This 2nd assignment is an extension of the first assignment. In the 1st assignment, we used a lambda function in Amazon cloud to provide the functionality for your Alexa Skill (Amazon automated most of this process for us). In this lab, we will use IBM Cloud’s equivalent of lambda functions, called Cloud Functions. IBM’s “Cloud Functions” is based on open source software. Since we are now calling out to an external service, we will be responsible for configuring everything this time. Also, instead of programming utterances into the Alexa Skill, we will let have Alexa pass the utterance to Watson Assistant, and let Watson Assistant handle understanding what has been said and how to respond.

To make the assignment even more exciting, you are also going to provide the ability for Watson Assistant to answer these questions over the phone. You will integrate Watson Assistant with Twilio (a communications provider) to enable these phone calls.

You should STILL be able to ask your Alexa Skill:

1. Who your team members are
2. Another question related to class or your group
3. Another question related to class or your group

And your Alexa Skill should be able to give an appropriate response.

You should ALSO be able to make a phone call and ask the same questions over the phone and receive a verbal response over the phone.

You will need a free IBM Cloud education account to work on the IBM part of this assignment. To do this:

1. Create a trial account in IBM Cloud here: <https://cloud.ibm.com/login>
2. Create a trial account in Twilio: [www.twilio.com](http://www.twilio.com)
3. In Twilio, we will create a phone number and a Session Initiation Protocol (SIP) Trunk. You will then configure your phone number to point to this SIP Trunk, and for the SIP Trunk to point to the Watson Assistant agent you create.
4. Host your code in your own github repo. I still want the link. If you follow the tutorial linked below ( in “helpful resources” ), you will see that they actually ‘develop’ the code locally, then they “package” the code up into a zip file that they name action.zip. From there you will need to use the command line tools to use that zip file as the base for your cloud function. (it will create the cloud function for you using that zip file). You will still need to modify the action just like I showed you in class.

## Deliverables (What should you submit to Canvas)

**ONLY THE TEAM LEADER SHOULD SUBMIT ITEMS 1 - 7**

1. Screenshots showing your Intents (there should be ONLY one), slots (Again, there should be only 1, that you will use to forward information to Watson Assistant), and your configured endpoint (it should point to some HTTPS endpoint that is your IBM Cloud entry point)
2. Screenshots of the intents you’ve created in Watson Assistant and the dialog nodes associated with them.
3. Screenshots of your twilio configuration
4. A link to your github repo containing the code for your program’s functionality for your IBM Cloud function
5. A short video recording showing a group member testing your app on the echo that was assigned to your group
6. A short video recording show a group member testing your app on your phone, via the alexa app
7. A short video showing a group member making a phone call and receiving a response over the phone.

**EVERYONE MUST SUBMIT GROUP EVALUATION FORM**

1. Group evaluation form

## Helpful Resources

1. [IBM Tutorial on Dialog Actions](https://console.bluemix.net/docs/services/assistant/dialog-actions.html#dialog-actions)
2. [Link to github repo for a similar project](https://github.com/IBM/alexa-skill-watson-conversation)
3. [Link to youtube video for project in #2](https://www.youtube.com/watch?v=_iODArA1Eqs)