Testing your Alexa skill by using chai, mocha and bespoken tool:-

In this blog, we are going to implement unit test for our Alexa skill. Unit testing is the testing of the each and every individual function and checking whether the expecting and actual result are same or not.

So basically, **Mocha** is a feature-rich JavaScript test framework running on [Node.js](https://nodejs.org/) and in the browser, making asynchronous testing simple and fun. Mocha comes with tons of great features, like use of assertion library you want i.e Chai, simple async support, including promises and async test timeout support etc. **Chai** is a BDD / TDD assertion library for node and the browser that can be paired with any JS testing framework. For more details regarding chai assertion library, go to <https://www.chaijs.com>. While writing test cases, you also need virtual alexa which is to interact with skills programmatically.

Introduction for my alexa skill i.e Ally:-

My alexa skill that is real use case whose name is ally is designed and developed for Medical purpose. Patient can tell ally if they need any kind of service which can of anything like change of bedsheet, some medicine or drips related, going for restroom or if there is any emergency felt. As a response, registered nurse will get a message in their registered mobile number and head nurse will be called in case of emergency situation. In case of emergency situation, a siren will get activated in hospital. This is very much helpful for the patients who are admitted in hospital. This also helps the hospital to do proper management and care to patients.

Alexa developer console:-

You can test your skill in amazon developer console. You have to create an amazon developer account here at <https://developer.amazon.com/>

Slect Amazon alexa then select your skill. Go to test and on the simulator. Thus, you are ready to test. Benefits of alexa Developer testing are easy to install/use, zero cost, reduced errors in production, secure way to test etc.

Prerequisites for unit testing:-

* Install nodejs in your local. Command used is npm install
* You can use any text editor, I used visual studio code.
* Install mocha. Run **npm install** -g **mocha**
* Install chai. Run npm install chai
* Install virtual alexa. Run npm install virtual-alexa --save-dev

Write your unit testing code inside test folder with .js extension. Firstly, you need to give parameter for chai and virtual-alexa by following command. Every test case file follows the same basic pattern. First, you have a describe block. Keyword Describe is used to group individual tests. Secondly, inside the describe, we’ll have it blocks. The first parameter to it should provide a human-readable description of the test. Chai provides a should keyword for BDD style which allows to chain assertions and an expect() method for TDD style. It function is used to create the unit tests.

Conversation flow of ally:-

Open medicalhelp

Hi, I am ally your bedside assistant. Please tell me what assistance you require.

Intent of ally

Comfort emergency restroom

I need a change I am in pain May I use the

of bedsheet restroom

I am sending someone to assist Emergency called, Please Please remain

you with bedsheet.They should remain where you are until the where you are

arrive shortly, please remain nurse arrives until the nursing

where you are until they arrive assistant arrives.

to assist you.

Bye bye bye bye bye bye

Bye for now. Bye for now. Bye for now.

Ally response

User response

Test case 1: Intent : comfort

Input : I need a change of bedsheet

Output : I am sending someone to assist you with bedsheet. They should arrive shortly, please remain where you are until they arrive to assist you.

Test case 2: Intent : emergency

Input : I am in pain

Output : Emergency called, Please remain where you are until the nurse arrives.

Test case 3 : Intent : restroom

Input : may i use the restroom

Output : Please remain where you are until the nursing assistant arrives.

Code snippet of Unit testing for the Alexa Skill:-

const assert = require('chai').assert; // to include chai library in our code

const va = require("virtual-alexa"); // to include virtual alexa

const alexa = va.VirtualAlexa.Builder()

.handler("../lambda/custom/index.handler") // Lambda function file and name

.interactionModelFile("../models/en-US.json") // Path to interaction model file

.create();

describe('BedAssistFlow ', function(done) { //describe test case

this.timeout(200000);

it('My First Test', async () => {

let result = await alexa.launch();

assert.include(result.prompt(), 'Hi I am Ally your bedside assistant. Please tell me what assistance you require.');

});

it('Bedside assistant ComfortHelp', async () => {

let result = await alexa.launch();

assert.include(result.prompt(), 'Hi I am Ally your bedside assistant. Please tell me what

assistance you require.');

result.sessionAttributes.intentvalue = "comfortintent";

result = await alexa.utter("Please change my bedsheet");

console.log("result",result);

assert.include(result.prompt(), '<speak> I am sending someone to assist you with

bedsheet. They should arrive shortly, please remain where you are until they arrive to

assist you. </speak>');

});

});

By above steps, you will be able to test you unit cases. To get the result of your test cases, go to your folder where test cases you have mentioned and give mocha TestCase.js and execute.

You can also refer: https://www.thepolyglotdeveloper.com/2016/08/test-amazon-alexa-skills-offline-with-mocha-and-chai-for-node-js/

Hope you understand and you are successful in doing it.

Thanks !!!