

Project Requirement and Specification
on
E-Commerce Chatbot
(CSE V Semester Mini project IBM-501)
2020-2021



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1. About Project:

1.1 CHATBOT:

A **chatbot** is a software application used to conduct an on-line chat conversation via text or text-to-speech, in lieu of providing direct contact with a live human agent. Designed to convincingly simulate the way a human would behave as a conversational partner, chatbot systems typically require continuous tuning and testing, and many in production remain unable to adequately converse or pass the industry standard Turing test. The term "Chatterbot" was originally coined by Michael Mauldin (creator of the first Verbot) in 1994 to describe these conversational programs.

Chatbots are used in dialog systems for various purposes including customer service, request routing, or for information gathering. While some chatbot applications use extensive word-classification processes, natural language processors, and sophisticated AI, others simply scan for general keywords and generate responses using common phrases obtained from an associated library or database.

Most chatbots are accessed on-line via website popups or through virtual assistants. They can be classified into usage categories that include: commerce (e-commerce via chat), education, entertainment, finance, health, news, and productivity.

1.2 E-Commerce:

E-commerce (electronic commerce) is the activity of electronically buying or selling of products on online services or over the Internet. Electronic commerce draws on technologies such as mobile commerce, electronic funds transfer, supply chain management, Internet marketing, online transaction processing, electronic data interchange (EDI), inventory management systems, and automated data collection systems. E-commerce is in turn driven by the technological advances of the semiconductor industry, and is the largest sector of the electronics industry.

Modern electronic commerce typically uses the World Wide Web for at least one part of the transaction's life cycle although it may also use other technologies such as e-mail. Typical e-commerce transactions include the purchase of online books (such as Amazon) and music purchases (music download in the form of digital distribution such as iTunes Store), and to a less extent, customized/personalized online liquor store inventory services. There are three areas of e-commerce: online retailing, electronic markets, and online auctions. E-commerce is supported by electronic business

1.3 IBM WATSONASSISTANT:

Watson Assistant is IBM's AI product that lets you build, train, and deploy conversational interactions into any application, device or channel.

Most chatbots try to mimic human interactions, which can frustrate users when a misunderstanding arises. Watson Assistant is more. It knows when to search for an answer from a knowledge base, when to ask for clarity and when to direct users to a human. Watson Assistant can be deployed in any cloud or on-premises environment – meaning smarter AI is finally available wherever you need it.

1.3.1 Assistants

An **assistant** helps your customers complete tasks and get information faster. It may clarify requests, search for answers from a knowledge base, and can also direct your customer to a human if needed.

The screenshot displays the IBM Cloud console interface for managing a Watson Assistant. At the top, the navigation bar includes the IBM Cloud logo, a search bar, and links to Catalog, Docs, Support, and Manage. The main header shows the resource name 'Watson Assistant-f8', its status 'Active', and options to 'Add tags' or view 'Details'. A sidebar on the left lists management options: 'Manage' (selected), 'Service credentials', 'Plan', and 'Connections'. The main content area is divided into two sections. The top section, 'Start by launching the tool', contains buttons for 'Launch Watson Assistant', 'Getting started tutorial', 'API reference', and an 'Upgrade' button. The bottom section, 'Credentials', shows the 'API key' field with a 'Download' button and a 'Show credentials' button. The 'URL' field displays a long alphanumeric string. A vertical 'FEEDBACK' button is located on the right side of the console.

IBM Cloud Search resources and offerings... Catalog Docs Support Manage Shivam Sharma...

Resource list / Watson Assistant-f8 Active Add tags Details Actions...

Manage

Service credentials

Plan

Connections

Start by launching the tool

Launch Watson Assistant Getting started tutorial API reference Upgrade

Plan Lite

Credentials

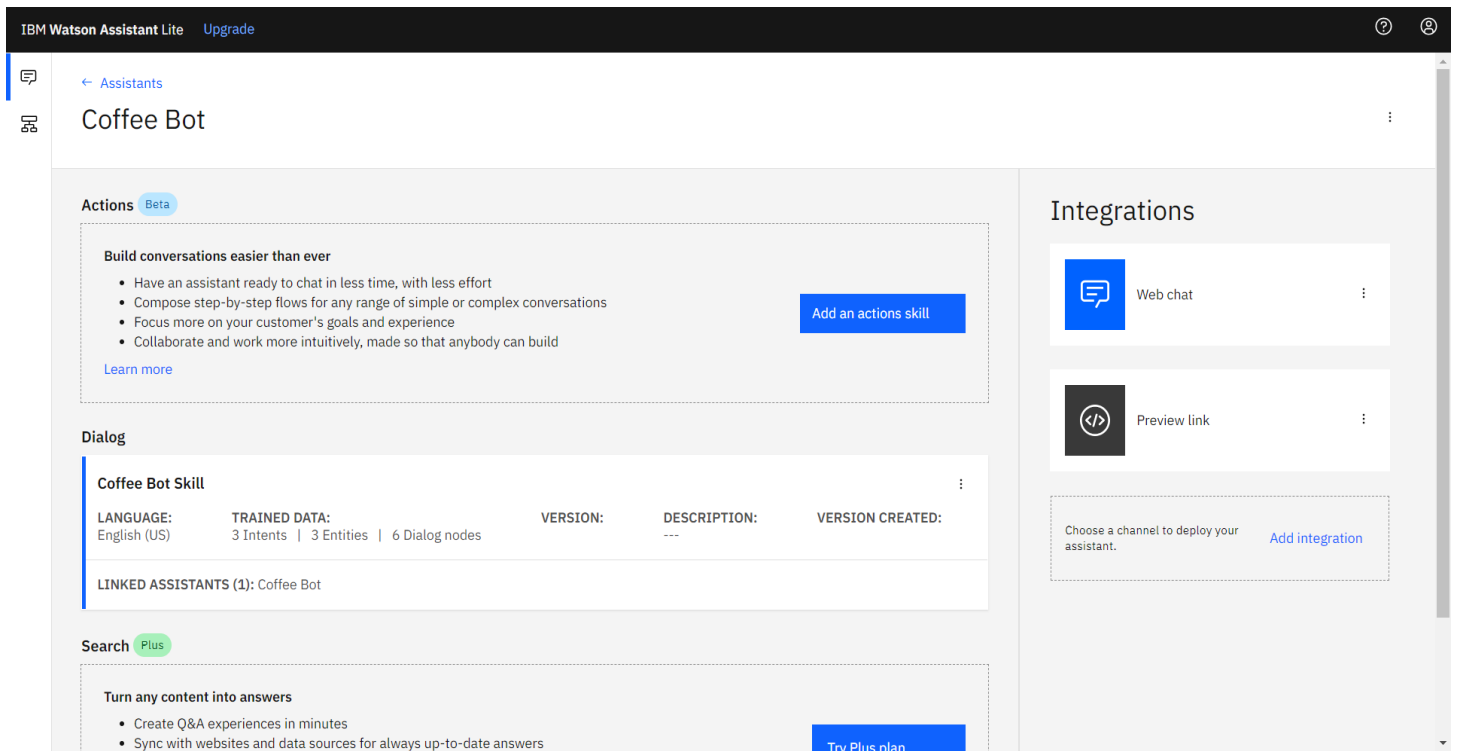
Download Show credentials

API key:

URL:

https://api.eu-gb.assistant.watson.cloud.ibm.com/instances/d0c08383-6c67-4291-b5d3-dc5f8e086...

FEEDBACK



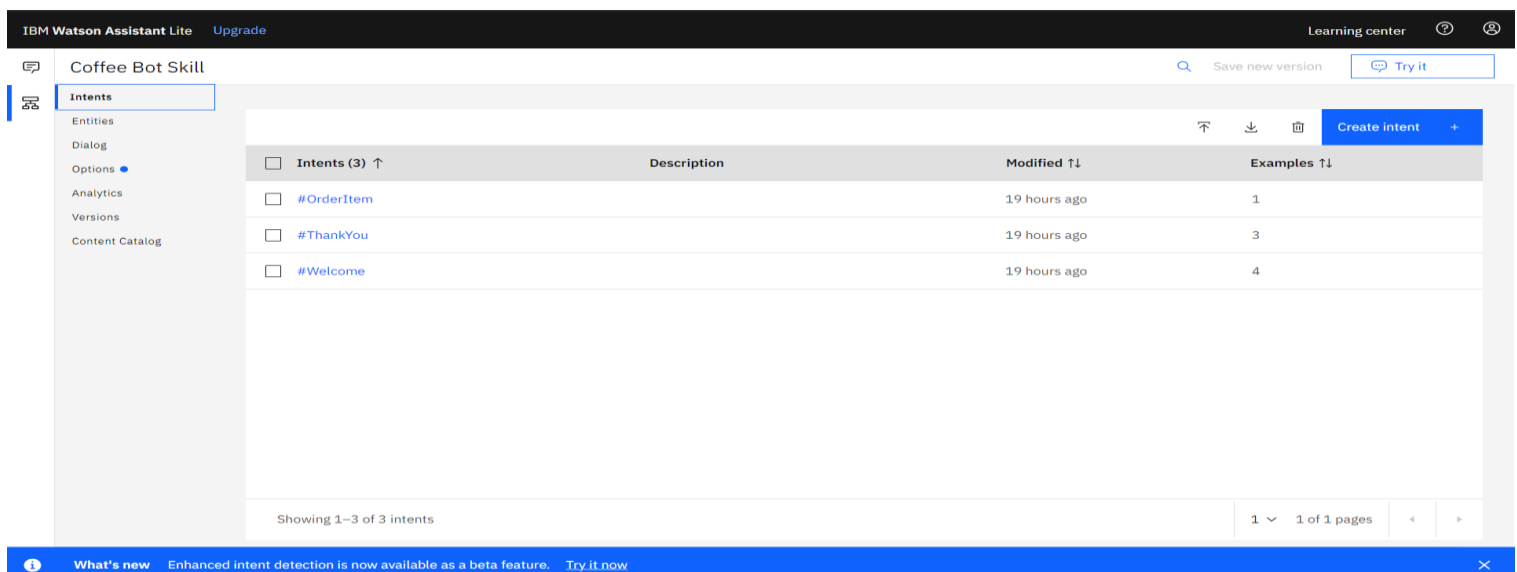
COMPONENTS OF WATSON CHATBOT:

1.3.2 Intents:

Within a chatbot, intent refers to the goal the customer has in mind when typing in a question or comment. While entity refers to the modifier the customer uses to describe their issue, *intent* is what they really mean.

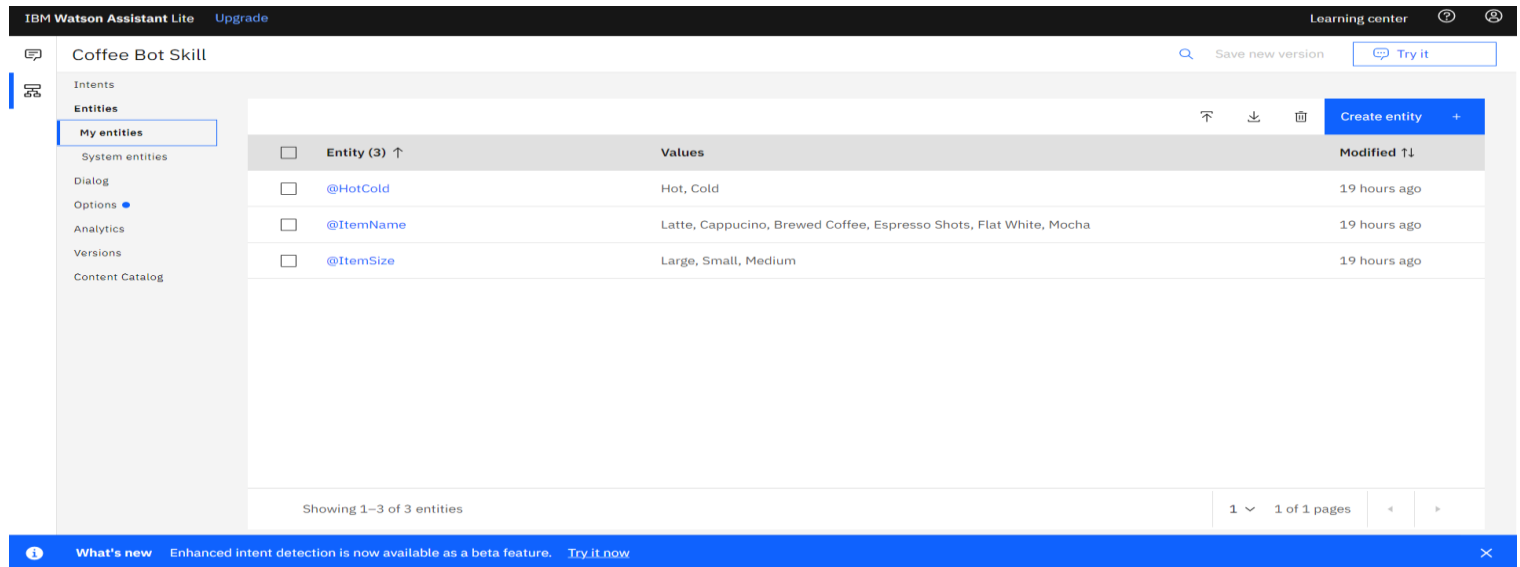
Intent is a critical factor in chatbot functionality because the chatbot's ability to parse intent is what ultimately determines the success of the interaction. In order for a chatbot to be good at this, it must:

1. Be programmed well and trained with a useful model involving a lot of training data
2. Take advantage of machine learning to constantly advance and improve



1.3.3 Entities:

Within a chatbot, an entity, or slot, modifies user intent. Chatbot entities are connected to knowledge repositories in order to provide more personal and accurate responses on user search. An entity in a chatbot is used to add values to the search intent.



The screenshot displays the IBM Watson Assistant interface for a skill named "Coffee Bot Skill". The left sidebar contains navigation options: Intents, Entities (selected), My entities, System entities, Dialog, Options, Analytics, Versions, and Content Catalog. The main area shows a table of entities with columns for checkboxes, entity names, values, and modification times. A "Create entity" button is visible in the top right of the table area. A blue banner at the bottom contains a "What's new" notification about enhanced intent detection.

<input type="checkbox"/>	Entity (3) ↑	Values	Modified ↑↓
<input type="checkbox"/>	@HotCold	Hot, Cold	19 hours ago
<input type="checkbox"/>	@ItemName	Latte, Cappuccino, Brewed Coffee, Espresso Shots, Flat White, Mocha	19 hours ago
<input type="checkbox"/>	@ItemSize	Large, Small, Medium	19 hours ago

Showing 1–3 of 3 entities

1 of 1 pages

What's new Enhanced intent detection is now available as a beta feature. Try it now

1.3.4 Dialog:

The dialog uses the intents that are identified in the user's input, plus context from the application, to interact with the user and ultimately provide a useful response.

The dialog matches intents (what users say) to responses (what the bot says back). The response might be the answer to a question such as Where can I get some gas? or the execution of a command, such as turning on the radio. 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. For example, if a user asks, Where can I get some food? you might want to clarify whether they want a restaurant or a grocery store, to dine in or take out, and so on. You can ask for more details in a text response and create one or more child nodes to process the new input.

The dialog is represented graphically in Watson Assistant as a tree. Create a branch to process each intent that you want your conversation to handle. A branch is composed of multiple nodes.

The screenshot displays the IBM Watson Assistant interface for a skill named "Coffee Bot Skill". The left sidebar contains navigation options: Intents, Entities, Dialog (selected), Options, Analytics, Versions, and Content Catalog. The main workspace shows a dialog tree with four nodes, each with a three-dot menu icon:

- #Welcome**: 1 Responses / 0 Context Set / Does not return
- @ItemName**: 1 Responses / 0 Context Set / Does not return (indicated by a blue arrow from the previous node)
- #ThankYou**: 1 Responses / 0 Context Set / Does not return
- Anything else** (anything_else): 1 Responses / 0 Context Set / Does not return

At the top of the workspace, there are buttons for "Add node" (blue), "Add child node" (grey), and "Add folder" (dark grey). The top header bar includes "IBM Watson Assistant Lite", an "Upgrade" link, a "Learning center" link, and a "Try it" button. A blue banner at the bottom states: "What's new Enhanced intent detection is now available as a beta feature. Try it now".

2. Requirement of Project

2.1 HardwareRequirement

A laptop or computer.

As the project is to be done on IBM Cloud, the server and all hardware requirement is provided by IBM Service Provider . Hardware needs come under IAAS (Infrastructure As a Service).

2.2 OtherRequirements

You should have IBM Account to build chatbot using IBM Watson.

A good internet connection.

Service: IBM WATSON Assistant

E-Commerce Chatbot :

Build your own assistant using
IBM Watson Assistant

Assistant preview

Hi, I am a coffee bot. How can I help you?

i want to order a coffee

Sure, What do you need?

Sunday, December 6, 2020 9:59 AM

i want cuppuccino

Okay, What size?

large

Okay, Hot or Cold?

hot

Okay, Your order is confirmed. Anything else?

Type something...



Preview link for Chatbot :

<https://web-chat.global.assistant.watson.cloud.ibm.com/preview.html?region=eu-gb&integrationID=bc31a6eb-fdad-4f4d-b5a7-ebcc53942534&serviceInstanceID=d0c08383-6c67-4291-b5d3-dc5f8e080c38>