IBM Watson Digital Assistant
CSC 202, Spring 2022

IBM Watson Assistant is a digital assistant for building conversational interfaces to applications:
https://www.ibm.com/products/watson-assistant

Some key components of Watson Assistant are described below:

- An ***intent*** is a purpose or goal (such as to make a reservation, ask about store hours, etc). Watson Assistant learns how to recognize intents by training on examples to learn how to *classify* an intent.

- An ***entity*** represents information in the user input that is relevant to the user's purpose, such as a product, a reservation time, etc. Entities are specified through keywords, synonyms, or patterns.

- A ***context variable*** is a variable used to store information that may persist during a conversation, such as the user's name. Context variables are set in the dialogue, and can store entities or other variables. To clear a context variable, set it to *null*.

- The ***dialogue*** is a conversation flowchart that determines how Watson welcomes the user, responds to different intents, and converses with the user.

Watson Assistant Tutorial

1. Sign up for an account by clicking the Get Started Free button at
   https://www.ibm.com/cloud/watson-assistant/

2. Then go back to https://www.ibm.com/cloud/watson-assistant/ and click the Get Started Free button again, and log in when prompted.

3. Click the Create Assistant button to get started
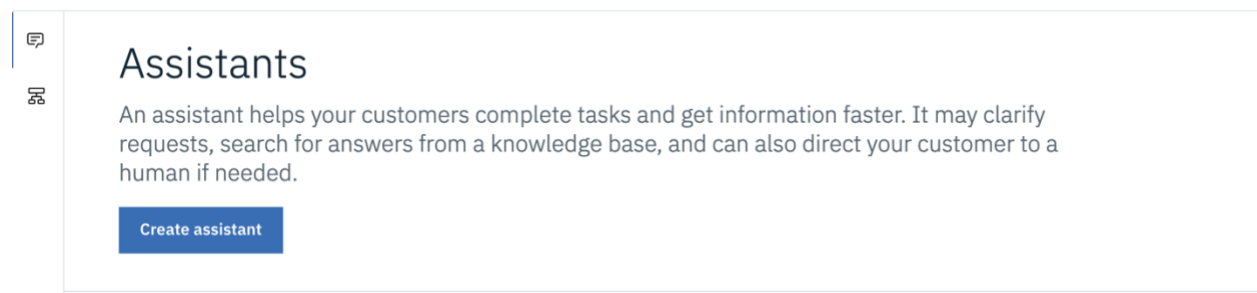
4. Give your assistant a name, and an optional description, and then click Create Assistant.

5. Click the button to add a Dialog skill (do not click any buttons reference the "plus plan", which costs money).

6. Select Use Sample Skill, and then click on the Customer Care Sample Skill, to view the Intents.

After clicking on the Customer Care Sample Skill, you will see something like the following:

	Intents (9) ↑	Description	Modified ↑↓	Examples ↑↓
☐	#Cancel	Cancel the current request	a few seconds ago	7
☐	#Customer_Care_Appointments	Schedule or manage an in-store appo...	a few seconds ago	20
☐	#Customer_Care_Store_Hours	Find business hours.	a few seconds ago	48
☐	#Customer_Care_Store_Location	Locate a physical store location or an ...	a few seconds ago	25
☐	#General_Connect_to_Agent	Request a human agent.	a few seconds ago	47
☐	#General_Greetings	Greetings	a few seconds ago	30
☐	#Goodbye	Good byes	a few seconds ago	6
☐	#Help	Ask for help	a few seconds ago	8

Customer Care Sample Skill — Save new version — Try it

Intents
Entities ∧
　My Entities
　System Entities
Dialog
Options ∧
　Webhooks
　Disambiguation
　Autocorrection
　Intent Detection
Analytics ∧
　Overview
　User conversations
Versions
Content Catalog

Showing 1–9 of 9 intents 　　1 　1 of 1 pages

7. We can delete all the intents but the last 4, shown below. Click the Try it button on the top right to test whether the Assistant correctly recognizes an Intent.

mple Skill — Save new version — Try it

Create intent

	Intents (4) ▲	Description	Modified ▲	Examples ▼
☐	#General_Greetings	Greetings	2 minutes ago	30
☐	#Goodbye	Good byes	2 minutes ago	6
☐	#Help	Ask for help	2 minutes ago	8
☐	#Thanks	Thanks	2 minutes ago	8

8. Click the Create Intent button to create a new Intent with the name #Get_Contact_Info, and type 5 examples of how you might ask to reach somebody. For example, consider:

- Where is Dr. Smith's office?
- What is Dr. John's phone number?
- Where can I find Dr. Roberts?
- What are Dr. Jim's office hours?
- I need to e-mail Dr. Roberts.

Click the back arrow when you are finished. Then click the Entities → My entities tab on the left. You can delete the current entities, and click the Create entity button to create a new one.

9. Create the entity @professor with the value Dr. Dancik, and synonyms Dancik and Dr. Garrett Dancik. Click Add Value to add the entity, then create a similar entity for Dr. Tasneem.

10. Click the blue back arrow to and then select the dialog tab. Delete everything except for the nodes shown below.
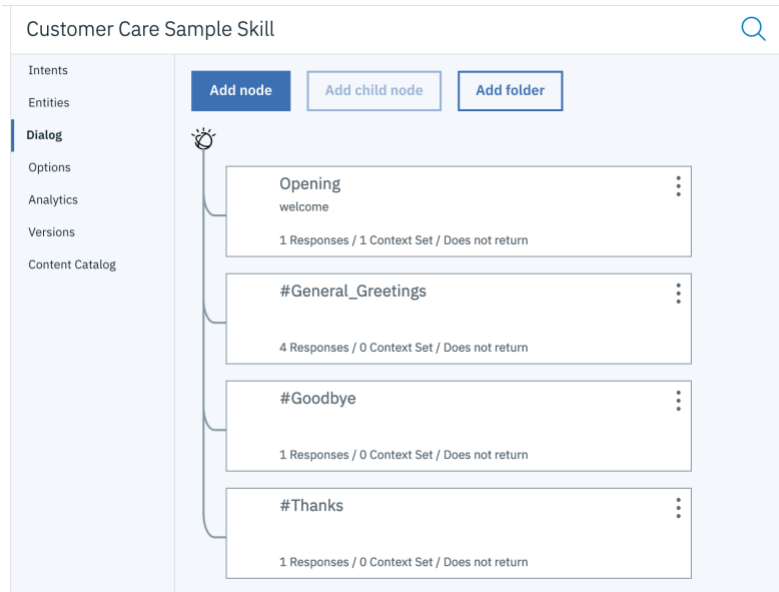
11. Add a node called ContactInfo that responds if the assistant recognizes #Get_Contact_Info. Click the Customize button, turn slots On and click Apply.

Now we can check for @professor, and ask the user to enter one if one was not provided.

12. Click the blue customize slot wheel next to Required, and add an appropriate response if Dr. Dancik is recognized.

Configure slot 1

Found

	IF ASSISTANT RECOGNIZES	RESPOND WITH	
1	@professor:(Dr. Dancik)	Dr. Dancik's contact info --Science R|	⚙ 🗑

13. Click the blue wheel, and configure slot 1 as shown below, and save the changes

## Configure slot 1

When user responds, if intent or entity is

Found

	IF ASSISTANT RECOGNIZES	RESPOND WITH	
1	@professor:(Dr. Dancik)	Dr. Dancik's office hours are...	⚙ 🗑
2	@professor	(not implemented yet)	⚙ 🗑

Add a response ⊕

You may optionally set a response if the intent or entity is Not Found, and can skip the current slot if desired (click the blue wheel under Not Found).
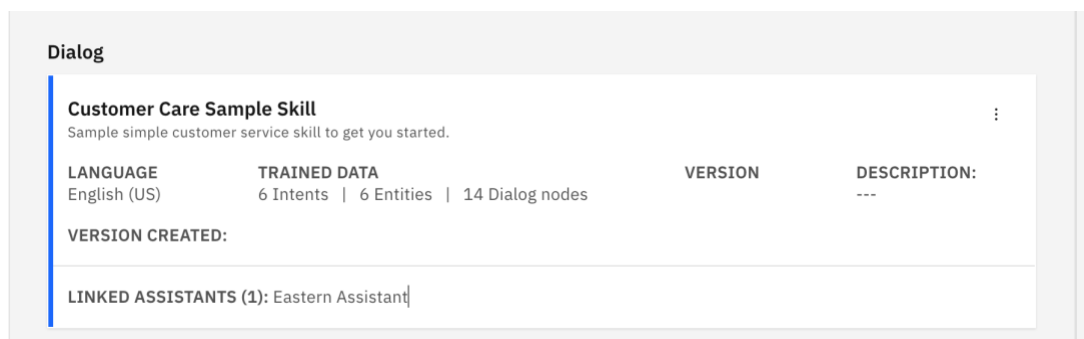
14. Save the changes, then click "Try it" and click "Manage context to Open the Context Editor. Set $professor to null as shown below. This way we start with a null (not specified) value for $professor. You should do this (or click "Clear" to reset any context variables during testing).

$professor ⊖

null

$metadata
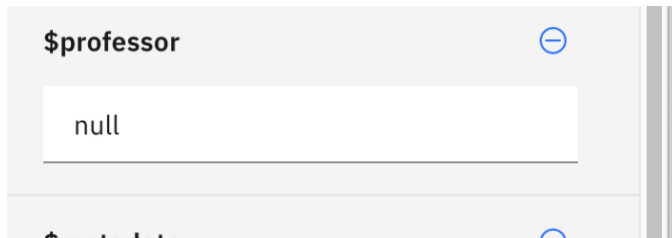
15. Let's try it!

Watson Assistant Assignment

1. Extend the Eastern Assistant to provide contact info (e-mail address and office location) for Dr. Dancik, Dr. Tasneem, and Dr. Gao (you can get this info from https://www.easternct.edu/faculty-directory/index.html?department=computer-science&link=/computer-science/)

2. Add an additional intent so a user can get the office hours for Dr. Dancik, Dr. Tasneem, and Dr. Gao.

3. To export a Skill:

Dialog

Customer Care Sample Skill
Sample simple customer service skill to get you started.

⋮

LANGUAGE	TRAINED DATA	VERSION	DESCRIPTION:
English (US)	6 Intents	6 Entities	14 Dialog nodes		---

VERSION CREATED:

LINKED ASSISTANTS (1): Eastern Assistant

Click the 3 dots next to the Skill to export it, and select Download. This will download the skill as a JSON format, which can be shared with others.s

Note: You are limited to 5 "Skills" in the free plan. If you are not able to create new skills, then you must remove them from the assistant, and then delete the skill. You can view and delete skills by clicking on the 2nd icon on the left hand side of the page (under the chat bubble icon).