

The assistant flow I am creating in this lab exercise is to demonstrate how the Assistant service uses Intents and Entities in a simple chat interface.

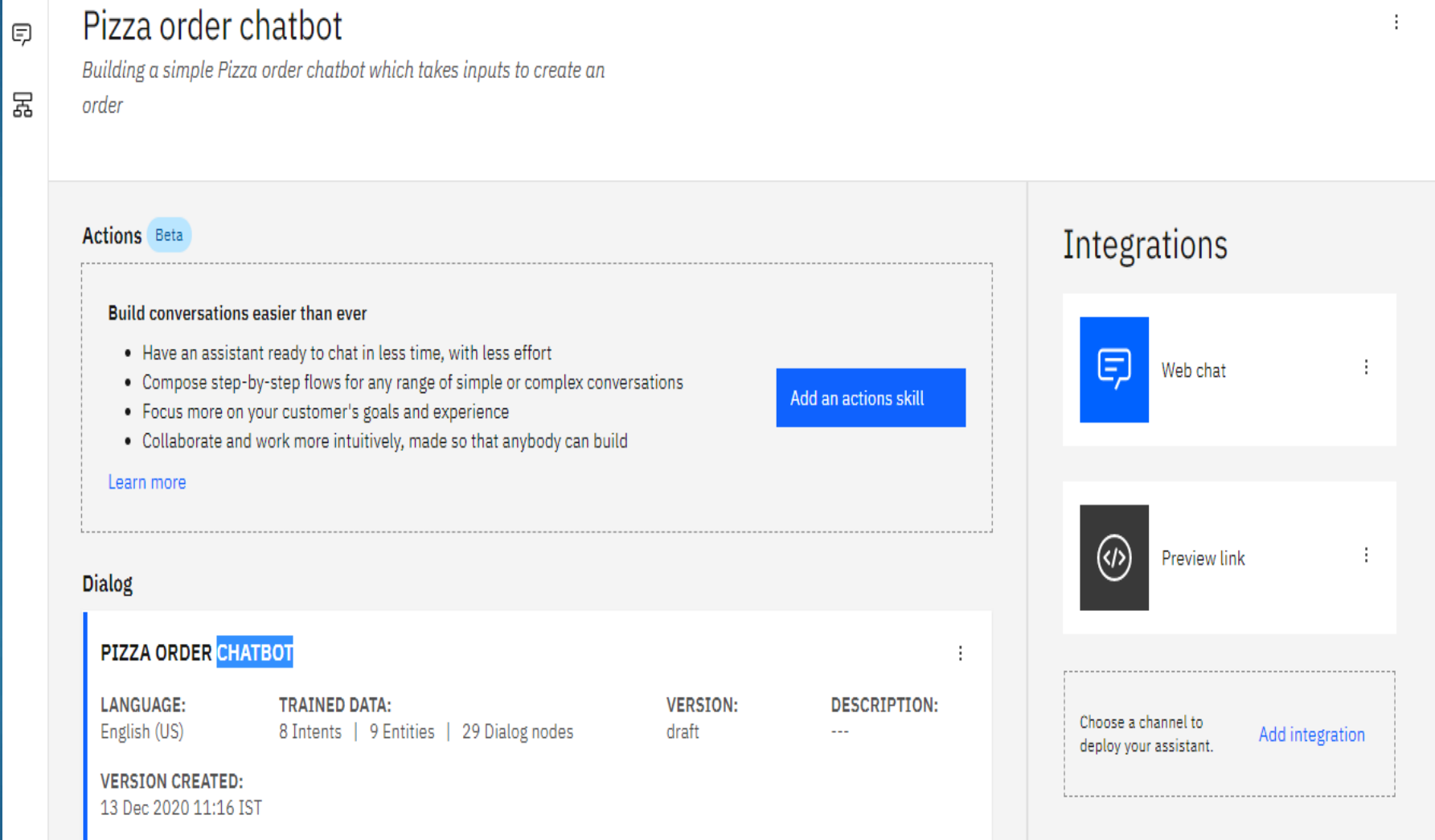
I am creating a simple Pizza order Chabot which takes below inputs to create an order: 1. Size of Pizza (small, medium, large) 2. Toppings (onion, tomato, etc.).

The Watson Assistant layer application using the Assistant Dialog skill, can take appropriate action based on that information. Usually, a combination of intent and entity results in a separate response or action.

# Watson Assistant Service:

Created my Assistant Service Instance. Accessed the IBM Cloud console by entering the URL and logging-in with my IBM Cloud ID. Located Assistant service by starting to type "assist..." into the search field. Selected Watson Assistant. Selected Lite option. Located and clicked and Created Watson Assistant. Typed a unique name and optional description, (i.e. Pizza order chatbot: Building a simple Pizza order Chabot which takes inputs to create an order) keeping default of Enable Preview Link and click Create assistant.

Located and clicked Add dialog skill. Typed a unique name and description and clicked Create dialog skill. Clicked on the Skill name to launch the tooling



**Pizza order chatbot**

*Building a simple Pizza order chatbot which takes inputs to create an order*

**Actions** Beta

Build conversations easier than ever

- Have an assistant ready to chat in less time, with less effort
- Compose step-by-step flows for any range of simple or complex conversations
- Focus more on your customer's goals and experience
- Collaborate and work more intuitively, made so that anybody can build

[Learn more](#)

[Add an actions skill](#)

**Dialog**

**PIZZA ORDER CHATBOT**

<b>LANGUAGE:</b> English (US)	<b>TRAINED DATA:</b> 8 Intents   9 Entities   29 Dialog nodes	<b>VERSION:</b> draft	<b>DESCRIPTION:</b> ---
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**VERSION CREATED:**  
13 Dec 2020 11:16 IST

**Integrations**

[Web chat](#)

[Preview link](#)

Choose a channel to deploy your assistant. [Add integration](#)

**Assistant Service Instance:** An Assistant service instance is created on the IBM Cloud console. The procedure is identical to that of creating other Watson services.

**Assistant:** An Assistant is the application layer that interacts with your end users.

**Dialog skill:** A skill is a unique development and test environment where business and technical users can update the logic for their assistant system. When calling the Watson Assistant Service API, you must specify a Skill ID. The service credentials for your service file will remain across all 5 skills (20 skills for Standard plan) per file.

**Search Assistant** allows to quickly find information within the Intent, Entities and Dialog pages.

## Domain Specific Intents:

In the Intents tab clicked on 'Create Intent' button to create new intents.

created the following intents:

**#Intent name-Alerts-Account\_pizza-order;User examples (3)-I want pizza delivered, take my pizza order, what are your timings for pizza orders.**

**#Customer\_Care\_Store\_Hours;User examples (3)-opened?,closed?,Are you open on holidays?.**

**#Customer\_Care\_Store\_Location;**

**#General\_Greetings;User examples (3)-good day, good morning, good to see you.**

IBM Watson Assistant Plus trial | 22 days left | Upgrade

Learning center ?

PIZZA ORDER CHATBOT | Version: Development

Save new version Try it

Intents

Entities

Dialog

Options

Analytics

Versions

Content Catalog

Recommendation sources Intent recommendations Create intent +

<input type="checkbox"/> Intents (8) ↑	Description	Modified ↑↓	Conflicts ↑↓	Examples ↑↓
<input type="checkbox"/> #Alerts-Account_pizza-order		19 hours ago		3
<input type="checkbox"/> #Credit_Card_Info		20 hours ago		0
<input type="checkbox"/> #Customer_Care_Appointments		20 hours ago		0
<input type="checkbox"/> #Customer_Care_Cancel_order		20 hours ago		0
<input type="checkbox"/> #Customer_Care_Store_Hours		17 hours ago		3
<input type="checkbox"/> #Customer_Care_Store_Location		20 hours ago		0
<input type="checkbox"/> #General_Greetings	Greet the bot.	18 hours ago		3

Showing 1-8 of 8 intents

1 1 of 1 pages

## Entities in Watson Assistant:

Switched to the Entities tab.

In the Entities tab clicked on 'Create Intent' button to create new Entities.

created the following Entities:

1)Entity name-@holidays; Values (2)-Thursday, Sunday(synonyms-weekend)

2)Entity name-@location; Values (3)-bellandur,indiranagar,jaynagar

3)Entity name-@mode-of\_delivery;Values (2)-cash on delivery, online payment(synonyms-online)

4)Entity name-@pizza\_size;Values (5)-large,medium,small,ultra large, ultra mini

5)Entity name-@toppings; Values (6)-BBQ Meatlovers,cheese,Garlic butter prawns and chilli,onion,Sausage & Kale, tomato

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PIZZA ORDER CHATBOT Version: Development [Save new version](#) [Try it](#)

Intents  
Entities  
My entities  
System entities  
Dialog  
Options  
Analytics  
Versions  
Content Catalog

<input type="checkbox"/>	Entity (6) ↑	Values	Modified ↑↓
<input type="checkbox"/>	@holidays	sunday, Thursday	19 hours ago
<input type="checkbox"/>	@location	bellandur, indiranagar, jaynagar	20 hours ago
<input type="checkbox"/>	@mode-of_delivery	online payment, cash on delivery	18 hours ago
<input type="checkbox"/>	@phone	india phone	20 hours ago
<input type="checkbox"/>	@pizza_size	medium, ultra mini, ultra large, large, small	20 hours ago
<input type="checkbox"/>	@toppings	tomato, BBQ Meatlovers, Garlic butter prawns and chilli, onion, cheese, Sausage & ...	20 hours ago

Showing 1–6 of 6 entities 1 1 of 1 pages

## Planning Responses (Using Core Intents and Entities):

A response is what the Assistant service returns to the end-user based on the intents and entities it recognizes in inputs. Not all answers are text; some are actions.

Ground Truth is the grouping of end-user examples with intents. Watson Assistant service uses the Ground Truth mapping to train its cognitive models. The utterances in Ground Truth are collected from end users in line with question collection best practices.

The dialog uses the intents and entities, plus context from the application, to interact with the user and ultimately provide a useful response. The response might be the answer to a question, guide a user through a process, or execute a command.

The intent and entity might be enough information to identify the correct response, or the dialog might ask the user for more input that is needed to respond correctly.

### Conditions

we can use one or more of the following artifacts in any combination to define a condition:

**Intent:** The simplest condition is a single intent. The node is used if the user's input maps to that intent. we can Use the syntax `#{intent-name}`. For example, `#weather` checks if the intent detected in the user input is weather. If so, the node is processed.

**Entity:** The node is used when any value or synonym for the entity is recognized in the user input. We can Use the syntax `@{entity name}`.

**Entity value:** The node is used if the entity value is detected in the user input. we can Use the syntax `@{entity name}:{value}`. we can Specify a defined value for the entity, not a synonym.

**Context variable:** The node is used if the context variable equation that you specify is true. We can Use the syntax `$variable_name:value` or `$variable name == 'value'`

**Special conditions:** anything else, conversation start, false, irrelevant, true, welcome.

**Good dialog design should reflect the solution's positioning to create a coherent and compelling solution that behaves as envisaged by you and the client.**

**If the dialog design does not consistently reflect the positioning, the solution is less likely to achieve its purpose, deliver value, or meet the client's expectations, so don't take the easy option!**

**To Reflect the positioning, the dialog design must create behaviors that:**

- 1. Help achieve the defined purpose**
- 2. Consistently express the identified viewpoint**
- 3. Reflect the specified proactivity**
- 4. Reflect the tone and personality.**



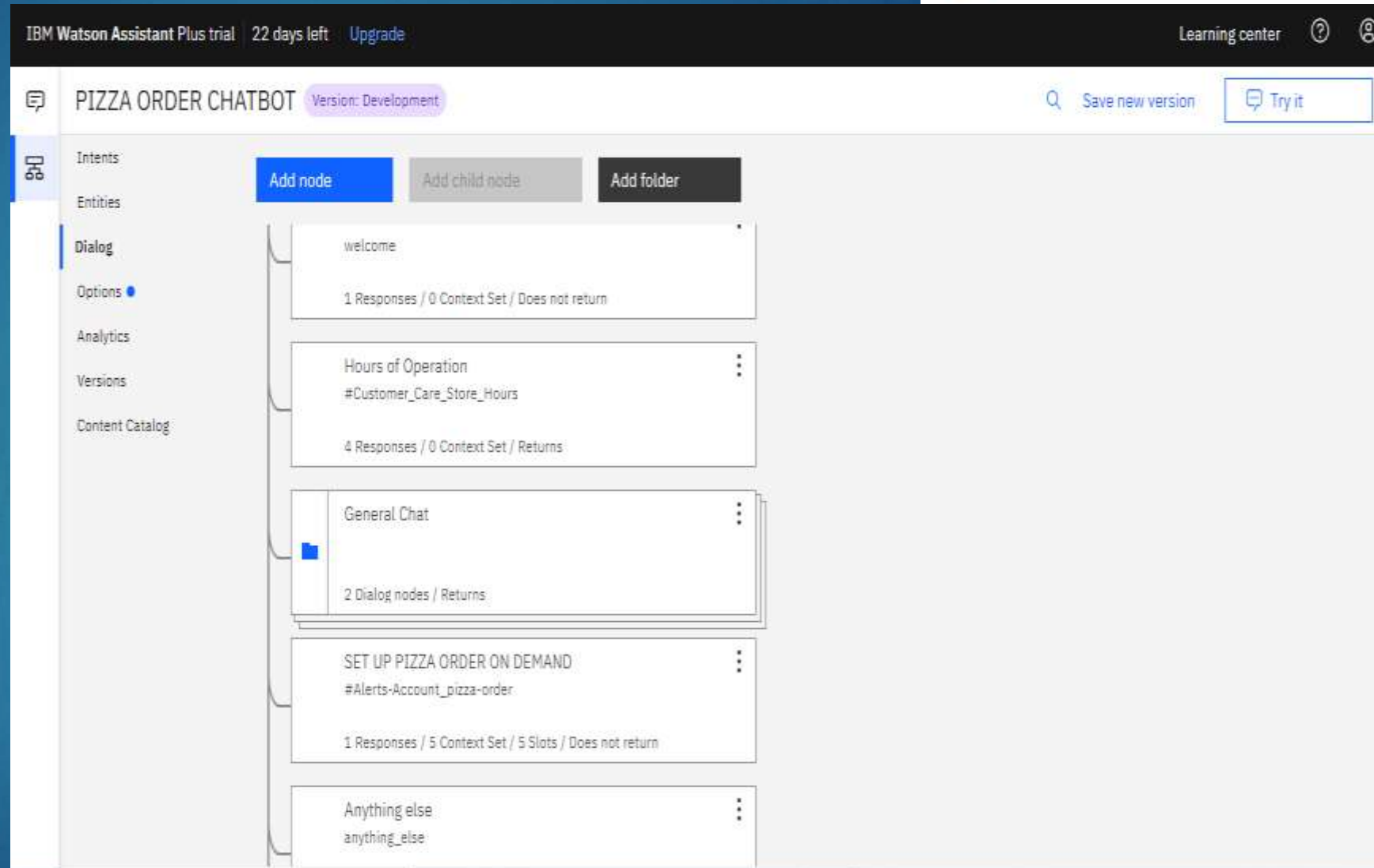
## Create Dialog in Watson Assistant:

Switched to the Dialog tab.

Clicked Create.

Two nodes will automatically get created :

- **Welcome** - The welcome node is the first node in the dialog flow – typically a greeting message.
- **Anything else** - The anything else node gets hit if the system has low confidence in the intent, or if no other dialog conditions matched.



The screenshot displays the IBM Watson Assistant Plus trial interface. At the top, it shows '22 days left' and an 'Upgrade' button. The main header for the chatbot is 'PIZZA ORDER CHATBOT' with a 'Version: Development' tag. On the left, a sidebar lists navigation options: Intents, Entities, Dialog (selected), Options, Analytics, Versions, and Content Catalog. The main area shows the 'Dialog' tab with three buttons: 'Add node' (blue), 'Add child node' (grey), and 'Add folder' (black). Below these buttons, a list of dialog nodes is shown:

- welcome**: 1 Responses / 0 Context Set / Does not return
- Hours of Operation**: #Customer\_Care\_Store\_Hours, 4 Responses / 0 Context Set / Returns
- General Chat**: 2 Dialog nodes / Returns
- SET UP PIZZA ORDER ON DEMAND**: #Alerts-Account\_pizza-order, 1 Responses / 5 Context Set / 5 Slots / Does not return
- Anything else**: anything\_else

## Create Dialog in Watson Assistant:

Created a Multi-conditional Response Node

Added a node under the welcome node

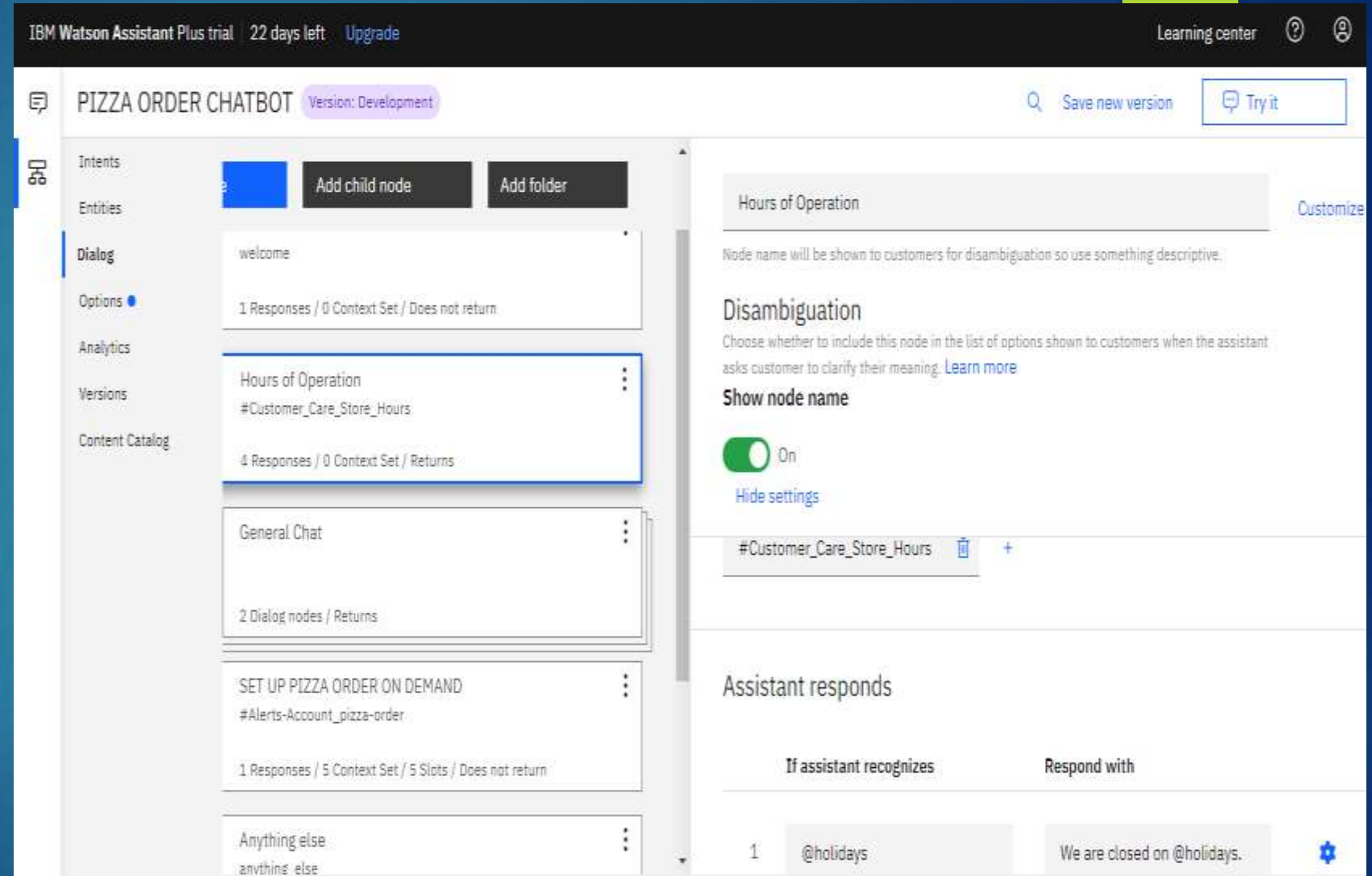
Named the node Hours of Operation

Condition on the #Customer\_Care\_Store\_Hours intent

Clicked on Customize.

Enabled Multiple conditioned responses

Clicked Apply



The screenshot shows the IBM Watson Assistant Plus trial interface for a chatbot named "PIZZA ORDER CHATBOT". The left sidebar contains navigation options: Intents, Entities, Dialog, Options, Analytics, Versions, and Content Catalog. The "Dialog" section is active, showing a list of nodes. The "welcome" node is selected, and a new node "Hours of Operation" has been added under it. The "Hours of Operation" node is highlighted with a blue border. The right pane shows the configuration for the "Hours of Operation" node, including a "Disambiguation" section with a toggle set to "On" and a "Show node name" section. The "Assistant responds" section shows a response for the intent "@holidays": "We are closed on @holidays."

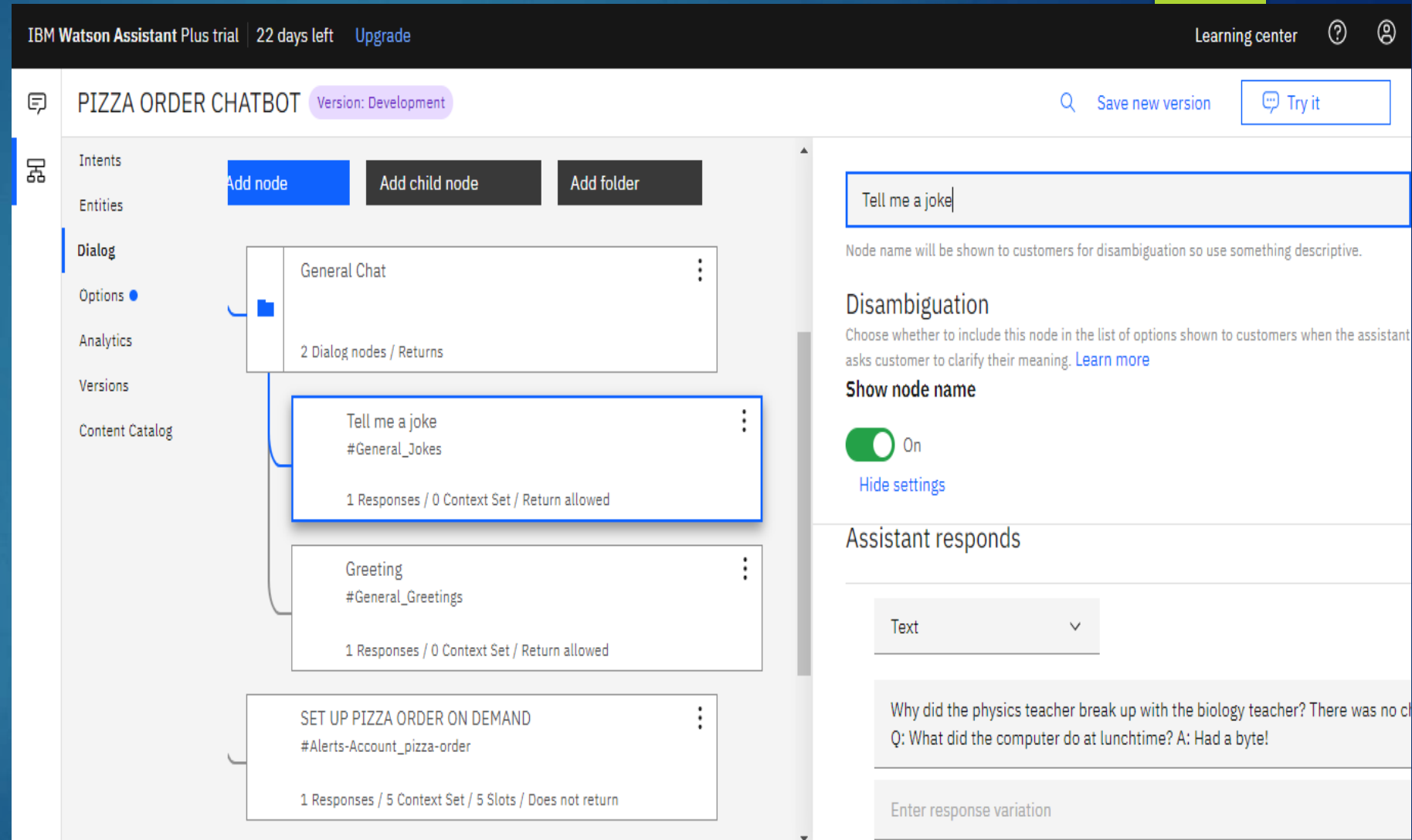
Added following responses for the node Hours of Operation as shown in the snapshots

Command	Description
@holidays	We are closed on @holidays.
@sys-date.reformatDateTime("EEEEEE") == "Monday"    @sys-date.reformatDateTime("EEEEEE") == "Tuesday"    @sys-date.reformatDateTime("EEEEEE") == "Wednesday"    @sys-date.reformatDateTime("EEEEEE") == "Thursday"    @sys-date.reformatDateTime("EEEEEE") == "Friday"	We are open on <? @sys-date.reformatDateTime("EEEEEE") ?> from 10am until 8pm.
@sys-date.reformatDateTime("EEEEEE") == "Saturday"    @sys-date.reformatDateTime("EEEEEE") == "Sunday"	Our hours on <? @sys-date.reformatDateTime("EEEEEE") ?> are 11am to 6pm.
True	Our hours are Monday to Friday 10am to 8pm and Friday and Saturday 11am to 6pm.

## Create Dialog in Watson Assistant:

Added a  
folder.

Called the  
folder  
General  
Chat.



IBM Watson Assistant Plus trial | 22 days left | [Upgrade](#) | [Learning center](#) | [?](#) | [?](#)

PIZZA ORDER CHATBOT | Version: Development | [Save new version](#) | [Try it](#)

Intents | Entities | **Dialog** | Options | Analytics | Versions | Content Catalog

[Add node](#) | [Add child node](#) | [Add folder](#)

General Chat  
2 Dialog nodes / Returns

Tell me a joke  
#General\_Jokes  
1 Responses / 0 Context Set / Return allowed

Greeting  
#General\_Greetings  
1 Responses / 0 Context Set / Return allowed

SET UP PIZZA ORDER ON DEMAND  
#Alerts-Account\_pizza-order  
1 Responses / 5 Context Set / 5 Slots / Does not return

Node name will be shown to customers for disambiguation so use something descriptive.

**Disambiguation**  
Choose whether to include this node in the list of options shown to customers when the assistant asks customer to clarify their meaning. [Learn more](#)

**Show node name**  
☒ On  
[Hide settings](#)

**Assistant responds**

Text

Why did the physics teacher break up with the biology teacher? There was no cl  
Q: What did the computer do at lunchtime? A: Had a byte!

Enter response variation

Created the Nodes in the table below for the added folder General Chat.

Configured the Slot Responses.

At  
On

Node Name	Condition	Response
1.		
Greeting	General_Greetings	I'm looking forward to helping you today. What can I do for you?
Tell me a joke	General_Jokes	Why did the physics teacher break up with the biology teacher? There was no chemistry.  Q: What did the computer do at lunchtime? A: Had a byte!



## Create Dialog in Watson Assistant:

Made a SET UP PIZZA ORDER ON DEMAND node

Added a node under the General Chat Node

Named the node SET UP PIZZA ORDER ON DEMAND

Selected Customize

– Enabled Slots with Prompt for everything

– Enabled multiple conditioned responses

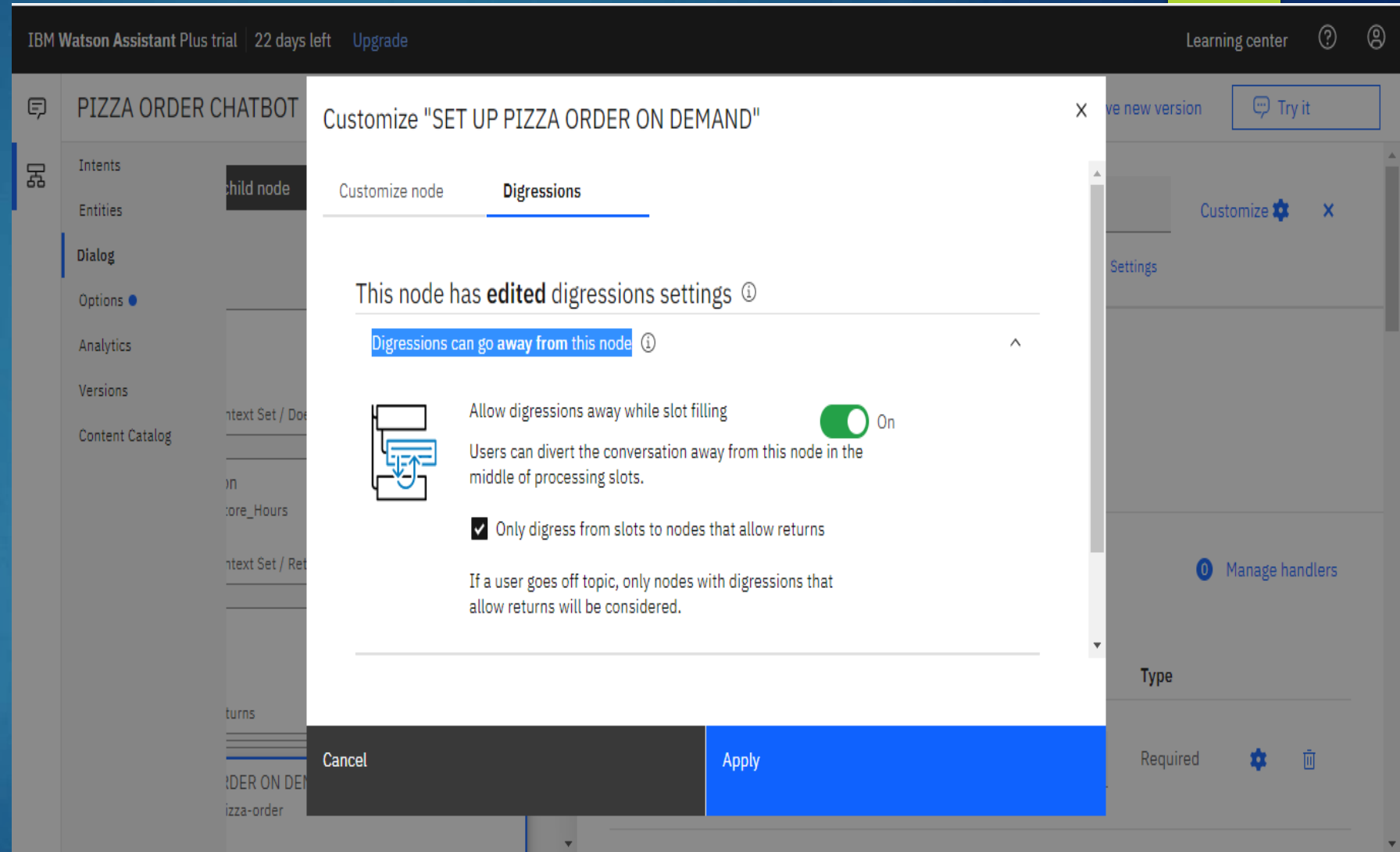
– Selected Apply

Selected Customize, Digressions

– Selected Allow digressions away while slot filling

– Selected only digress from slots to nodes that allow returns

– Selected Apply



The screenshot displays the IBM Watson Assistant Plus trial interface. The main window is titled "PIZZA ORDER CHATBOT" and shows a sidebar with navigation options: Intents, Entities, Dialog, Options, Analytics, Versions, and Content Catalog. The "Dialog" section is selected, and a node named "SET UP PIZZA ORDER ON DEMAND" is highlighted. A modal window titled "Customize 'SET UP PIZZA ORDER ON DEMAND'" is open, showing the "Digressions" tab. The modal contains the following information:

- Header: "Customize 'SET UP PIZZA ORDER ON DEMAND'"
- Sub-headers: "Customize node" and "Digressions" (selected).
- Message: "This node has **edited** digressions settings ⓘ"
- Section: "Digressions can go away from this node ⓘ"
- Toggle: "Allow digressions away while slot filling" is turned **On**.
- Description: "Users can divert the conversation away from this node in the middle of processing slots."
- Checkbox: "Only digress from slots to nodes that allow returns" is checked.
- Footnote: "If a user goes off topic, only nodes with digressions that allow returns will be considered."
- Buttons: "Cancel" and "Apply".

## Create Dialog in Watson Assistant:

Configured the Slots for SET UP PIZZA ORDER ON DEMAND node

Condition on # Alerts-Account\_pizza-order

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PIZZA ORDER CHATBOT Version: Development Save new version Try it

Intents Entities Dialog Options Analytics Versions Content Catalog

Add node Add child node Add folder

Welcome  
welcome  
1 Responses / 0 Context Set / Does not return

Hours of Operation  
#Customer\_Care\_Store\_Hours  
4 Responses / 0 Context Set / Returns

General Chat  
2 Dialog nodes / Returns

SET UP PIZZA ORDER ON DEMAND  
#Alerts-Account\_pizza-order

Node name will be shown to customers for disambiguation so use something descriptive Settings

If assistant recognizes

#Alerts-Account\_pizza-order

Then check for

	Check for	Save it as	If not present, ask	Type
1	@location	\$location	Where are you	Required
2	@sys-date	\$date	when you want	Required

## Create Dialog in Watson Assistant:

Added the slots for SET UP PIZZA ORDER ON DEMAND node as shown in the snapshots.

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Learning center ?

### PIZZA ORDER CHATBOT

Version: Development

Search Save new version Try it

- Intents
- Entities
- Dialog**
- Options
- Analytics
- Versions
- Content Catalog

Add child node Add folder

General Chat  
2 Dialog nodes / Returns

Tell me a joke  
#General\_Jokes  
1 Responses / 0 Context Set / Return allowed

Greeting  
#General\_Greetings  
1 Responses / 0 Context Set / Return allowed

**SET UP PIZZA ORDER ON DEMAND**  
#Alerts-Account\_pizza-order  
1 Responses / 5 Context Set / 5 Slots / Does not return

SET UP PIZZA ORDER ON DEMAND

Node name will be shown to customers for disambiguation so use something descriptive. Settings

1	@location	\$location	Where are you	Required
2	@sys-date	\$date	when you war	Required
3	@mode-of_de	\$mode_of_del	will you pay o	Required
4	@pizza_size	\$pizza_size	will you order	Required
5	@toppings	\$toppings	what toppings	Required



Configured the Slot Responses.

Added the following responses to SET UP PIZZA ORDER ON DEMAND slot as shown in the snapshot.

1. Response	Condition	Response
1	If no slots are pre-filled, ask this first:	<b>Okay I will help you setup a Pizza order. I just need a few pieces of information from you about your pizza order. First, where are you located?</b>
2	True	<b>Your pizza oder has been taken.your order will be delivered to your location at \$location on \$date. Thank you.</b>

## Create Dialog in Watson Assistant:

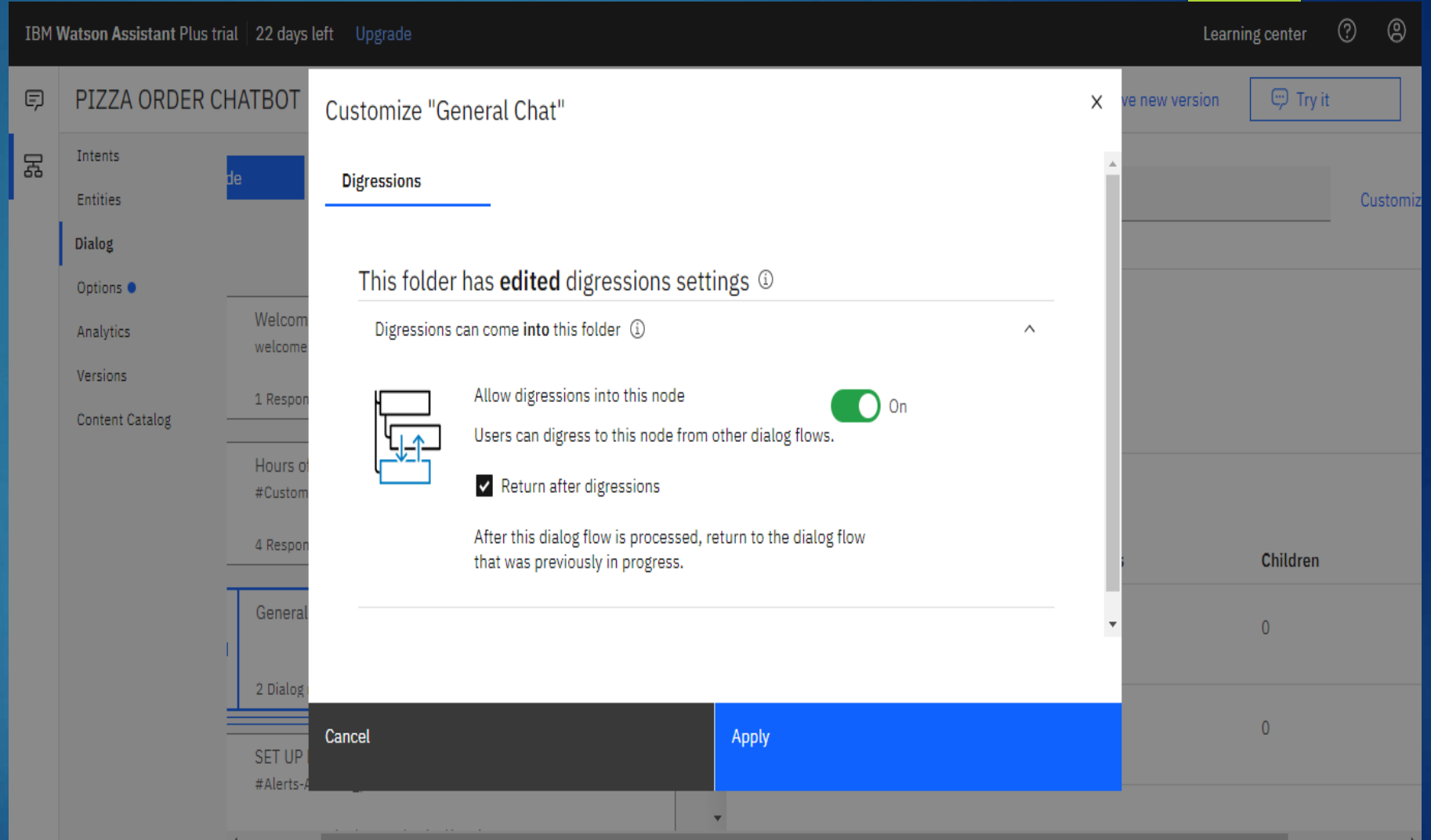
### Digressions:

Digressions allows for answering a common question outside of a business process and then return the user to where they left off in the process.

Opened the General Chat folder

Selected Customize and Turned on "Digression" as well as check the "Return after digression" option.

repeated the same steps for other nodes as well .



The screenshot shows the IBM Watson Assistant Plus trial interface. The left sidebar contains a navigation menu with options: Intents, Entities, Dialog, Options, Analytics, Versions, and Content Catalog. The main area displays the 'PIZZA ORDER CHATBOT' configuration. A modal window titled 'Customize "General Chat"' is open, showing the 'Digressions' tab. The modal indicates that the folder has edited digressions settings. It includes a toggle switch for 'Allow digressions into this node' which is turned 'On', and a checked checkbox for 'Return after digressions'. A description states: 'After this dialog flow is processed, return to the dialog flow that was previously in progress.' At the bottom of the modal are 'Cancel' and 'Apply' buttons. The background interface shows a list of dialog nodes including 'Welcome', 'Hours of operation', 'General chat', and 'Children'.

Slots are a configuration option within dialog to collect multiple pieces of information as needed to complete a complex task for a user, such as making a dinner reservation. Software products, unit testing etc. are some of the automated processes.

Digressions allows for answering a common question outside of a business process and then return the user to where they left off in the process.

we do not define the start and end of a digression. The user is entirely in control of the digression flow at run time. we only specify how each node should or should not participate in a user-led digression. For each node, we configure whether:

a digression can start from and leave the node. Digression that starts elsewhere can target and enter the node. A digression that starts elsewhere and enters the node must return to the interrupted dialog flow after the current dialog flow is completed

## Versioning and testing my Assistant in Watson Assistant:

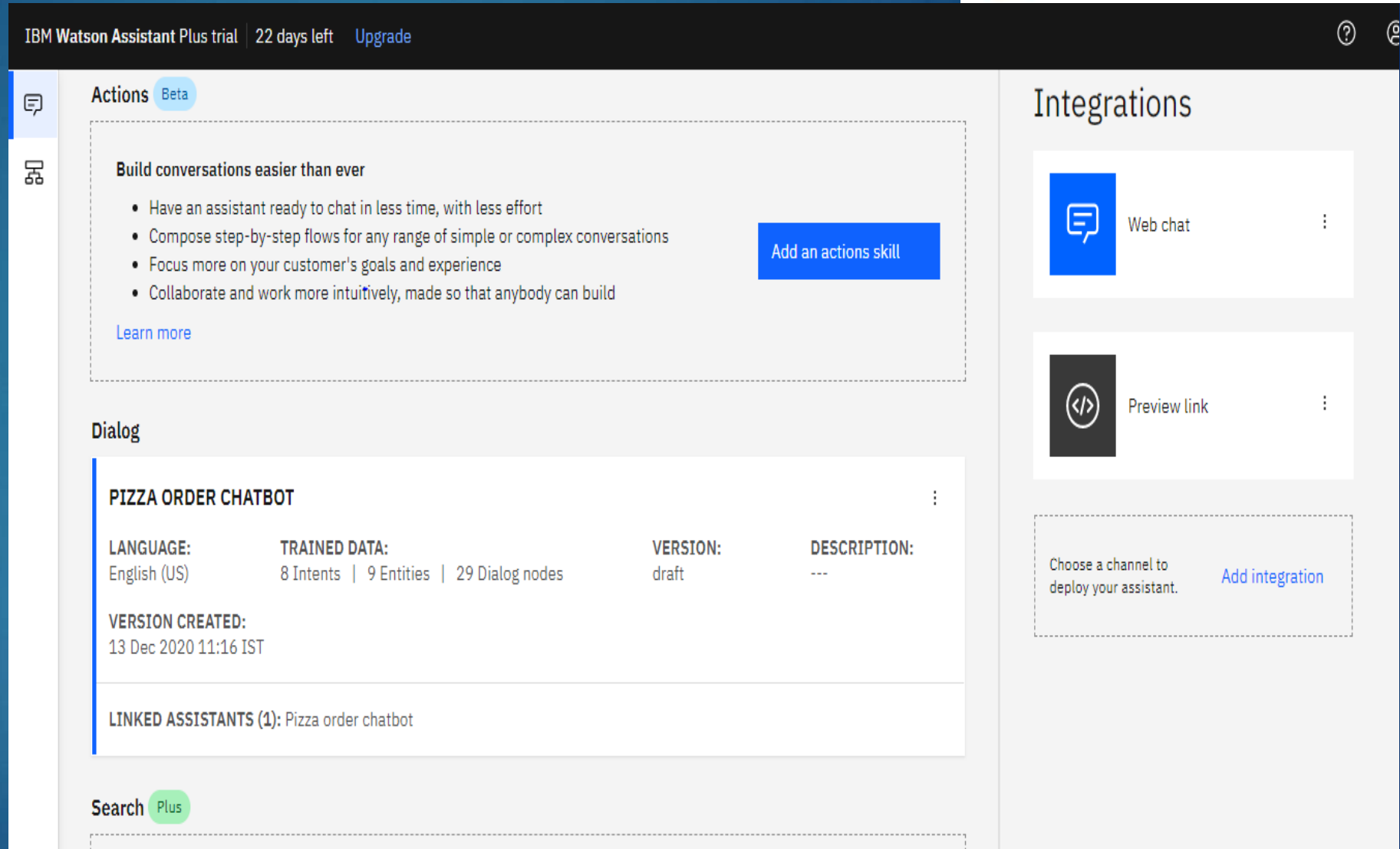
Navigated to Assistants  
in Left hand pane

Selected my Assistant

Clicked on Preview Link

Clicked on the Link to  
Try it

Tried out my Assistant!



IBM Watson Assistant Plus trial | 22 days left | [Upgrade](#)

**Actions** Beta

Build conversations easier than ever

- Have an assistant ready to chat in less time, with less effort
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- Focus more on your customer's goals and experience
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**Dialog**

**PIZZA ORDER CHATBOT**

LANGUAGE:	TRAINED DATA:	VERSION:	DESCRIPTION:
English (US)	8 Intents   9 Entities   29 Dialog nodes	draft	---

**VERSION CREATED:**  
13 Dec 2020 11:16 IST

**LINKED ASSISTANTS (1):** Pizza order chatbot

**Search** Plus

**Integrations**

Web chat

Preview link

Choose a channel to deploy your assistant. [Add integration](#)

## Versioning and testing my Assistant in Watson Assistant:

**Tried it out and sharing the link of the assistant embedded in the web page as below:**

### Preview link integration

Integration name

Preview link

Description

A public link you can share to test your assistant outside of the tooling.

### Try it out and share the link

Use of the assistant embedded in this web page incurs billing charges. ⓘ

<https://web-chat.global.assistant.watson.cloud.ibm.com/preview.html?region=us-south&integrationID=affa2de7-608c-43df-aa54-ba7b84db78f1&serviceInstanceID=d6a0423c-5760-4b0b-a2a0-04b01bd986b5>

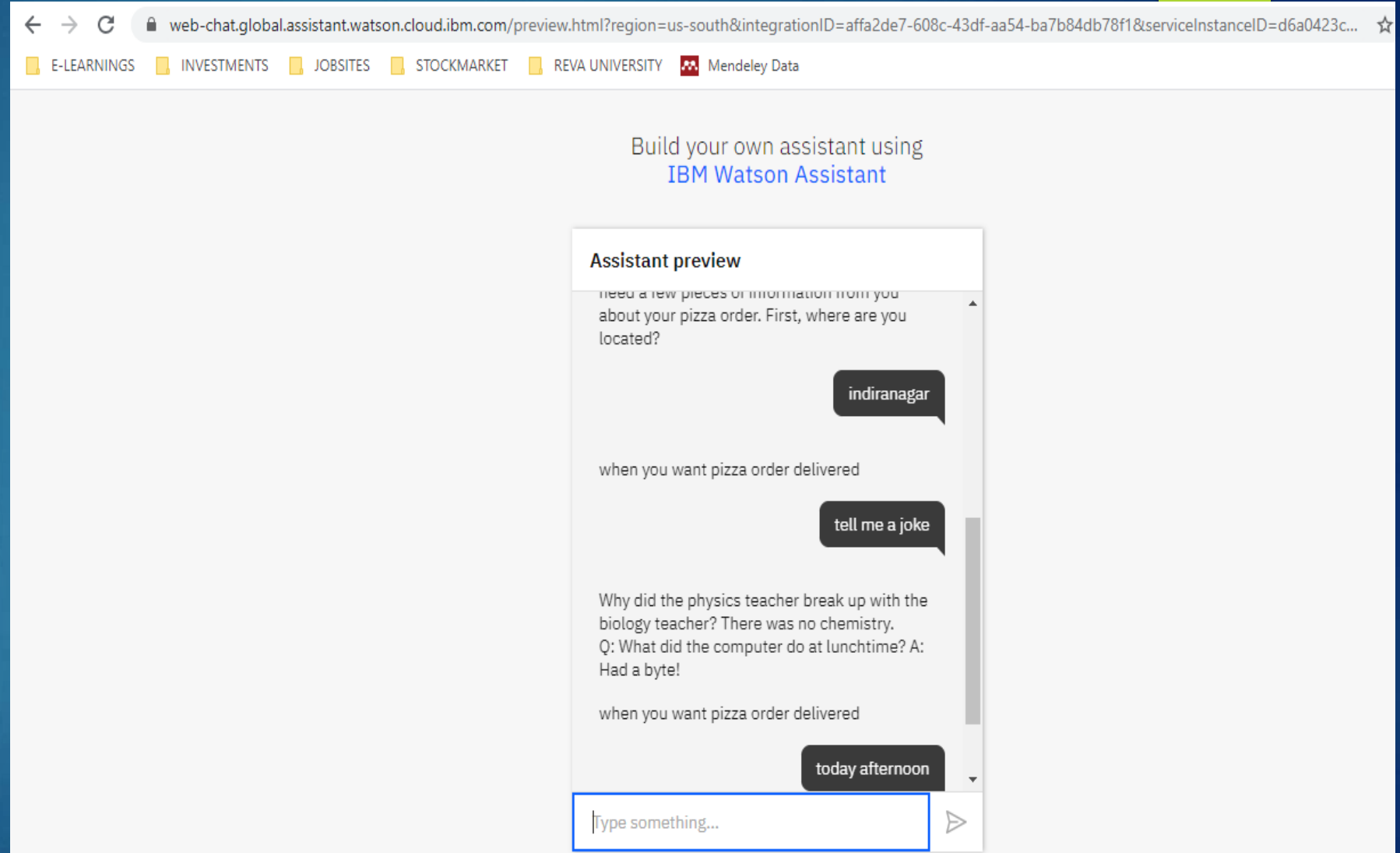
Save changes

<https://web-chat.global.assistant.watson.cloud.ibm.com/preview.html?region=us-south&integrationID=affa2de7-608c-43df-aa54-ba7b84db78f1&serviceInstanceID=d6a0423c-5760-4b0b-a2a0-04b01bd986b5>

## Versioning and testing my Assistant in Watson Assistant:

Deploying the  
bot using  
preview link.

Allowing  
digression  
during the order  
to answer  
general  
questions.



The screenshot shows a web browser window with the URL `web-chat.global.assistant.watson.cloud.ibm.com/preview.html?region=us-south&integrationID=affa2de7-608c-43df-aa54-ba7b84db78f1&serviceInstanceID=d6a0423c...`. The browser's address bar and tabs are visible, with tabs for 'E-LEARNINGS', 'INVESTMENTS', 'JOBSITES', 'STOCKMARKET', 'REVA UNIVERSITY', and 'Mendeley Data'. The main content area displays the 'Assistant preview' interface. At the top, it says 'Build your own assistant using IBM Watson Assistant'. Below this, a chat window titled 'Assistant preview' shows a conversation. The assistant's message is: 'need a few pieces of information from you about your pizza order. First, where are you located?'. The user's response is 'indiranagar'. The assistant's next message is 'when you want pizza order delivered'. The user's response is 'tell me a joke'. The assistant's message is: 'Why did the physics teacher break up with the biology teacher? There was no chemistry. Q: What did the computer do at lunchtime? A: Had a byte!'. The user's response is 'when you want pizza order delivered'. The assistant's final message is 'today afternoon'. At the bottom of the chat window is a text input field with the placeholder 'Type something...' and a send button.

## Versioning and testing my Assistant in Watson Assistant:

**Built a simple  
Pizza order  
chatbot which  
takes below  
inputs to create  
an order: 1. Size of  
Pizza (small,  
medium,  
large) 2. Toppings  
(onion, tomato,  
etc.)**

web-chat.global.assistant.watson.cloud.ibm.com/preview.html?region=us-south&integrationID=affa2de7-608c-43df-aa54-ba7b84db78f1&serviceInstanceID=d6a0423c...

E-LEARNINGS INVESTMENTS JOBSITES STOCKMARKET REVA UNIVERSITY Mendeley Data

Build your own assistant using  
[IBM Watson Assistant](#)

**Assistant preview**

will you pay online or cash on delivery

online

will you order small, medium, large, ultra large, ultra mini pizza

small

what toppings you would like to have. we offer BBQ Meatlovers, cheese, Garlic butter prawns and chilli, onion, Sausage & Kale and tomato toppings.

onion

Your pizza order has been taken. your order will

Type something...