

# Lab 1: Building an Alexa Skill using Alicebot

EE596/LING580 Conversational Artificial Intelligence

Hao Cheng

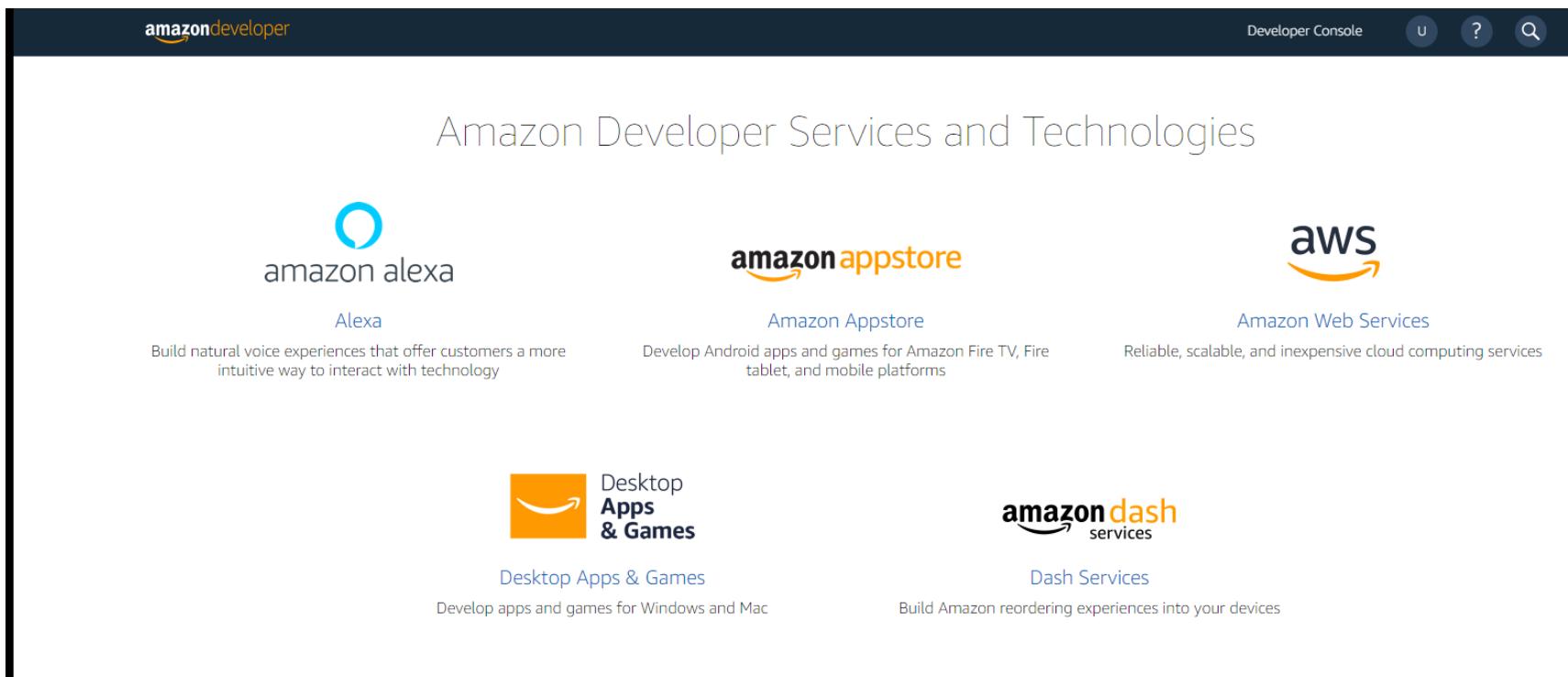
# Tasks 1, 2, 3

- Follow instructions in the Git repository
  - [https://github.com/hao-cheng/ee596\\_spr2019\\_lab1](https://github.com/hao-cheng/ee596_spr2019_lab1)

# Task 4: Create an Alexa Skill

# Step 4.1

- Sign in to the [Amazon developer portal](#). If you haven't done so already, you'll need to create a free account.
  - <https://developer.amazon.com/>



# Step 4.2

- Click **Developer Console**



on Developer Services and Technologies



Amazon Appstore

Develop Android apps and games for Amazon Fire TV, Fire tablet, and mobile platforms



Amazon Web Services

Reliable, scalable, and inexpensive cloud computing services



Desktop Apps & Games

Create games for Windows and Mac

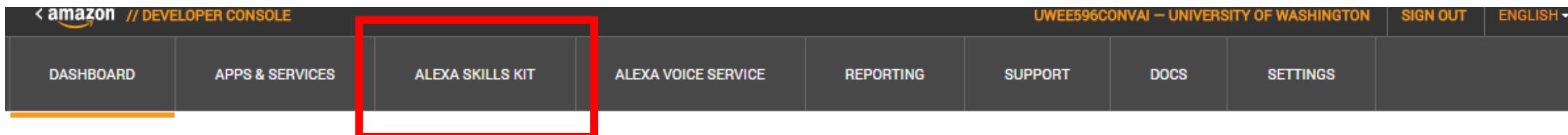


Dash Services

Build Amazon reordering experiences into your devices

# Step 4.3

- Go to **ALEXA SKILL KIT**



The screenshot shows the Amazon Developer Console interface. At the top, there's a navigation bar with several links: DASHBOARD (underlined in orange), APPS & SERVICES, ALEXA SKILLS KIT (which is highlighted with a red box), ALEXA VOICE SERVICE, REPORTING, SUPPORT, DOCS, and SETTINGS. To the right of the navigation bar, it says "UWEE596CONVAI – UNIVERSITY OF WASHINGTON", "SIGN OUT", and "ENGLISH". Below the navigation bar, there are two main sections: "Notifications" on the left and "Announcements" on the right.

### Notifications

All	Critical
No Notifications.	

### Announcements

Version 2 of the Alexa Skills Kit SDK for Java Is Now Available	Mar 29, 2018	The New Alexa Skills Kit Developer Console Is Now Generally Available	Mar 27, 2018
Build Alexa Skills for France   Développez des Skills Alexa pour la France	Mar 12, 2018	Announcing the New Alexa Skills Kit Sound Library to Create More Engaging Skills	Mar 2, 2018
Announcing the New Alexa Skills Kit Developer Console (Beta) to Streamline Your Skill Development Process	Feb 15, 2017	AMAZON.YesIntent and AMAZON.NoIntent are Now Compatible with ASK Dialog Management Features	Feb 14, 2018

# Step 4.4

- Click **Create Skill**

Welcome to the new Alexa Skills Kit Developer Console  
Curious about what's new? [Watch the video overview](#) or [read about what's changed](#).

## Alexa Skills

SKILL NAME	LANGUAGE	TYPE	MODIFIED	STATUS	OPTIONS



**Alexa Skills**

Create your first skill or learn more about [Alexa Skills Kit](#)

**Create Skill**

# Step 4.5

- Name your skill. This is the name displayed to users in the Alexa app. For this example, we'll call it **Lab One**. Click **Next**.

Create a new skill

Lab One

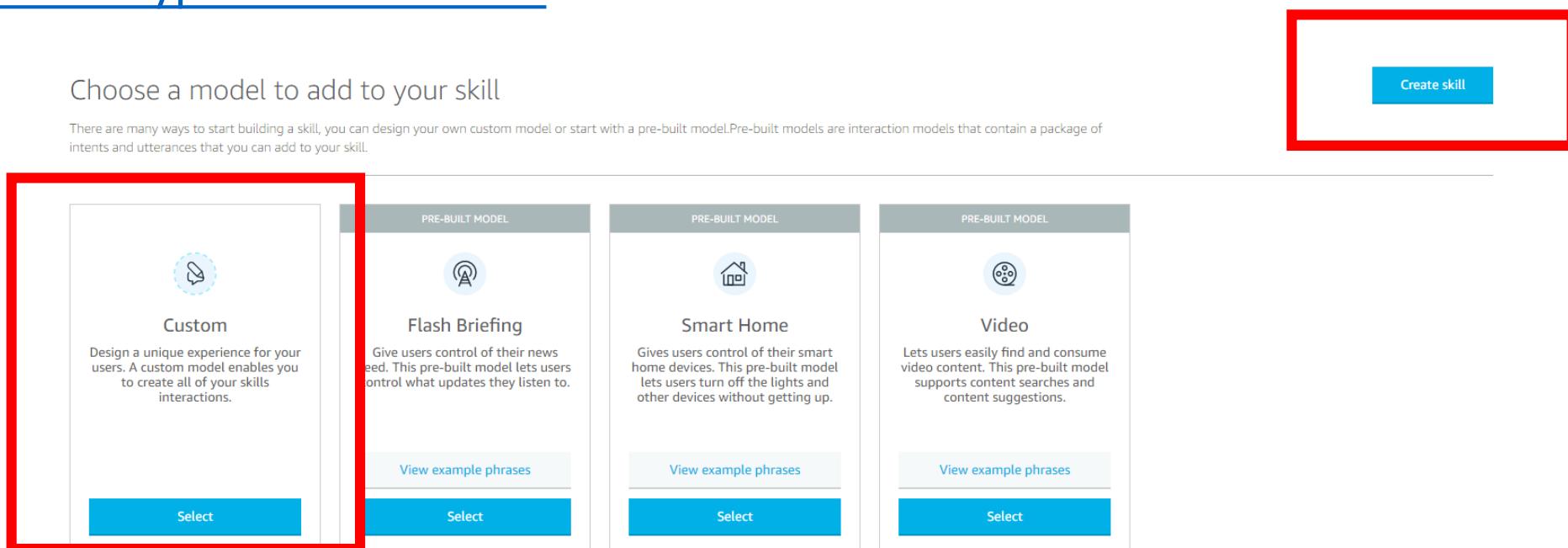
Skill created will default to English (US) ▾

Feedback

Next

# Step 4.6

- Choose **Custom**. Then click **Create skill**.
  - For different skill models, please read the official documents.
  - <https://developer.amazon.com/docs/ask-overviews/understanding-the-different-types-of-skills.html>



# Step 4.7

- Check the video **How to get started** for a brief introduction.
  - <https://youtu.be/1pvR4aqwGhg>

The screenshot shows the Alexa Skills Kit Developer Console interface. The top navigation bar includes links for 'Your Skills', 'Color Picker', 'Build', 'Test', 'Launch', and 'Measure'. The left sidebar has sections for 'CUSTOM', 'Interaction Model', 'Invocation', 'Intents (3)', 'Slot Types (0)', 'JSON Editor', 'Interfaces', and 'Endpoint'. The 'Intents' section is expanded, showing three built-in intents: 'AMAZON.CancelIntent', 'AMAZON.HelpIntent', and 'AMAZON.StopIntent'. Below the 'Intents' section are buttons for '+ Add' and '+ Add'. The 'ACCOUNT LINKING' and 'PERMISSIONS' sections are also visible. The right side of the screen features a large video player with the title 'How to get started' and the subtitle 'Alexa Skills Kit Developer Console: Build'. The video thumbnail shows the Amazon Alexa logo and the text 'amazon alexa'. A red box highlights the video player area. Below the video, there is a 'RESOURCES' section with links to 'Documentation', 'Sample Alexa Projects', 'Weekly Office Hours', and 'Alexa Developer Forums', each with a brief description.

How to get started

Alexa Skills Kit Developer Console: Build

amazon alexa

Developer Console: Build

RESOURCES

[Documentation](#)

Refer to our technical documents for detailed guides on building custom skills.

[Sample Alexa Projects](#)

Whatever your experience, you can get started quickly using one of our Alexa projects on GitHub.

[Weekly Office Hours](#)

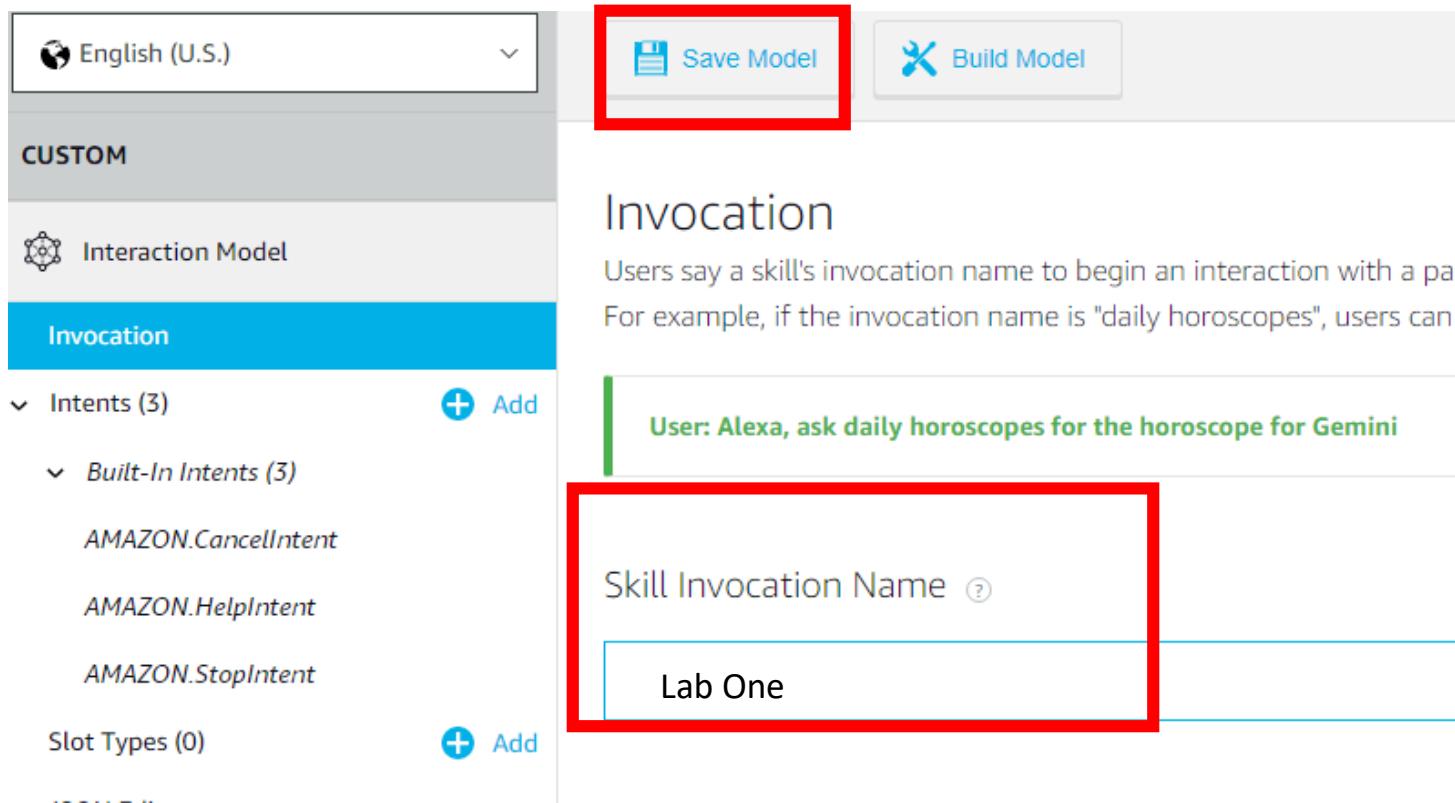
Drop in with your questions and thoughts. We're here to help you.

[Alexa Developer Forums](#)

Visit our forums to get inspired, join our Alexa developer community.

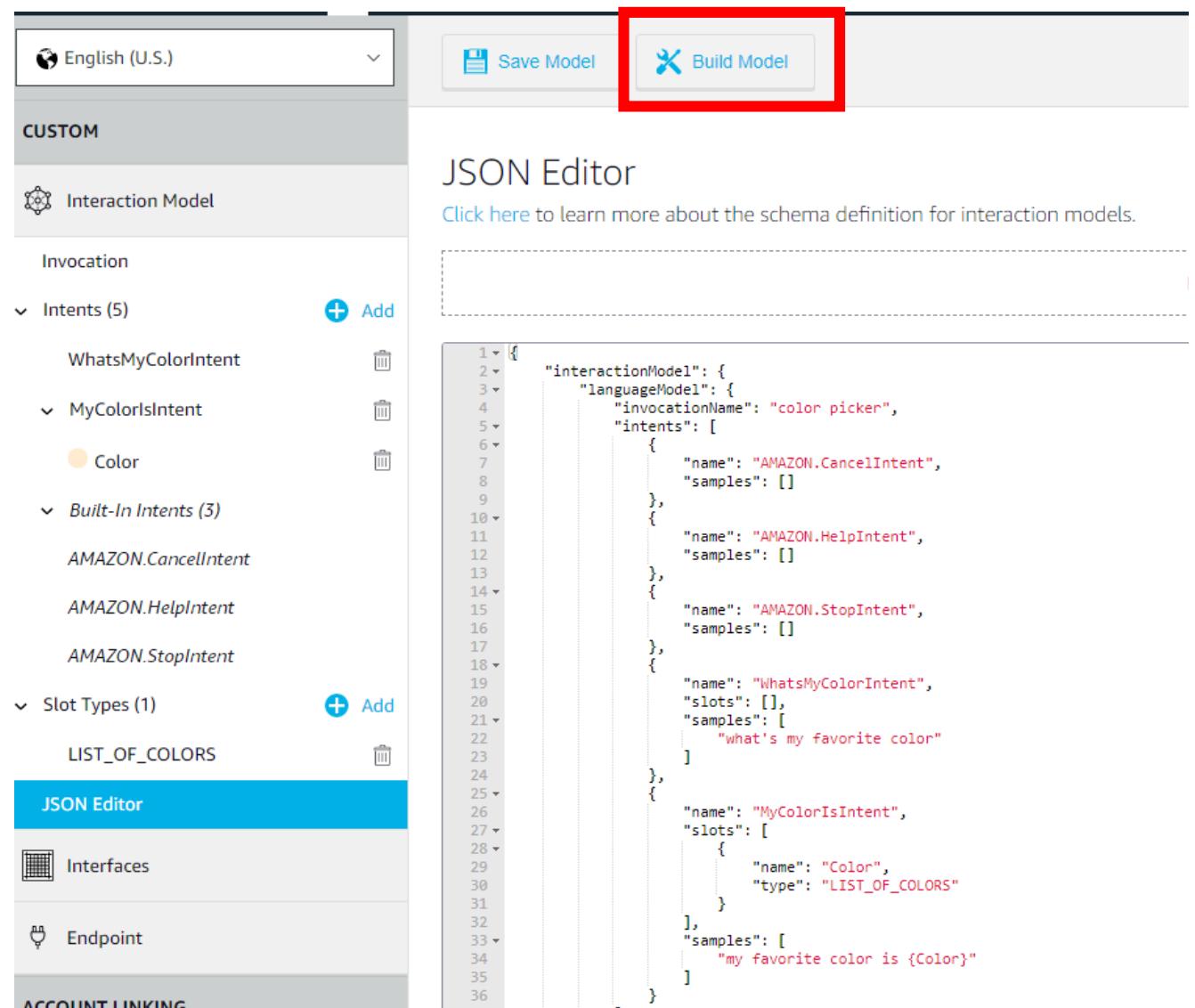
# Step 4.8

- Create an invocation name. Let's use the skill name **Lab One**. Choose **Save Model** to continue.
  - Users will say, "Alexa, open **lab one**" to interact with your skill



# Step 4.9

- Directly go to the **JSON Editor** in the **Interaction Model**.
- Paste the [alexa\\_skill/interaction\\_model.json](#) file in the [ee596\\_spr2019\\_lab1](#) Git repository to the JSON Editor.
- Click **Build Model**.



The screenshot shows the AWS Lambda Interaction Model JSON Editor. At the top, there is a language selector set to "English (U.S.)" and a "Save Model" button. To the right of the save button is a "Build Model" button, which is highlighted with a red box. Below the buttons, the interface is divided into sections: "CUSTOM" (Interaction Model), "Invocation" (Intents and Slot Types), and "JSON Editor". The "JSON Editor" section contains a "Click here" link for schema definition and a large text area showing the JSON code. The JSON code is identical to the one provided in the question, defining an interaction model with various intents and slot types.

```
1  {
2     "interactionModel": {
3         "languageModel": {
4             "invocationName": "color picker",
5             "intents": [
6                 {
7                     "name": "AMAZON.CancelIntent",
8                     "samples": []
9                 },
10                {
11                    "name": "AMAZON.HelpIntent",
12                    "samples": []
13                },
14                {
15                    "name": "AMAZON.StopIntent",
16                    "samples": []
17                },
18                {
19                    "name": "WhatsMyColorIntent",
20                    "slots": [],
21                    "samples": [
22                        "what's my favorite color"
23                    ]
24                },
25                {
26                    "name": "MyColorIsIntent",
27                    "slots": [
28                        {
29                            "name": "Color",
30                            "type": "LIST_OF_COLORS"
31                        }
32                    ],
33                    "samples": [
34                        "my favorite color is {Color}"
35                    ]
36                }
37            ]
38        }
39    }
40 }
```

# Step 4.10: Configure the Endpoint

The screenshot shows the Alexa Skills Kit (ASK) configuration interface. On the left, there's a sidebar with various tabs: English (US), CUSTOM, Interaction Model, Invocation, Intents (1), ConverselIntent, Text, Built-In Intents (0), Slot Types (1), TEXT, JSON Editor, Interfaces, Endpoint (which is highlighted with a red box and has a large orange '1' next to it), Intent History, Display (BETA), and IN-SKILL PRODUCTS.

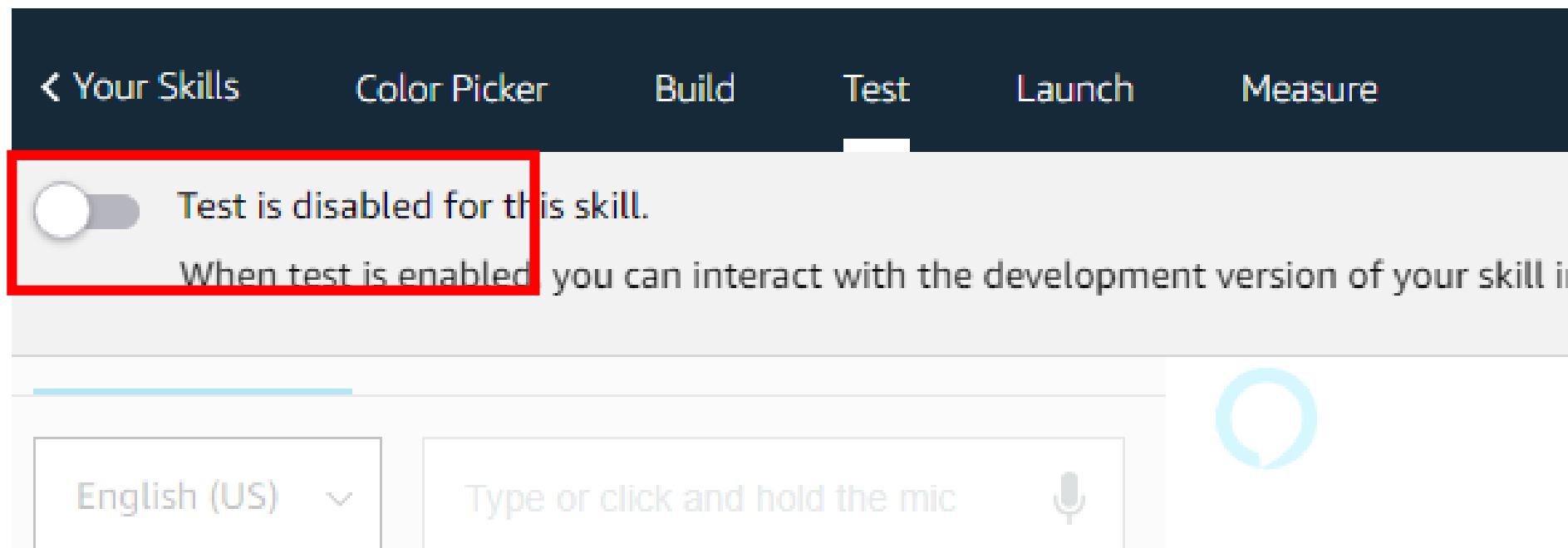
The main area is titled "Endpoint". It contains a note: "The Endpoint will receive POST requests when a user interacts with your Alexa Skill. The request body contains parameters that your service can use to perform logic and generate a JSON-formatted response. Learn more about AWS Lambda endpoints [here](#). You can host your own HTTPS web service endpoint as long as the service meets the requirements described [here](#)." Below this is a section titled "Service Endpoint Type" with the sub-instruction "Select how you will host your skill's service endpoint." It offers two options: "AWS Lambda ARN (Recommended)" (radio button unselected) and "HTTPS" (radio button selected). A note below says "My development endpoint is a sub-domain of a domain that has a wildcard certificate fro...". At the top right is a "Save Endpoints" button, which is also highlighted with a red box.

Overlaid on the interface are several callout boxes with instructions:

- 4. Save Endpoint.** Points to the "Save Endpoints" button.
- 2. Paste your ngrok address here.** Points to the "Default Region (Required)" input field containing "https://da546792.ngrok.io".
- 3. Choose this option for certificate.** Points to the "HTTPS" radio button.

## Step 4.11

- Go to the **Test** tab and Enable test.



# Step 4.12

- Type “open lab one” & talk with the bot using either text or voice.
- Click the bot utterance and analyze the **JSON input** and **JSON output**.

The screenshot shows the Alexa Skills Kit sample interface. At the top, there are tabs for "Test is enabled for this skill" (checked), "Skill I/O" (checked), "Echo Show Display" (checked), and "Device Log". Below these are buttons for "Alexa Simulator" (selected), "Manual JSON", "Voice & Tone", and language settings "English (US)". A microphone icon indicates the "Type or click and hold the mic" button is active.

The main area displays a conversation:

- Bot: Welcome to the Alexa Skills Kit sample. Please tell me your favorite color by saying, my favorite color is red
- User: my favorite color is red
- Bot: I now know your favorite color is red. You can ask me your favorite color by saying, what's my favorite color?
- User: what is my favorite color
- Bot: Your favorite color is red. Goodbye.

Below the conversation, two large red boxes highlight the "Skill I/O" and "JSON Output" sections.

**Skill I/O**

**JSON Input**

```
1: {  
2:   "version": "1.0",  
3:   "session": {  
4:     "new": true,  
5:     "sessionId": "amzn1.echo-api.session.3a2f47ec-d5ad-4b8c-a3d3-0ee1b3d",  
6:     "application": {  
7:       "applicationId": "amzn1.ask.skill.d52b91fc-96c8-4a4c-802e-bf2b37",  
8:     },  
9:     "user": {  
10:      "userId": "amzn1.ask.account.AEKNNPQKK7HX224WTJBL2ME5PDFCIPKWT7Z",  
11:    }  
12:  },  
13:  "context": {  
14:    "AudioPlayer": {  
15:      "playerActivity": "IDLE"  
16:    },  
17:    "Display": {},  
18:    "System": {  
19:      "application": {  
20:        "applicationId": "amzn1.ask.skill.d52b91fc-96c8-4a4c-802e-bf2b37",  
21:      },  
22:      "user": {  
23:        "userId": "amzn1.ask.account.AEKNNPQKK7HX224WTJBL2ME5PDFCIPKWT7Z",  
24:      },  
25:      "device": {  
26:        "deviceId": "amzn1.ask.device.AF400E55YVSYSCYRD235XZW62K6A07",  
27:        "supportedInterfaces": {  
28:          "AudioPlayer": {},  
29:          "Display": {  
30:            "templateVersion": "1.0",  
31:            "markupVersion": "1.0"  
32:          }  
33:        }  
34:      }  
35:    }  
36:  }  
37: }
```

**JSON Output**

```
1: {  
2:   "body": {  
3:     "version": "1.0",  
4:     "response": {  
5:       "outputSpeech": {  
6:         "type": "PlainText",  
7:         "text": "Welcome to the Alexa Skills Kit sample. Please tell me your favorite color by saying, my favorite color is red",  
8:       },  
9:       "card": {  
10:         "type": "Simple",  
11:         "title": "SessionSpeechlet - Welcome",  
12:         "content": "SessionSpeechlet - Welcome to the Alexa Skills Kit sample. Please tell me your favorite color by saying, my favorite color is red",  
13:       },  
14:       "reprompt": {  
15:         "outputSpeech": {  
16:           "type": "PlainText",  
17:           "text": "Please tell me your favorite color by saying, my favorite color is red",  
18:         },  
19:       },  
20:     },  
21:     "shouldEndSession": false  
22:   },  
23:   "sessionAttributes": {}  
24: }
```