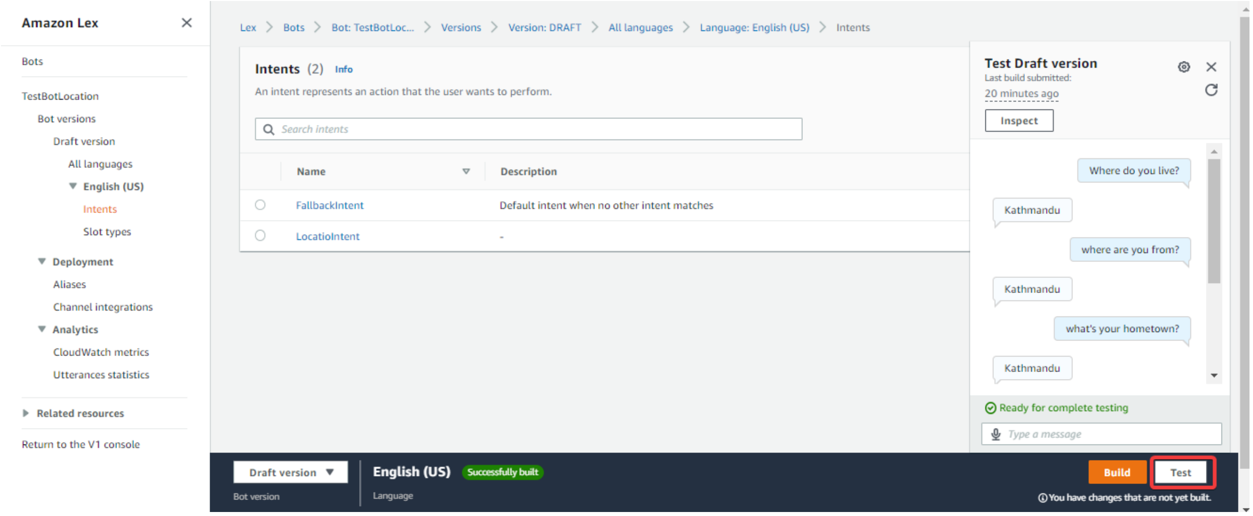
Intents (2) Info

An intent represents an action that the user wants to perform.

Name	Description	Last edited
○ FallbackIntent	Default intent when no other intent matches	3 minutes ago
○ LocatioIntent	-	21 minutes ago

ⓘ You have changes that are not yet built.

- Click on **Test.** A chat box will open.



Intents (2) Info

An intent represents an action that the user wants to perform.

Name	Description
FallbackIntent	Default intent when no other intent matches
LocatioIntent	-

Where do you live?

Kathmandu

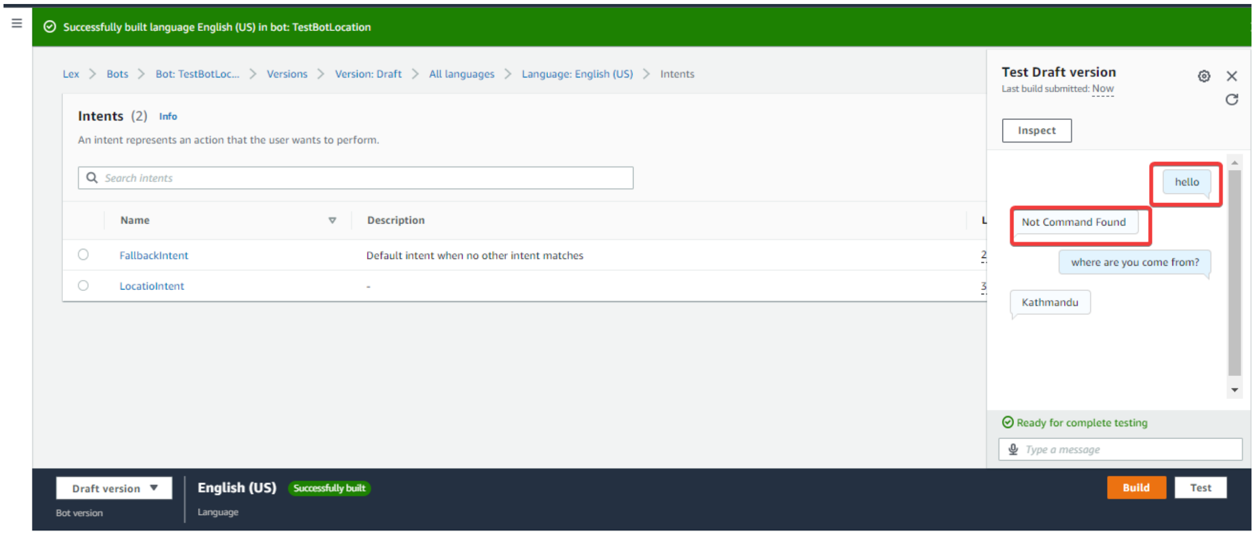
where are you from?

Kathmandu

what's your hometown?

Kathmandu

- We have input the command outside where chatbot has replied as **Not command Found**.


Successfully built language English (US) in bot: TestBotLocation
Lex > Bots > Bot: TestBotLoc... > Versions > Version: Draft > All languages > Language: English (US) > Intents
Search intents
Test Draft version
Last build submitted: Now
Inspect
Ready for complete testing
Type a message
Draft version
Bot version
English (US)
Successfully built
Language
Build
Test

Intents (2) Info

An intent represents an action that the user wants to perform.

Name	Description
FallbackIntent	Default intent when no other intent matches
LocatioIntent	-

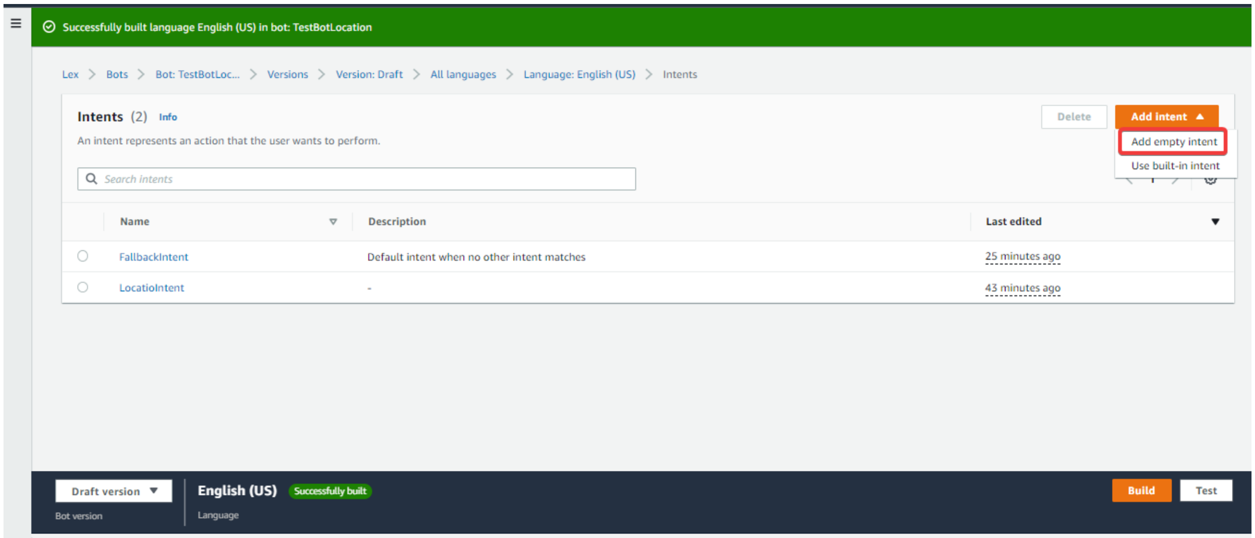
hello

Not Command Found

where are you come from?

Kathmandu

- Click on **Add intent** and choose **Add empty Intent**.



Successfully built language English (US) in bot: TestBotLocation

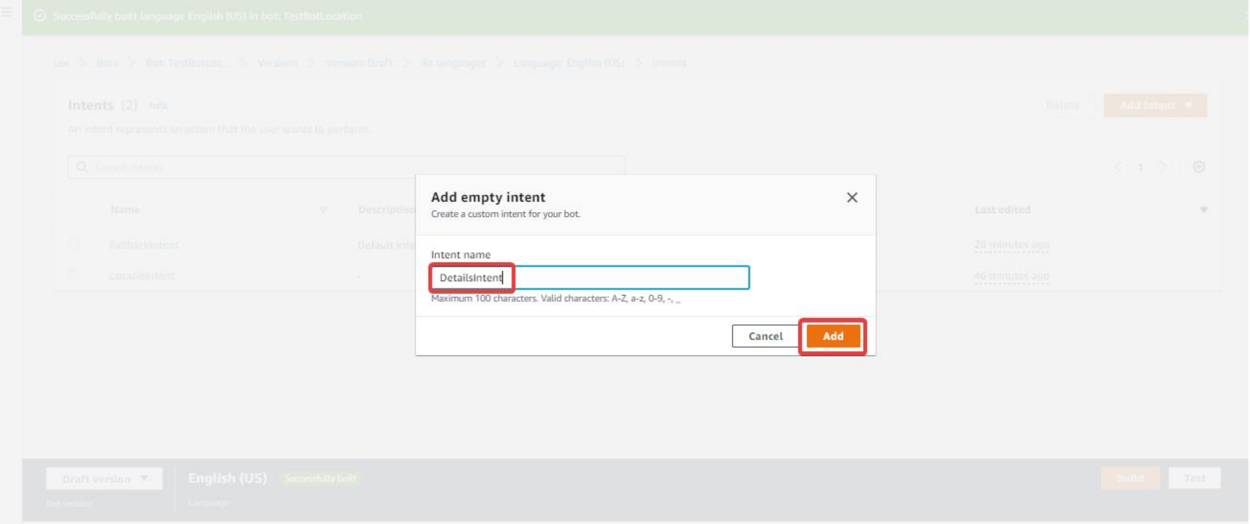
Intents (2) Info

An intent represents an action that the user wants to perform.

	Name	Description	Last edited
○	FallbackIntent	Default intent when no other intent matches	25 minutes ago
○	LocatioIntent	-	43 minutes ago

English (US) Successfully built

- Add **Intent name** and click on **Add.**



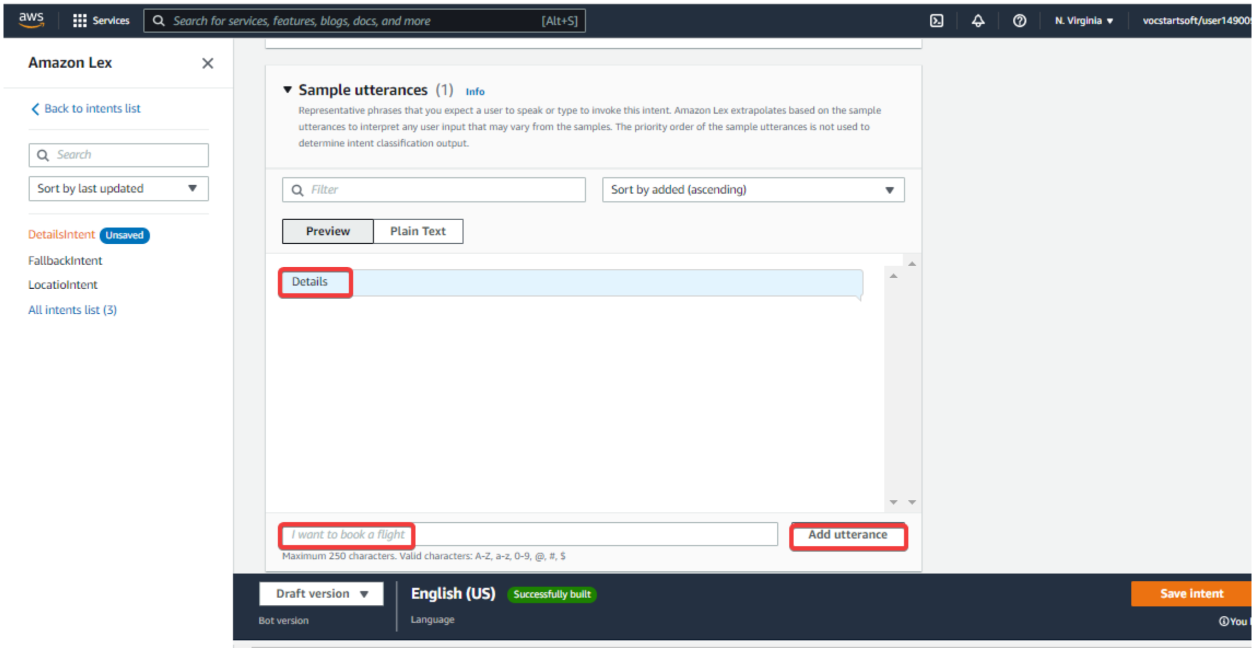
Add empty intent

Create a custom intent for your bot.

Intent name: DetailsIntent

Maximum 100 characters. Valid characters: A-Z, a-z, 0-9, -, _

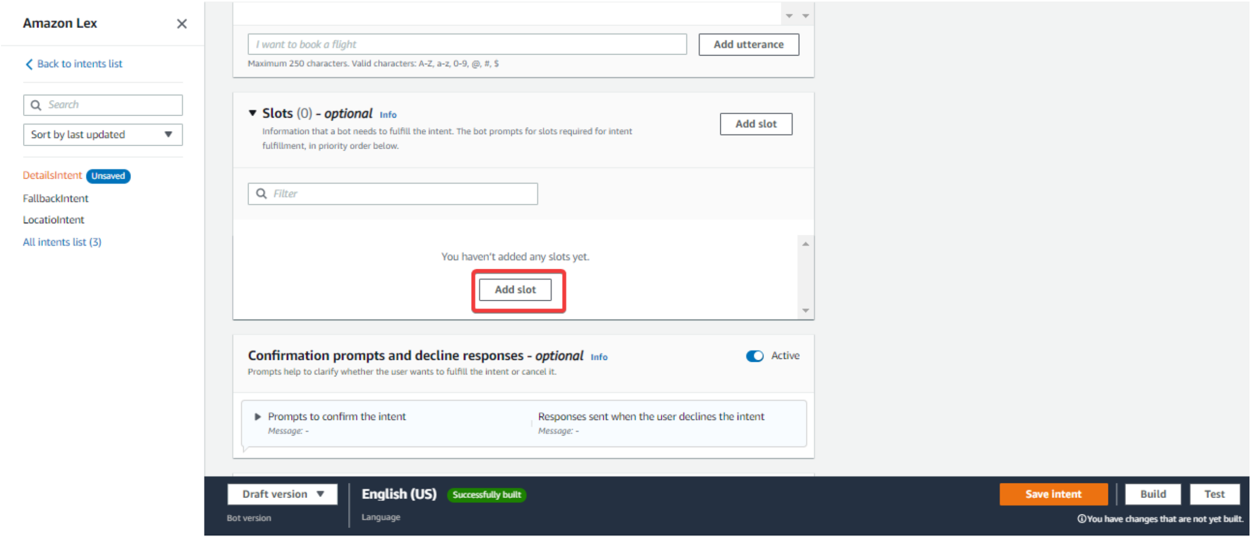
- Add **Utterance**



Representative phrases that you expect a user to speak or type to invoke this intent. Amazon Lex extrapolates based on the sample utterances to interpret any user input that may vary from the samples. The priority order of the sample utterances is not used to determine intent classification output.

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

- Click on **Add Slot**.



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

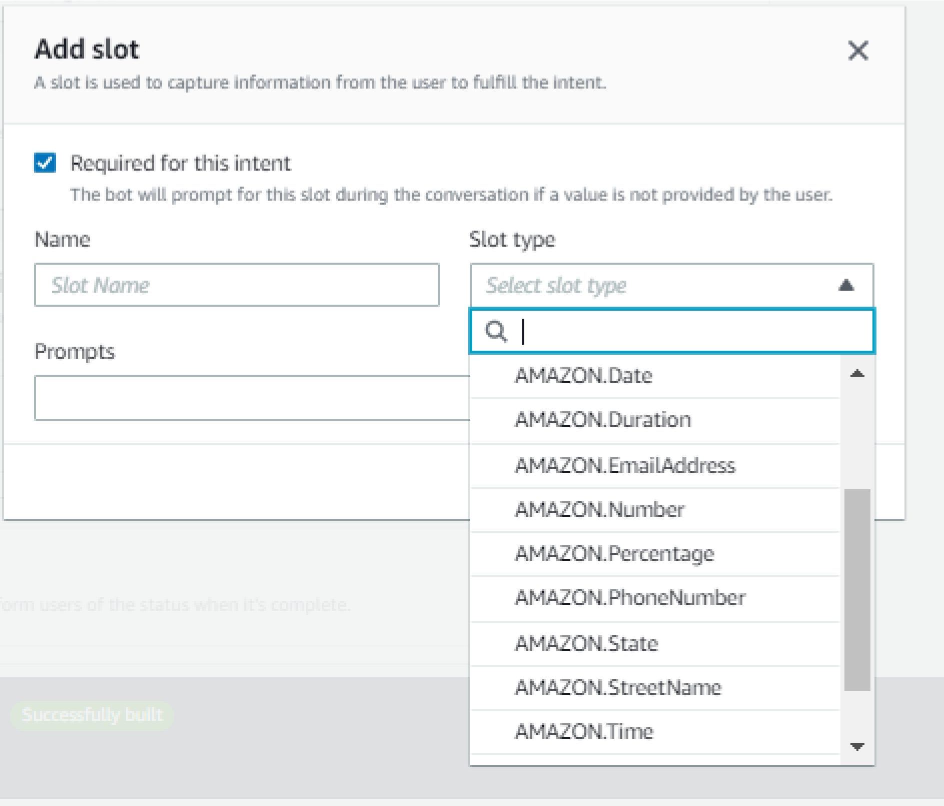
Information that a bot needs to fulfill the intent. The bot prompts for slots required for intent fulfillment, in priority order below.

You haven't added any slots yet.

Prompts help to clarify whether the user wants to fulfill the intent or cancel it.

You have changes that are not yet built.

- You can see blank Slot Name, Prompts and list of slot type.



Add slot

A slot is used to capture information from the user to fulfill the intent.

☑ Required for this intent

The bot will prompt for this slot during the conversation if a value is not provided by the user.

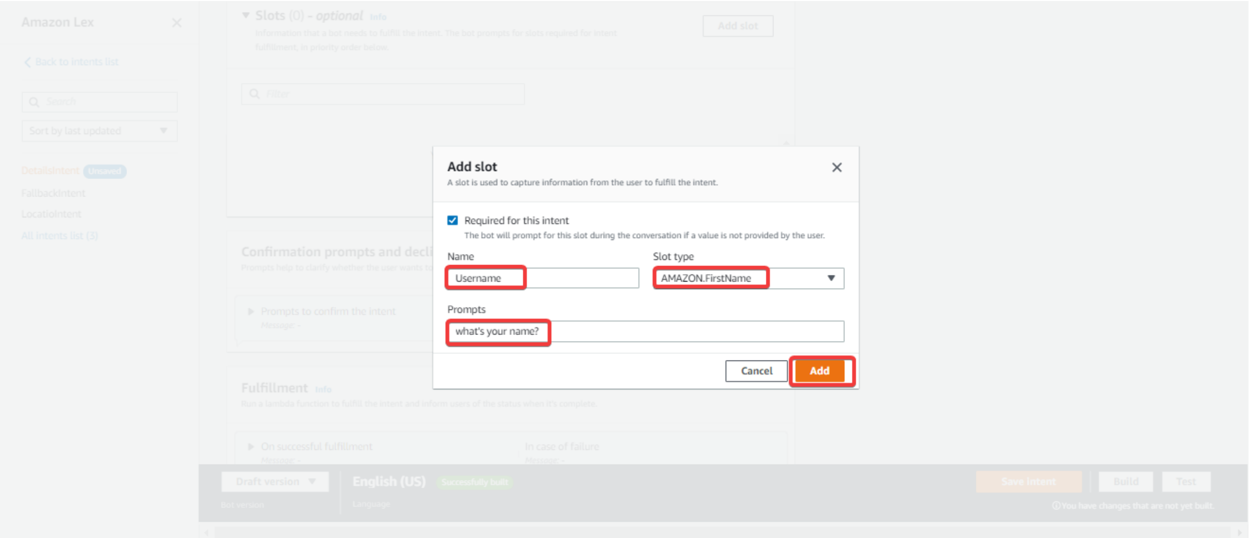
Name: Slot Name

Slot type: Select slot type

Prompts

- AMAZON.Date
- AMAZON.Duration
- AMAZON.EmailAddress
- AMAZON.Number
- AMAZON.Percentage
- AMAZON.PhoneNumber
- AMAZON.State
- AMAZON.StreetName
- AMAZON.Time

- We will create slot Name as Username. Once you fillup, click on **Add** button.



Add slot

A slot is used to capture information from the user to fulfill the intent.

☑ Required for this intent

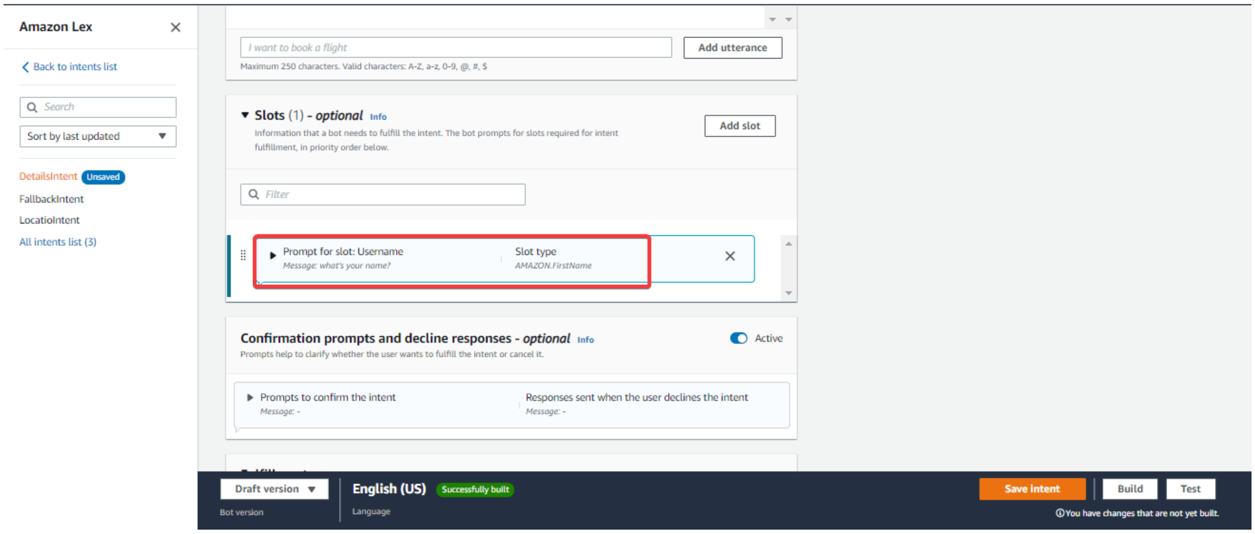
The bot will prompt for this slot during the conversation if a value is not provided by the user.

Name: Username

Slot type: AMAZON.FirstName

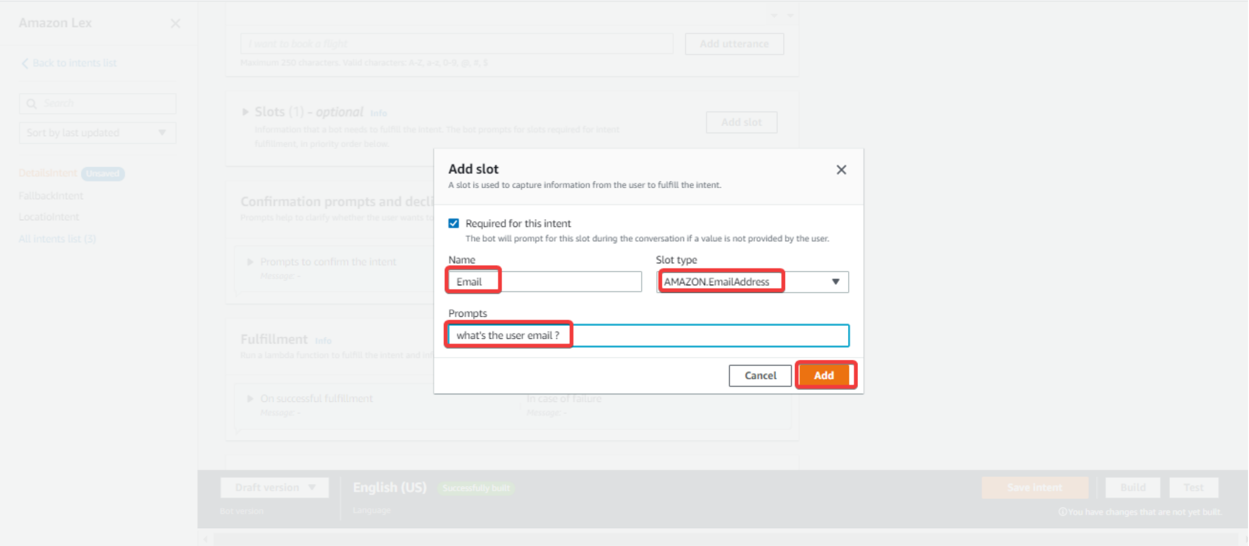
Prompts: what's your name?

- One slot has been created as given below.


Amazon Lex
Back to intents list
Search
Sort by last updated
DetailsIntent Unsaved
FallbackIntent
LocationIntent
All intents list (3)
I want to book a flight
Add utterance
Maximum 250 characters. Valid characters: A-Z, a-z, 0-9, @, #, $
Slots (1) - 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
Filter
Confirmation prompts and decline responses - optional Info
Prompts help to clarify whether the user wants to fulfill the intent or cancel it.
Active
Prompts to confirm the intent
Message: -
Responses sent when the user declines the intent
Message: -
Draft version
Bot version
English (US) Successfully built
Language
Save intent
Build
Test
You have changes that are not yet built.

Prompt for slot: Username
Message: what's your name?
Slot type
AMAZON.FirstName

- Similarly, we will create other slots such as email address.



Add slot

A slot is used to capture information from the user to fulfill the intent.

☑ Required for this intent

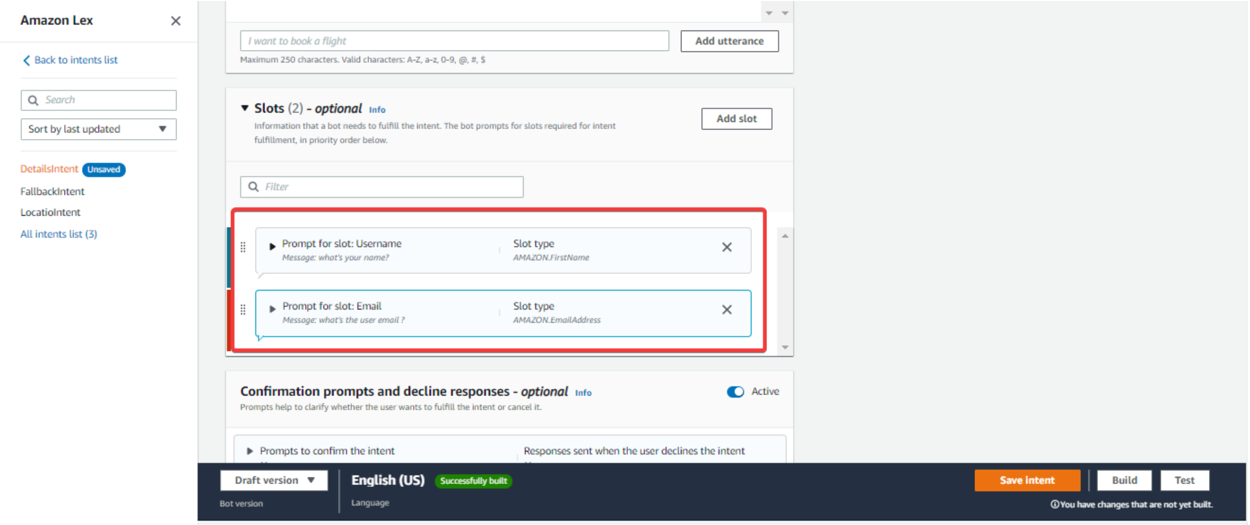
The bot will prompt for this slot during the conversation if a value is not provided by the user.

Name: Email

Slot type: AMAZON.EmailAddress

Prompts: what's the user email ?

- Now you can see two slots.



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

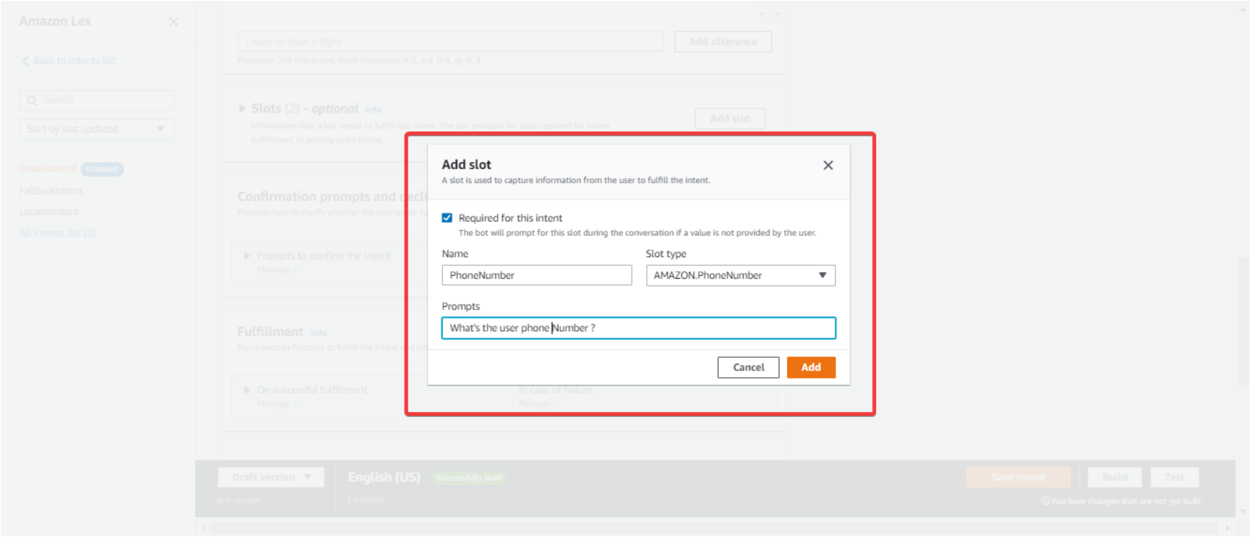
Information that a bot needs to fulfill the intent. The bot prompts for slots required for intent fulfillment, in priority order below.

Prompt for slot: Username
Message: what's your name?
Slot type: AMAZON.FirstName

Prompt for slot: Email
Message: what's the user email ?
Slot type: AMAZON.EmailAddress

Prompts help to clarify whether the user wants to fulfill the intent or cancel it.

- Lastly, we create slot in **Phone Number**.



A slot is used to capture information from the user to fulfill the intent.

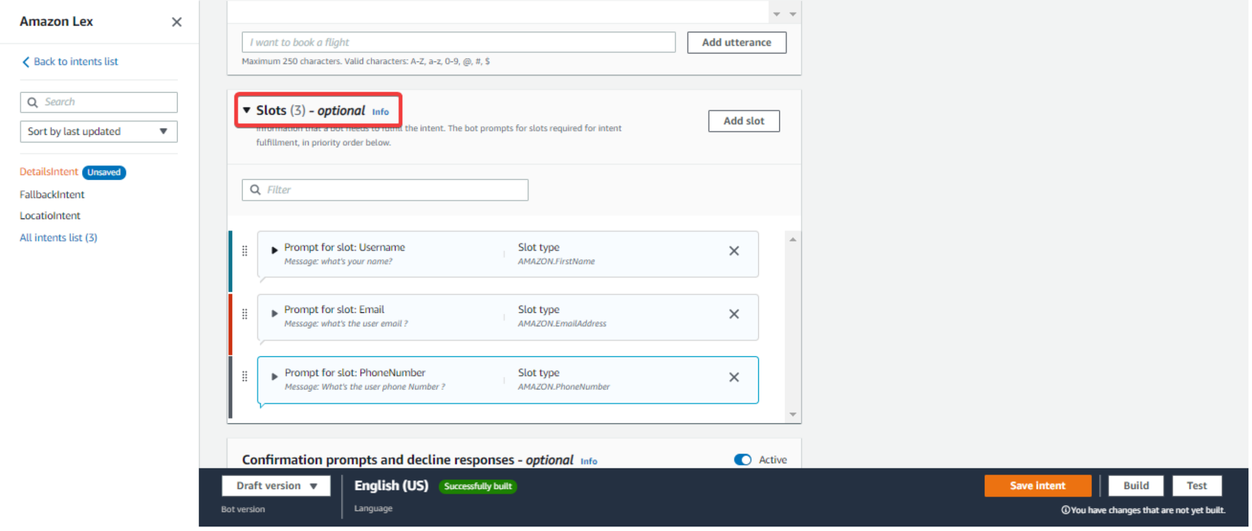
☑ Required for this intent
The bot will prompt for this slot during the conversation if a value is not provided by the user.

Name: PhoneNumber

Slot type: AMAZON.PhoneNumber

Prompts: What's the user phone Number ?

- You can see 3 slots.



I want to book a flight

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

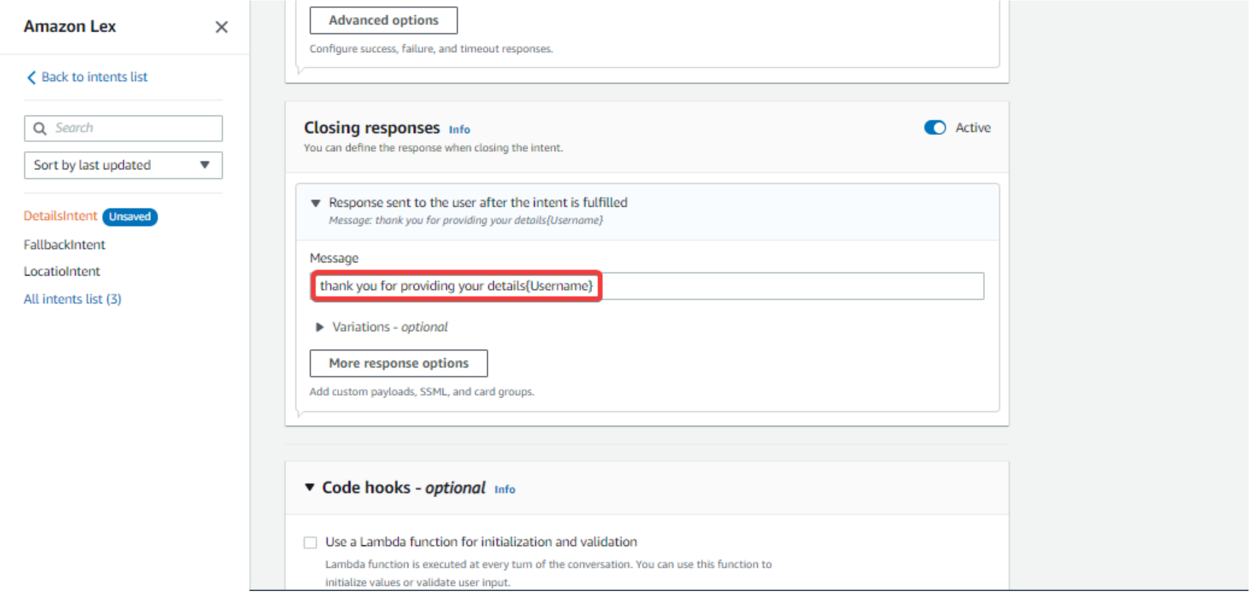
the intent. The bot prompts for slots required for intent fulfillment, in priority order below.

Prompt for slot: Username — Message: what's your name? — Slot type: AMAZON.FirstName

Prompt for slot: Email — Message: what's the user email ? — Slot type: AMAZON.EmailAddress

Prompt for slot: PhoneNumber — Message: What's the user phone Number ? — Slot type: AMAZON.PhoneNumber

- Finally, we will type message for **closing responses**. We type our message where we placed variable as Username.



Configure success, failure, and timeout responses.

You can define the response when closing the intent.

Response sent to the user after the intent is fulfilled

Message: thank you for providing your details{Username}

Message

thank you for providing your details{Username}

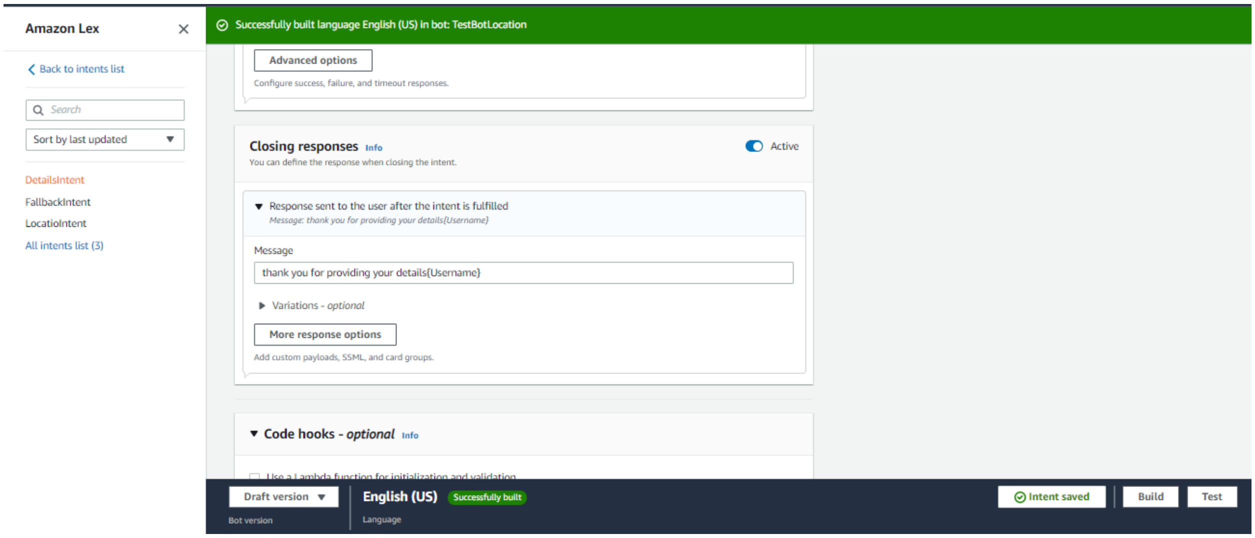
Add custom payloads, SSML, and card groups.

□ Use a Lambda function for initialization and validation

Lambda function is executed at every turn of the conversation. You can use this function to initialize values or validate user input.

Then click on **Save intent**.

- Click on **Build.** And you will see successfully built top and buttom of the screen.



Successfully built language English (US) in bot: TestBotLocation

Configure success, failure, and timeout responses.

Closing responses Info — Active

You can define the response when closing the intent.

Response sent to the user after the intent is fulfilled

Message: thank you for providing your details{Username}

Message: thank you for providing your details{Username}

Variations - *optional*

Add custom payloads, SSML, and card groups.

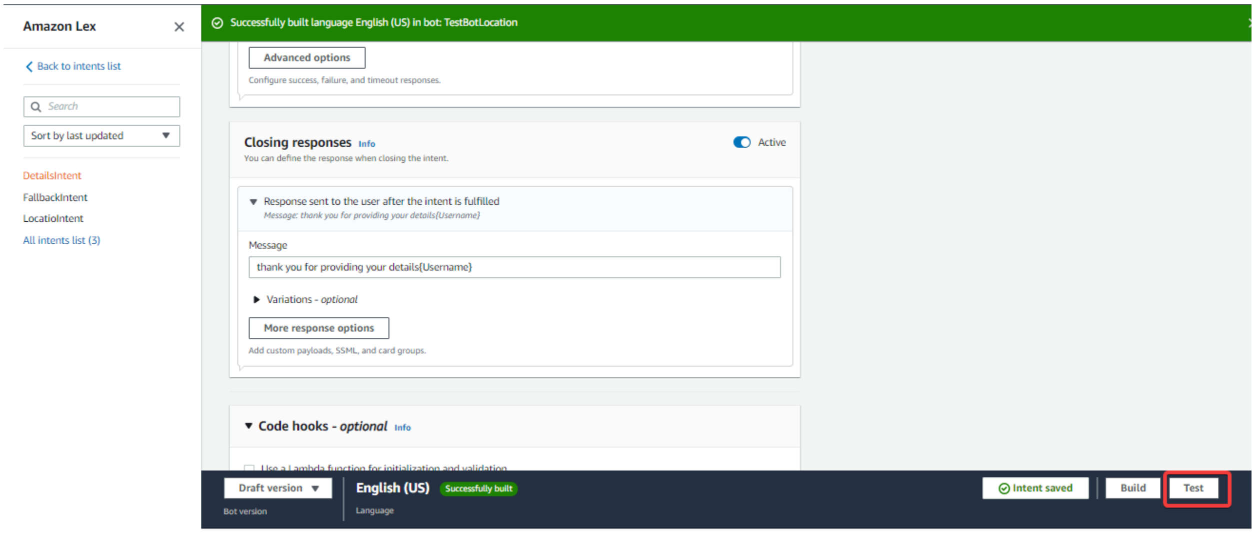
Code hooks - *optional* Info

Use a Lambda function for initialization and validation

Draft version — Bot version

English (US) Successfully built — Language

Lastly, Click on **Test.**



Successfully built language English (US) in bot: TestBotLocation

Configure success, failure, and timeout responses.

Closing responses Info — Active

You can define the response when closing the intent.

Response sent to the user after the intent is fulfilled

Message: thank you for providing your details{Username}

Message: thank you for providing your details{Username}

Variations - *optional*

Add custom payloads, SSML, and card groups.

Code hooks - *optional* Info

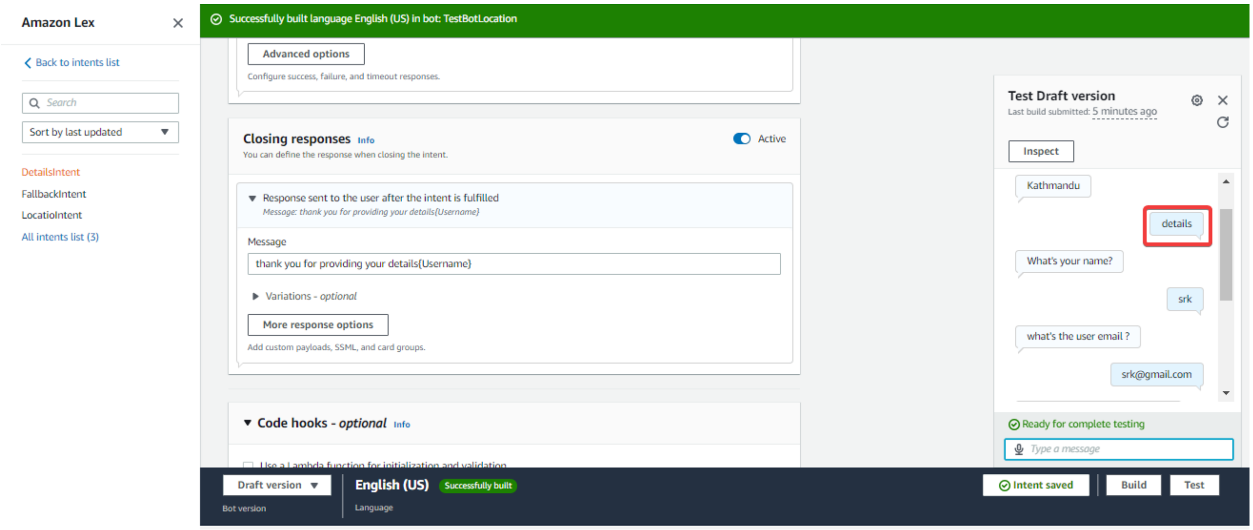
Use a Lambda function for initialization and validation

Draft version — Bot version

English (US) Successfully built — Language

Then a dialogue box will appear with chatbot as given below.

- Input **details**. Then random enquires will generate and user can response the questions.



Successfully built language English (US) in bot: TestBotLocation

Configure success, failure, and timeout responses.

Closing responses

You can define the response when closing the intent.

▼ Response sent to the user after the intent is fulfilled

Message: thank you for providing your details{Username}

Message: thank you for providing your details{Username}

▶ Variations - *optional*

Add custom payloads, SSML, and card groups.

▼ Code hooks - *optional*

□ Use a Lambda function for initialization and validation

English (US) Successfully built

Test Draft version

Last build submitted: 5 minutes ago

Kathmandu

details

What's your name?

srk

what's the user email ?

srk@gmail.com

Ready for complete testing