Building Alexa Skills with Python and Flask

Done By: Max Ong Zong Bao

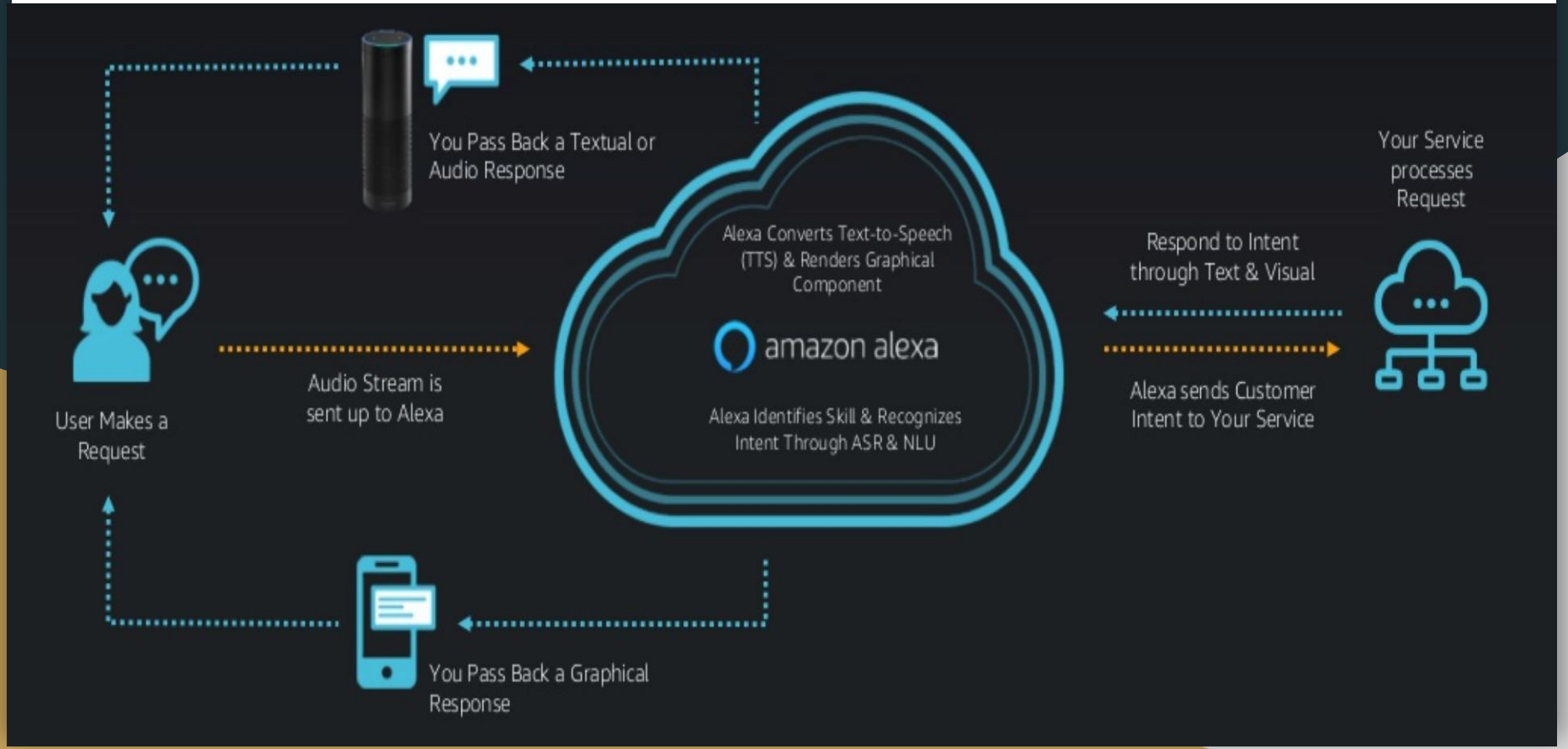
Why? What's the Benefit for it?

1. Alexa Echo was 1 of the top selling item in Christmas at US
2. 300% growth in the amount of Alexa Skills in US in 2017
3. 33 Million voice enabled devices in circulation to this date

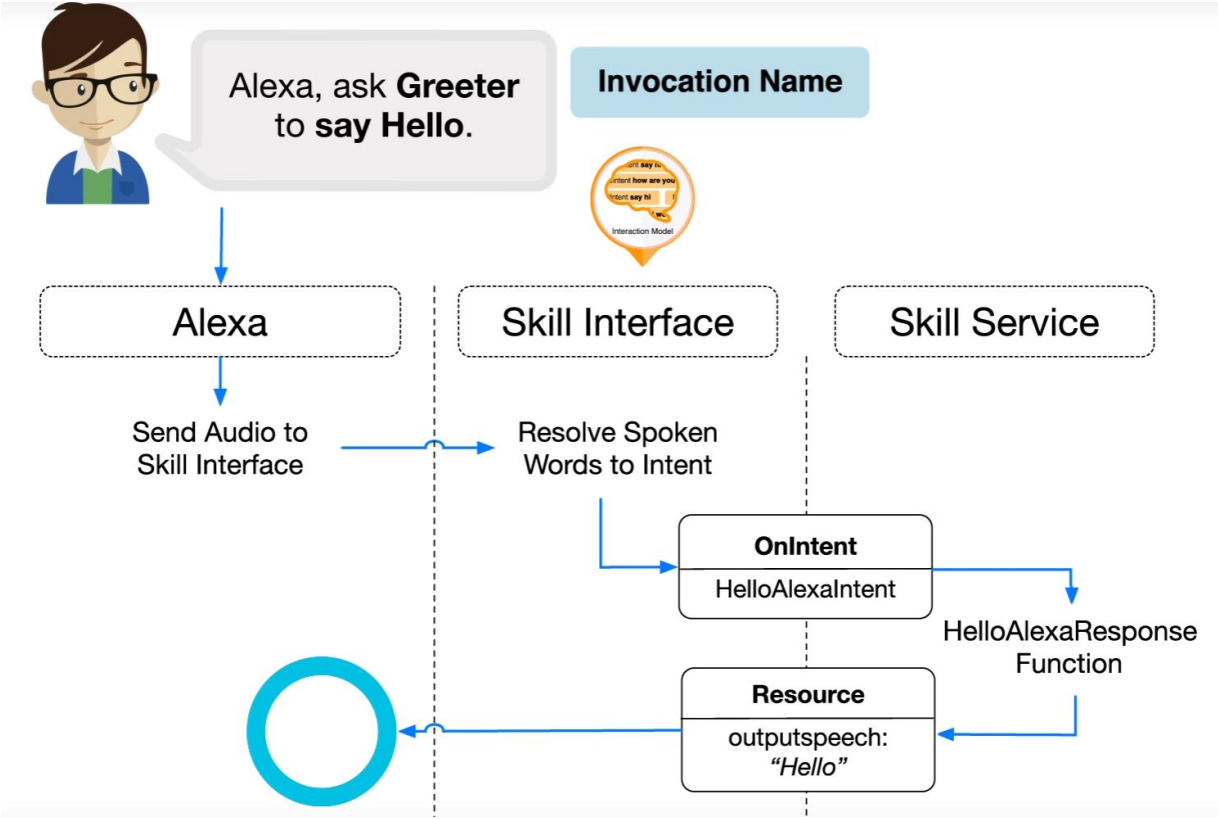
What Is Alexa Skills?

1. It’s basically another voice based application for your Amazon Echo enabled devices
2. You just interact with it by just calling it’s Alexa Skills name
3. It’s quite easy to build using Flask-Ask within just 5 minutes.

Alexa Interaction Model



Typical Interaction Model with Alexa



Alexa Skills Demo

Create virtual environment

```
virtualenv -p python3 alexa
```

Change to Virtual Environment

```
source alexa/bin/activate
```

Installing Python Packages

```
pip install Flask===0.12.1
pip install flask-ask===0.9.8
pip install requests
pip install cryptography<2.2
```

Installing Ngrok

Sign Up a Account at Ngrok

https://ngrok.com

Follow the installation Instructions

https://ngrok.com/download

Default Flask Template - Import Libraries

Import json

Import request

from flask import Flask

from flask_ask import **Ask**, **statement, question**

from weather_forecast import get_24h_forecast

Difference Between Question & Statement

Question

1. Is persistent which is similar to session in a website
2. requires the user to provide voice input in other for the Alexa Skill to continue their function.
3. It can be programmed to ask again by a feature called “Reprompt ” in another way when a user does not reply Alexa

Statement

1. Statement is a declaration that closes a echo session
2. Statement does not store information when it used which requires data to be store in database
3. With statement, user can start another session with echo again.

Default Flask Template - Setup Flask App

```
app = Flask(__name__)
ask = Ask(app, '/weather_reader')


@app.route('/')
def homepage():
  return 'Hi there, how your doing?'


@ask.launch
def start_skill():
  welcome_messsage = 'That\'s awesome!!!!! Would you like to know today\'s weather?'
  return question(welcome_messsage)


if __name__ == '__main__':
  welcome_messsage = 'Hello there, would you like the latest weather forcast?'
  app.run(debug=True)
```

Flask-Ask Alexa Logic - Yes & No Intents

```
@ask.intent("YesIntent")
def share_weather():
    weather = get_weather()
    weather_msg = '"Currently, At PyCon APAC 2018 the forecast for today is
{}"'.format(weather)
    return statement(weather_msg)


@ask.intent("NoIntent")
def no_intent():
    bye_text = 'Oh... that\'s too bad ... okay good bye then'
    return statement(bye_text)
```

Weather_forecast.py - Consume API

```
import requests


def get_24h_forecast():
    r = requests.get('https://api.data.gov.sg/v1/environment/24-hour-weather-forecast')
    data = r.json()
    general = data['items'][0]['general']

    return general
```

Flask-Ask Alexa Logic - Brief Weather Forecast

```
def get_weather():
    forecast = get_24h_forecast()

    forecast_msg = '{} with the lowest temperature at {} degrees celsius to highest {} degrees
        celsius. Humidity from lowest {} percent to highest {} percent.'.format(
        forecast['forecast'], forecast['temperature']['low'], forecast['temperature']['high'],
        forecast['relative_humidity']['low'], forecast['relative_humidity']['high'])

    return forecast_msg
```

Deployment - Preparation

Run the following on your terminal

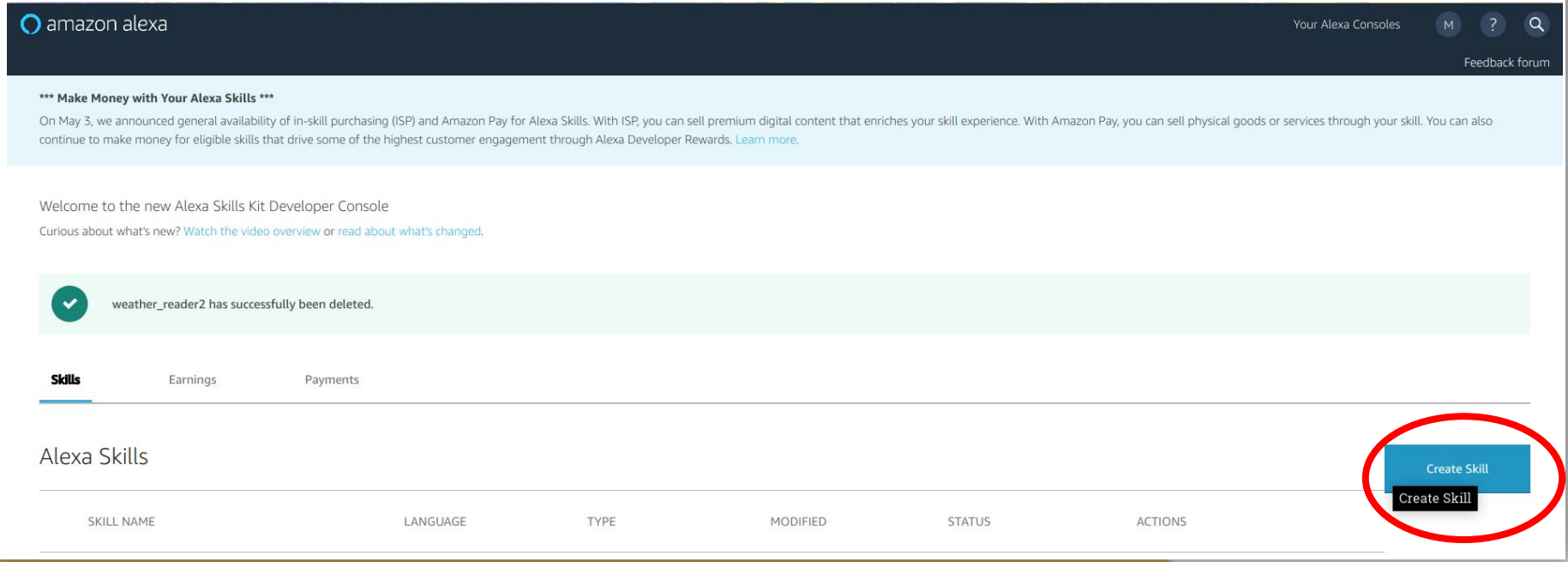
python try_alexa.py

./ngrok http 5000

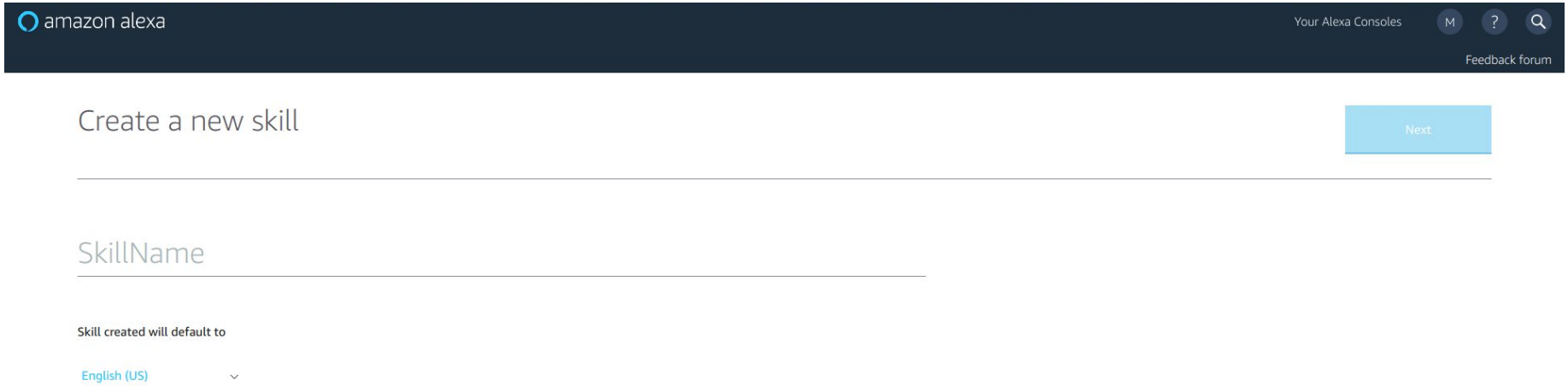
Amazon Skills Development Console

Go to this link below

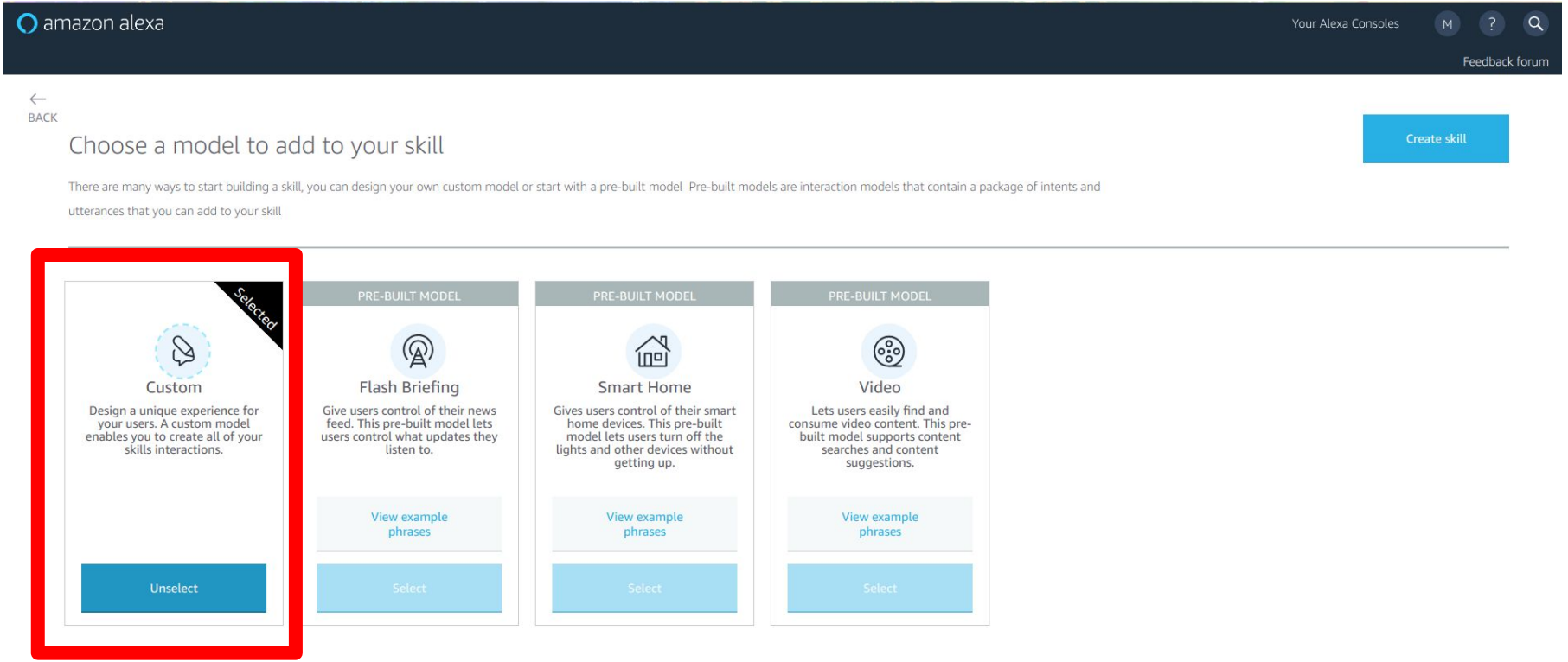
https://developer.amazon.com/alexa/console/ask#



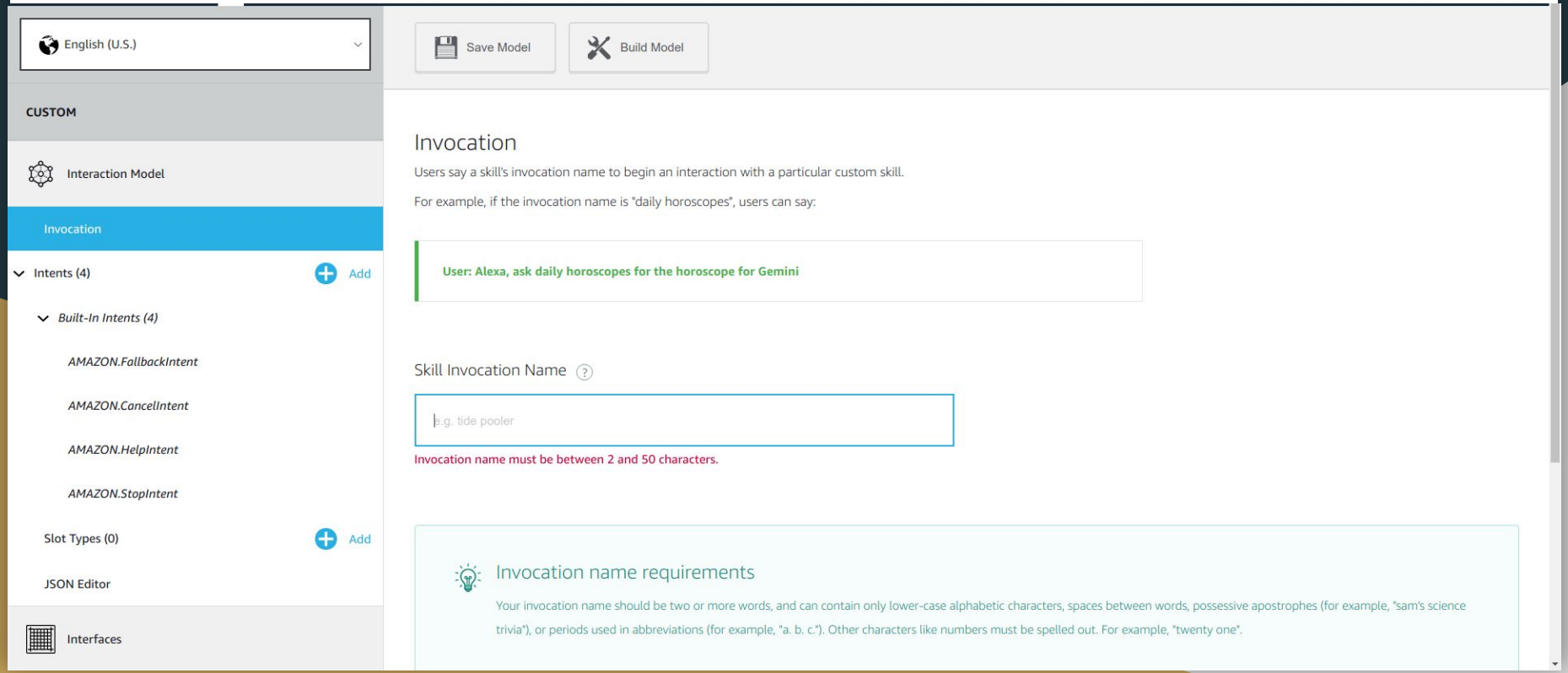
Name of Alexa Skill



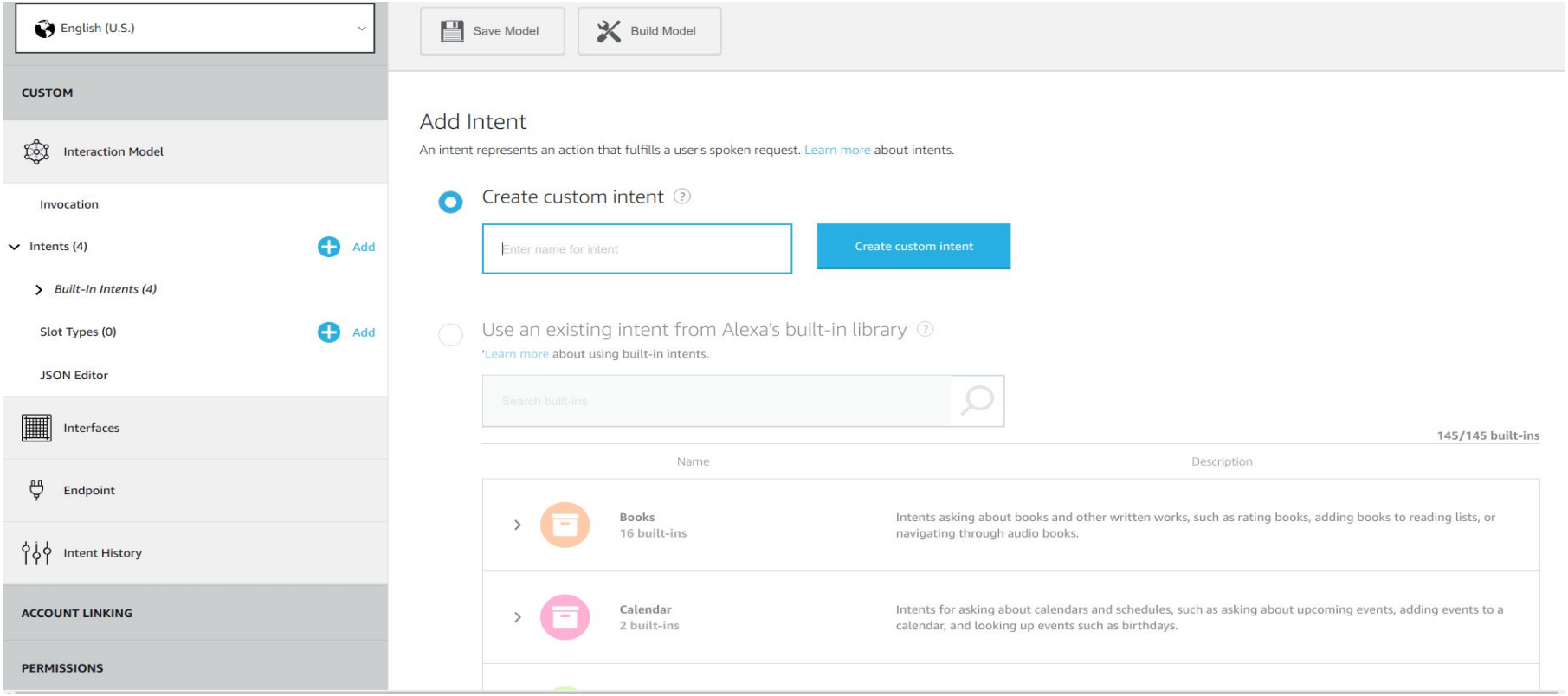
Selecting Interaction Model



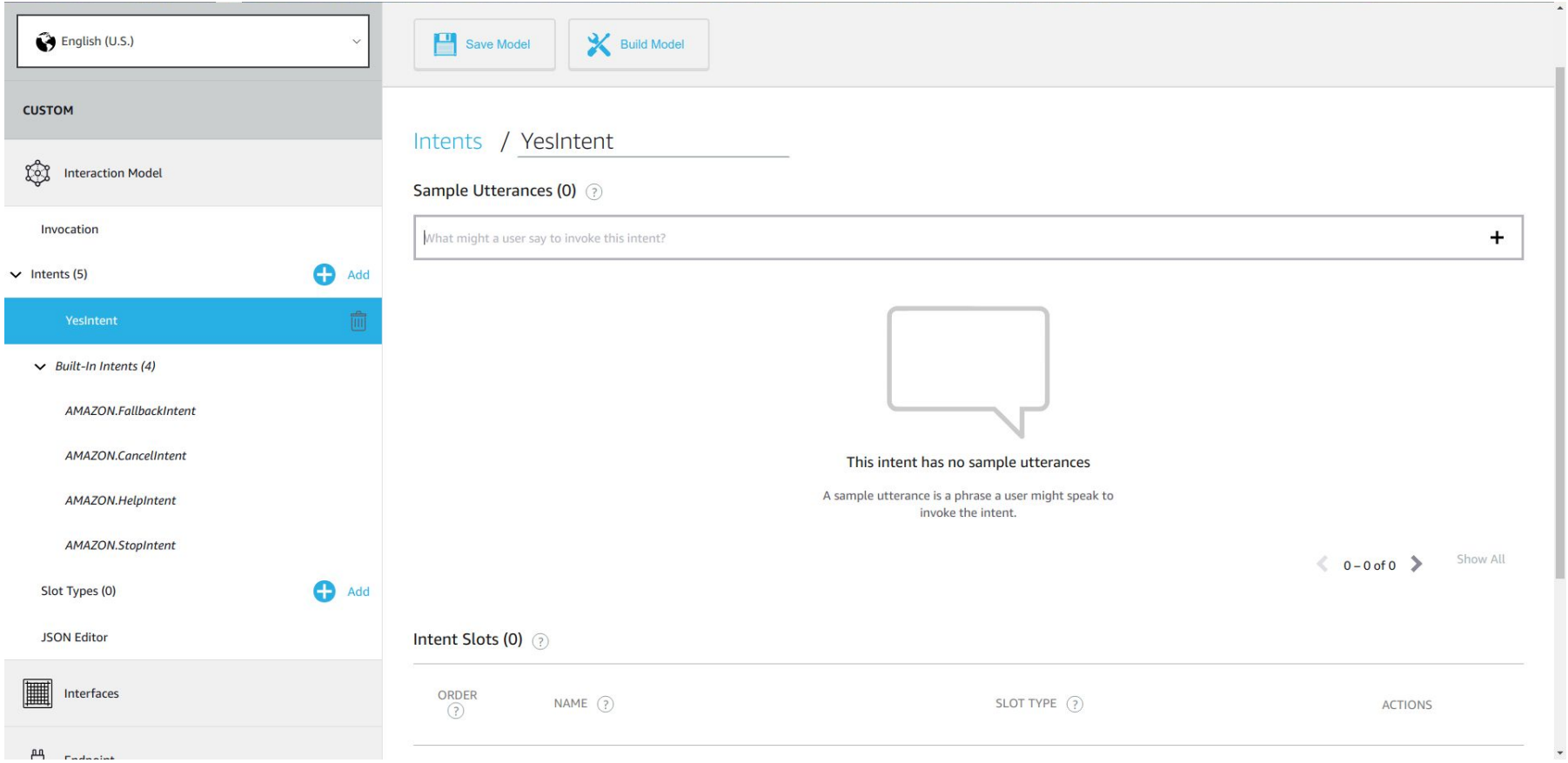
Invocation - Starting Alexa Skill



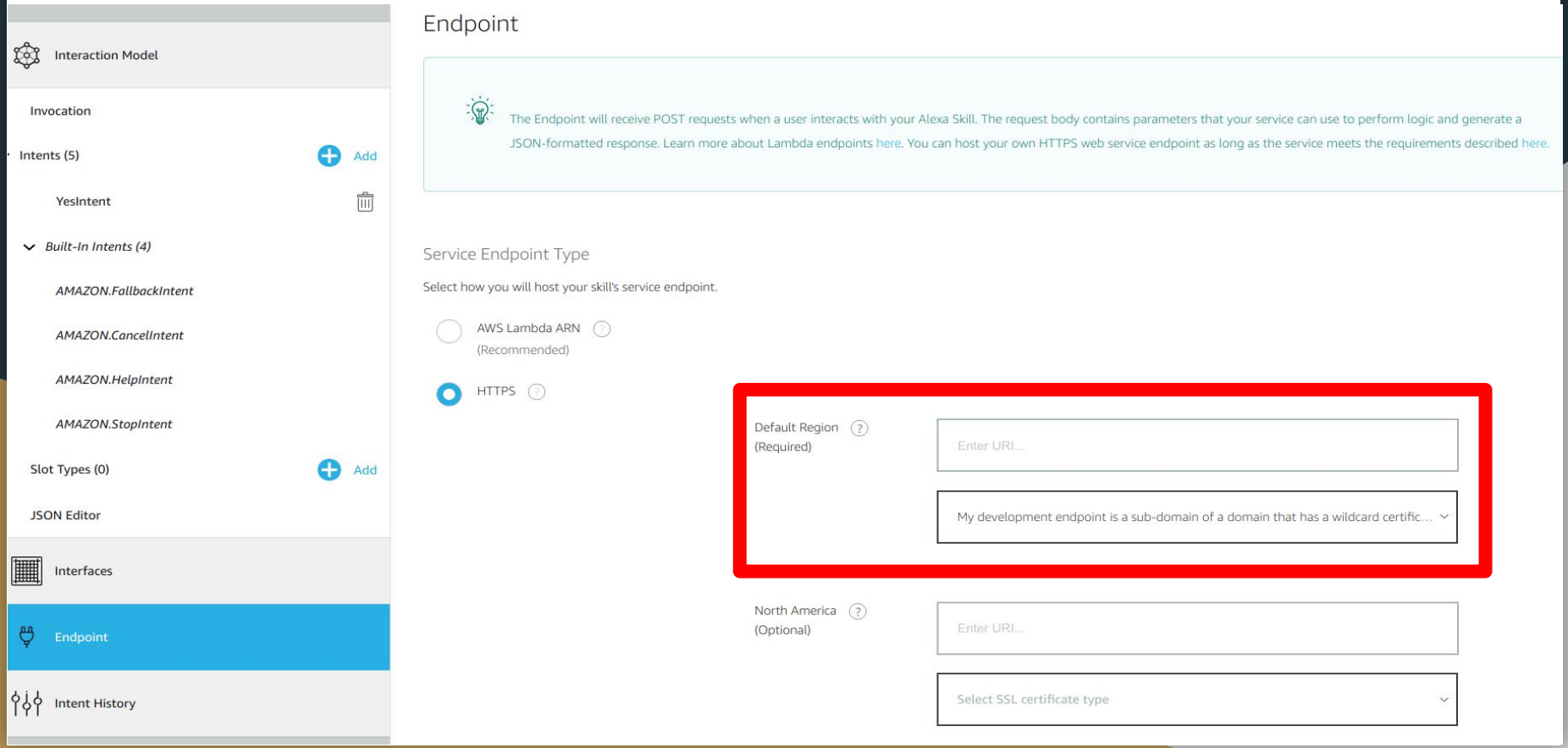
Adding Custom Intent - Add Your Yes & No



Adding Custom Intent - Utterance



Endpoints - Adding Ngrok HTTPS Address



Testing Alexa Skill