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Exercise 1.1 Creating a Simple Bot with Lex

Rick's preamble

What we are ultimately building

Hi there.

So the goal of the exercises are to create a web based application that can be used to find the answer to the most pressing question in the world.

"Is it too cold for our cats to go outside?"

You all have cats right?

...yeh y'all have cats 😀

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We will start off building a text based data driven web application, and then enhance it by turning it into a voice based data driven application using Amazon LEX.

Although we are going to focus on building the (non-LEX) text based application first, I would still like to introduce you to Amazon Lex early on for two reasons.

1) Lex is very easy to work with, and super easy to build, so you get to create something cool straight away, instead of waiting until week 3 for your first win.

2) The concepts covered in this first exercise (Creating a simple bot with LEX) will prepare you for enhancing your application later on. This way you won't have to context switch back to LEX fundamentals when we are full steam ahead in week 4. As you will already have the basics under your belt.

Let's jump straight into Exercise 1.1 and create a simple chatbot.

Exercise 1.1: Creating a simple BOT with LEX

The goal of this first lab is to create a simple chatbot in the LEX console that can gather basic information from a user, which we call "eliciting slots".

When we ask the chatbot for the weather it will not have enough information to provide an answer. It will need to further establish the city your cat lives in, and then confirm with you that the question you asked was understood correctly.

For example:

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	What city?
Chicago	
	So you want to know if your cat can go outside today in Chicago, is that correct?
Yes	
	Fulfilment success - [i.e. end conversation]

And that's it...for now at least!

We use this chatbot later in week 4 where we will get to enhance it significantly making it much smarter, so it provides the weather for the respective city.

Once built, we will integrate it with our web application that you will build next.

For now, let's just build that basic chatbot, and get the fundamentals out of the way.

Please follow all these steps below one by one in order very carefully.

It's very easy to accidentally miss a step, and it then not work as expected.

1. Steps for creating a Lex Bot

- Sign in to the AWS Management Console and in the **Find Services** search box type lex and choose **Amazon Lex**.
- Make sure you are in the **N. Virginia** region at the top right.

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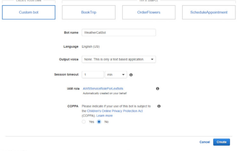
- For **Output voice**, choose **Mike**, **Joey** or **Salli** as the voice.
- Change the **Session timeout** to **1** minute.
- Leave the IAM role as **AmazonLexRuntimeSessionBotRole**.
- For **COPPA** choose **No**.



- Click **Create**.

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The idea is that over time, and the more it is used, it can figure out what you are trying to imply. Or what you mean when you talk to it. Pretty cool right?

Even if you ask it a question that is not in the sample questions you supply, it is usually smart enough to figure out your intent anyway.

So lets say you want to know if it is too cold for you cat, there are a gazillion edge case ways that you might phase that conversationally right?

"Hey silly bot, cool enough for my cat yet?"

"Cat bot, I bet it is too hot for my cat in Arizona, isn't it?"

"Can my cat go outside yet? He's really bored..oh yeah we're in Texas."

...the list goes on.

They call these common question samples "utterances".

We obviously can't type every conceivable utterance, and we don't need to. LEX is pretty smart, and gets smarter over time.

We just need to provide a good sample of commonly phased questions that you think users would say. These are related to the INTENT of finding out if your cat should go out or not. And let LEX over time, figure out all the fancy humanized edge case intents.

Let's do that now.

2. Steps for creating an Intent.

- Click the **Create Intent** button.
- On the Add intent soon-ish click **Create intent**.

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- Sample utterances

NOTE: There is a symbol at the far right of the text entry area. Either press that after adding text or press **Enter**, before entering the next utterance.

Enter these five utterances **one at a time**, in order:

```
can my cat go outside
can i take my cat out on a walk
can i let my cat out in city_str
is it too cold for my cat in city_str
will my cat stay dry in city_str
```

We are not going to talk about synonyms in the course, but I recommend you check that concept out to make your bot super human. https://aws.amazon.com/blogs/machine-learning/use-synonyms-and-slot-value-validation-in-your-amazon-lex-chatbots/

Did you notice the `(city_str)`? Think of this as a variable, as the user can say any city they want.

This maps to what we call a **SLOT**.

The advantage in putting this in our utterances, is that if a slot is used in the initial user utterance the LEX bot has all it needs. It no longer needs to elicit that slot and ask the user what city, because it has just been volunteered :)

Are you ready to create the slot that we used as a placeholder as `city_str` in some of our utterances?

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3. Steps for creating a Slot.

- Scroll down to the slots sections and expand it using the drop down arrow.
- Slots

- Type `city_str` under **Name**.
- For **Slot type** start typing in `AMAZON.U` and choose `AMAZON.US_CITY`.
- Type `What city?` under **Prompt** and click or hit **Enter**.
- `(city_str)` will now be colorized in the **Sample utterances** drop down.
- Sample utterances

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- Expand **Confirmation prompt**.
  - Check **Confirmation prompt**.
  - Under **Confirm** type in the following:

```
So you want to know if your cat can go out today in {city_str}?
```

- Under Cancel (if the user says "no", ie, that's wrong) type in:

```
Sorry, can you please repeat your initial question?
```

- Expand **Fulfillment** and verify **Return parameters to client** is selected.
- Leave Response as it is.
- Click **Save Intent** at the bottom.
- Click **Build** at the top right.
- At the *Build your bot* pop-up click **Build**.
- This can take a few minutes. *Usually less than 30 seconds, if your lucky.*

Believe it or not, that's it!

Let's test it in the helpful text console.

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- Try other Intent utterances so you can see how LEX responds to you in different scenarios.

User 🙎	Chatbot 🤖
Will my cat stay dry in Seattle?	*(city_str value is likely not :)*
	So you want to know if your cat can go out today in Seattle?
Yes	
	Intent CatWeather is ReadyForFulfillment: city_str:Seattle
Can I let my cat out in Arizona?	
	So you want to know if your cat can go out today in Arizona?
Yes	
	Intent CatWeather is ReadyForFulfillment: city:Arizona
Is it warm enough for my cat?	
	Which city?
Denver	
	So you want to know if your cat can go out today in Denver?
Sure	
	Intent CatWeather is ReadyForFulfillment: city:Denver
Is it too cold for my cat?	
	Which city?
	Intent CatWeather is ReadyForFulfillment: city:Las Vegas

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Awesome job!

Let's look at our course todo checklist.

Exercise goal checklist

1. Create a simple chatbot using the lex console ~~tick~~
2. Upload our website to S3.
3. Create a content delivery network and lock down S3.
4. Build an API gateway mock with CORS.
5. Build a Lambda mock, and push logs to CloudWatch.
6. Create and seed a database with weather data.
7. Enhance the lambda, so it can query the database.
8. Play with your new text based data driven application.
9. Create a LEX proxy using Lambda.
10. Enhance API gateway to use the LEX proxy.
11. Play with your new voice web application.

Well done. Please head back to the video content so we can discuss what to do next.

Mark as completed