

## Lab 4: Create Entities

### Exercise 1: Create, modify, and delete entities

Entities recognize and capture specific pieces of information in the user input. In our flower shop chain chatbot, people asking us about store hours and locations might provide a specific location.

In our fictitious Flower Shop chain, we have stores in Toronto, Montreal, Calgary, and Vancouver. So, when a user asks, Where is your Toronto store? we shouldn't ignore that extra bit of information so that we can take the location into account when formulating a response.

We can start by creating a @location entity for those cities.

1. In your skill, click on **Entities** to enter the entities section.
2. Here, **click the Create entity button**. Choose @location as the entity name (note that the @ symbol is automatically added for you). Leave *Fuzzy Matching* enabled so that we can still detect the city name even if the user misspells it. Finally, **click the Create entity button**.
3. You'll be prompted to enter entity values and possible synonyms. **Enter Montreal** and then **click Add Value** to add this entity value to our entity.

The screenshot shows the IBM Watson Assistant Entities management interface. At the top, there's a header with a back arrow, the entity name '@location', and a 'Last updated: a few seconds ago' timestamp. Below this, the 'Entity name' section shows '@location' in a text box, with a description 'Name your entity to match the category of values that it will detect.' To the right, the 'Fuzzy matching' toggle is set to 'On'. Below the entity name, there are three input fields: 'Value' (containing 'Montreal'), 'Synonyms' (with a dropdown arrow), and a text area for 'Synonyms' (with a placeholder 'Type synonym here, e.g Depo'). At the bottom, there are two buttons: 'Add value' (highlighted with a blue arrow) and 'Recommend synonyms'. Below these buttons, there are tabs for 'Dictionary (0)' and 'Annotation (0) BETA'. At the very bottom, there's a table header with a checkbox, 'Values (0)', and 'Type'.

Generally speaking, you won't need a synonym for cities, but you might include some if the city has common nicknames or if people refer to your store location by its street or neighbourhood in the city. Nearby small cities and towns can also act as synonyms. After all, if people are

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asking about your store in a nearby town, they might be happy with an answer for the nearest city.

Essentially, a synonym is not necessarily the dictionary definition of synonym. Though those are good candidates for synonyms as well when it makes sense. For example, we could have an entity called `@relationship` and the entity value `@relationship:mother` with `mom` as a synonym for that value. When the user enters a question including the word `mom`, Watson will detect `@relationship:mother` (the entity value for that synonym).

4. **Repeat the process** for Calgary and Vancouver. Next, add Toronto as well. But for Toronto, add Warden Avenue as a synonym, as shown in the picture below.

The screenshot shows the Watson Skills Assistant interface for creating an entity. At the top, there's a header with a back arrow, the entity name '@location', a timestamp 'Last updated: a few seconds ago', and icons for download, delete, and search. A 'Try it' button is on the right. Below the header, the 'Entity name' section shows '@location' in a text box. To the right, the 'Fuzzy matching' toggle is set to 'On'. The 'Value' section has a text box with 'Toronto'. The 'Synonyms' section has a text box with 'Warden Avenue' and a '+ Add synonym' button. Below these are 'Add value' and 'Recommend synonyms' buttons. At the bottom, there's a table with two tabs: 'Dictionary (3)' and 'Annotation (0) BETA'. The 'Dictionary (3)' tab is active, showing a table with columns 'Values (3)' and 'Type'. The table lists three entries: 'Calgary' (Type: Synonyms), 'Montreal' (Type: Synonyms), and 'Vancouver' (Type: Synonyms).

Values (3)	Type
Calgary	Synonyms
Montreal	Synonyms
Vancouver	Synonyms

Click on the back-arrow in the top-left to go back to your skill.

Open the *Try it out* panel and wait for Watson to finish training. What happens if you try, hours of operation of your warden ave store in the *Try it out* panel? Even though we haven't entered Warden Avenue spelled exactly as defined in the synonyms, fuzzy matching helps our chatbot detect the right entity value. It's worth noting that entity values can also have patterns, accessible from the *Synonyms* drop-down, as shown in the image below.

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Entity name  
@location

Value name  
Enter value

Add value Show recommendations

Synonyms  
Synonyms  
Patterns


Synonyms  
Add synonym...

Dictionary Annotation BETA

A pattern is an advanced feature that allows you to detect an entity value based not on a specific string (e.g., its synonym) but rather on a specific pattern like a properly formatted phone number, email address, or website address. If you are a programmer, it's worth noting that you specify your pattern as a Regular Expressions (e.g., `^\(?([0-9]{3})\)?[-. ]?([0-9]{3})[-. ]?([0-9]{4})$` to detect that a North American phone number was provided). If you are not a programmer, you can safely ignore this advanced feature. 😊

5. At any time you can click on an entity value to edit its name or synonym. Entities values are allowed to have spaces in them. When you first create an entity value, you're given the option to click on the *Show recommendations* button to select some synonyms from a list provided by Watson.

**Try out this feature.** Click on *Entities*, click on the @location entity, then select the @location:Vancouver entity value by clicking on it. A Watson icon will appear. Click on it as shown in the picture below.

Dictionary (4)		Annotation (0) BETA	
<input type="checkbox"/>	Values (4) ▲	Type	
<input type="checkbox"/>	Calgary	Synonyms	
<input type="checkbox"/>	Montreal	Synonyms	
<input type="checkbox"/>	Toronto	Synonyms	Warden Avenue
	<input type="checkbox"/> Vancouver	Synonyms ▼	Type synonym here, e.g Deposit +

Watson will make a few suggestions. For example, for Vancouver, it will suggest a few nearby cities as well as other major cities in Canada. **Select Burnaby as a synonym** and then **click the Add selected button**. Finally, click on the X icon to close the recommendation section.

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6. Use the *Try it out* panel to **test out these entity values**. Try entering, What are your hours of operation in Montreal and Where is your Burnaby store located? to see how Watson classifies that user question in terms of intents and entities.

7. **Practice creating a new entity of your choice with some values, and then deleting it.** The process is very similar to that of intents.

Inside of *Entities*, you would select the checkmark next to the entity you created and no longer want, and then click the *Delete* button that appears.

Don't delete @location as we'll need it in our chatbot.
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### Exercise 2: Take a look at system entities

System entities allow us to easily detect common specific pieces of information like dates, times, numbers, currencies, etc. They are quite convenient when collecting information from the user.

For example, a restaurant reservation booking chatbot might use @sys-date, @sys-time, and @sys-number to detect the date, time, and party size for the reservation.

In a previous version of this course, we employed the @sys-location and @sys-person entities, but they have since been deprecated.

Generally speaking, it's worth using a system entity if one fits the bill for what you are trying to do. But if it makes your life more difficult due to your specific requirements, you're better off creating your own custom entity as we did in Exercise 1.