

# Project Report

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Title : Intelligent Customer Help Desk With Smart Document  
Understanding

Category: Artificial Intelligence

Internship at smartinternz.com

## **Project Overview:**

We will use various IBM cloud services such as Watson Assistant, Watson discovery, Cloud functions, Node Red to create smart customer helper chatbot.

- Project Requirements: Python, IBM Cloud, IBM Watson, Node-js
- Functional Requirements: IBM cloud
- Technical Requirements: AI,ML,WATSON AI,PYTHON
- Software Requirements: Watson assistant, Watson discovery.
- Project Deliverables: Smartinternz Internship
- Project Team: Atira Bagwan
- Project Duration:19 days

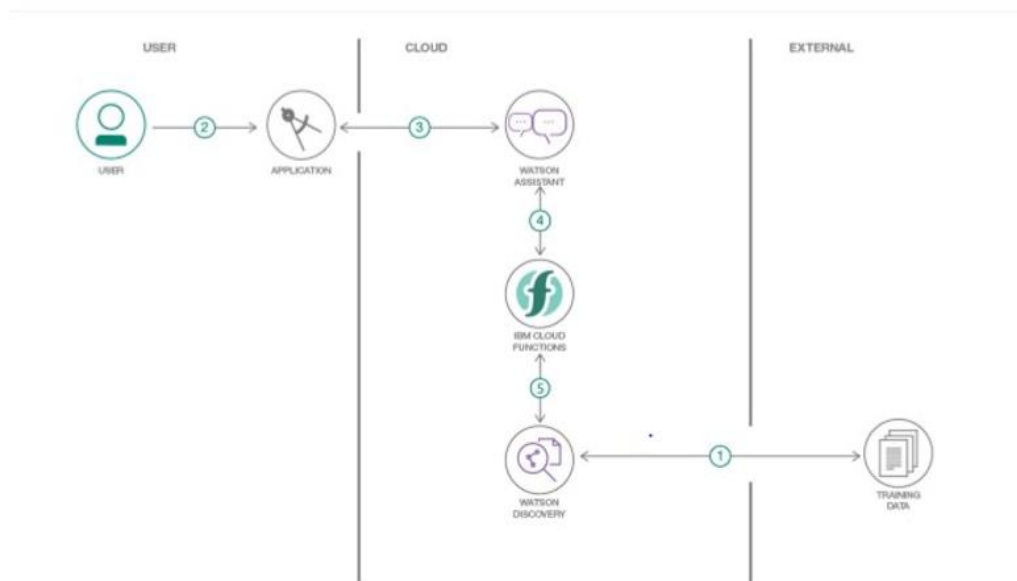
## **Project Description:**

Typical chat bot can answer simple questions , which comes under it's predefined question set. It can also make appointments. But whenever any question is asked which is beyond it's predetermined question set it asks user that it is invalid question or it asks them to talk to real person. In this project if customer wants to know about operation of device the application shall pass the question to watson discovery service which has been pre-loaded with the device's owners manual. So now, instead of "Would you like to speak to a customer representative?" we can return relevant sections of the owners manual to help solve our customers' problems.

## **Scope of Work**

- Create a customer care dialog skill in Watson Assistant
- Use Smart Document Understanding to build an enhanced Watson Discovery collection
- Create an IBM Cloud Functions web action that allows Watson Assistant to post queries to Watson Discovery
- Build a web application with integration to all these services & deploy the same on IBM Cloud Platform

## Flow diagram :



1. The document is annotated using Watson Discovery SDU
2. The user interacts with the backend server via the app UI. The frontend app UI is a chatbot that engages the user in a conversation.
3. Dialog between the user and backend server is coordinated using a Watson Assistant dialog skill.
4. If the user asks a product operation question, a search query is passed to a predefined IBM Cloud Functions action.
5. The Cloud Functions action will query the Watson Discovery service and return the results

## Steps:

1. Create IBM Cloud services
2. Configure Watson Discovery
3. Create IBM Cloud Functions action
4. Configure Watson Assistant
5. Create flow and configure node
6. Deploy and run Node Red app.

## 1. Create IBM Cloud services

Create the following services:

- Watson Discovery
- Watson Assistant
- Node Red

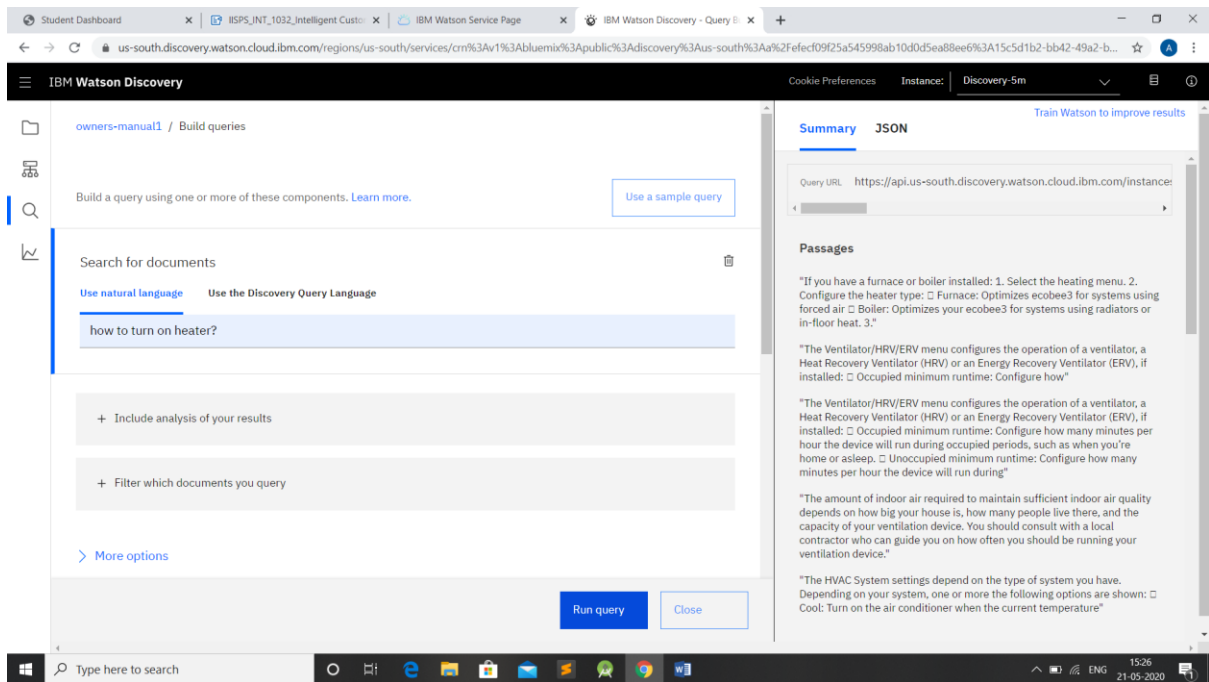
## 2. Configure Watson Discovery

Import the document

Launch the Watson Discovery tool and create a new data collection by selecting the Upload your own data option. Give the data collection a unique name. When prompted, select and upload the ecobee3\_UserGuide.pdf file.

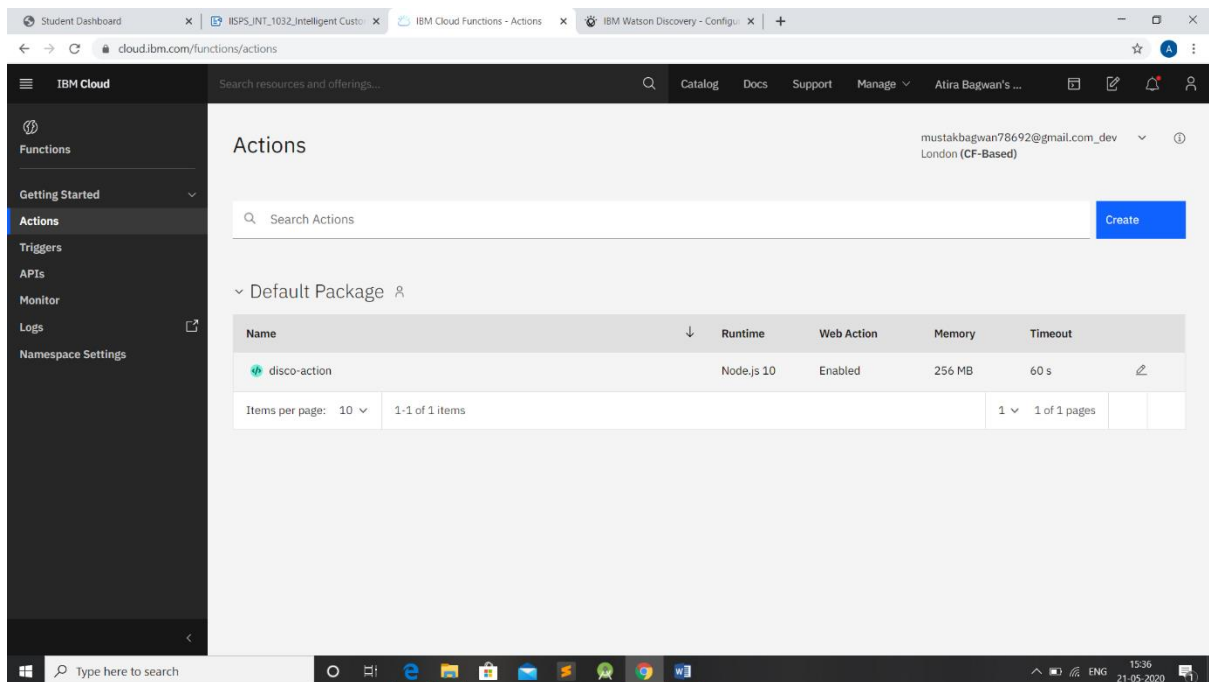
- Create new collection
- Configure data
- Annotate with SDU
- Split document on subtitle field

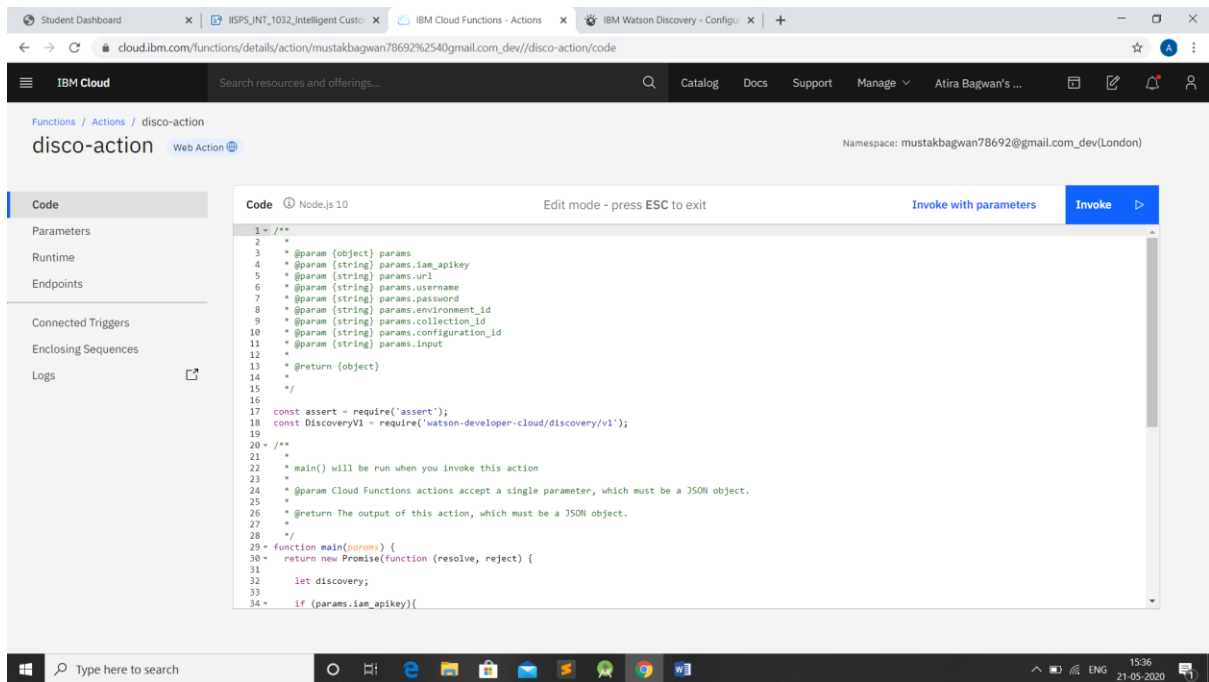
The screenshot shows the IBM Watson Discovery console interface. At the top, there's a navigation bar with 'owners-manual1' and 'Configure data'. Below this, the 'Overview' tab is active, showing '108 documents'. A status bar indicates '0 documents failed' and provides 'Created on' and 'Last updated' timestamps. A 'Upload documents' button is visible. The main content area is divided into sections: 'Identified 5 fields from your data' (listing footer, subtitle, table\_of\_contents, text, title), 'Added 4 enrichments to your data' (showing Entity Extraction results like '900 seconds', '0.3°C', '0.5°F' and Sentiment Analysis results like '59% positive', '28% neutral', '13% negative'), and 'Now you're ready to query!' (with buttons for 'Run' on various entity and sentiment queries). A footer bar shows '5 enrichments available' and a Windows taskbar at the bottom.



### 3.Create IBM Cloud Functions action

Create the web action that will make queries against our Discovery collection.





## 4.Configure Watson Assistant

Launch the Watson Assistant tool and create a new dialog skill. Select the Use sample skill option as your starting point.This dialog skill contains all of the nodes needed to have a typical call center conversation with a user.

- Add new intent about product information
- Create new dialog about product information

### Enable webhook from Assistant

Set up access to WebHook for the IBM Cloud Functions action created.

### Test Assistant :

The screenshot displays the IBM Watson Assistant interface for a 'Customer Care Sample Skill'. The main workspace shows a list of 10 intents in a table. The right sidebar features a 'Try it out' chat window with sample interactions.

Intents (10) ↑	Description	Modified ↑↓	Examples ↑↓
#Cancel	Cancel the current request	2 days ago	7
#Customer_Care_Appoint...	Schedule or manage an in-store ap...	2 days ago	20
#Customer_Care_Store_H...	Find business hours.	2 days ago	48
#Customer_Care_Store_Lo...	Locate a physical store location or a...	2 days ago	25
#General_Connect_to_Ag...	Request a human agent.	2 days ago	47
#General_Greetings	Greetings	2 days ago	30
#Goodbye	Good byes	2 days ago	6
#Help	Ask for help	2 days ago	8
#Product_Information	User wants help using thermostat	2 days ago	3

Showing 1–10 of 10 intents

1 of 1 pages

Try it out

Clear Manage Context

hi

#General\_Greetings

Hello, Good afternoon

how to turn on heater?

#Product\_Information

"The amount of time the fan will run after the heat set point has been reached and the call for heat has been turned off. Running the fan for a period of time allows for any heated air left in the ducts to circulate throughout the home."

Use the up key for most recent

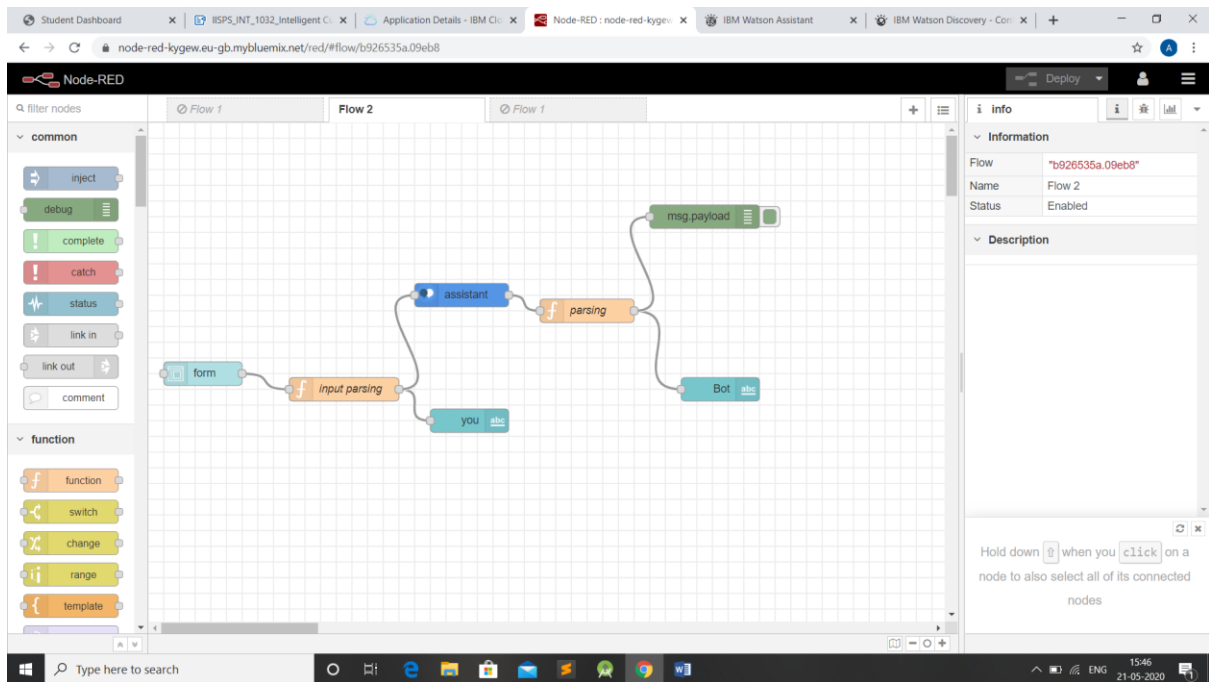
Enter something to test your assistant

## 5.Create flow and configure node:

At first go to manage pallette and install dashboard.

Now,Create the flow with the help of following node:

- ❖ Inject
- ❖ Assistant
- ❖ Debug
- ❖ Function
- ❖ Ui\_Form
- ❖ Ui\_Text



## 6. Deploy and run Node Red app.

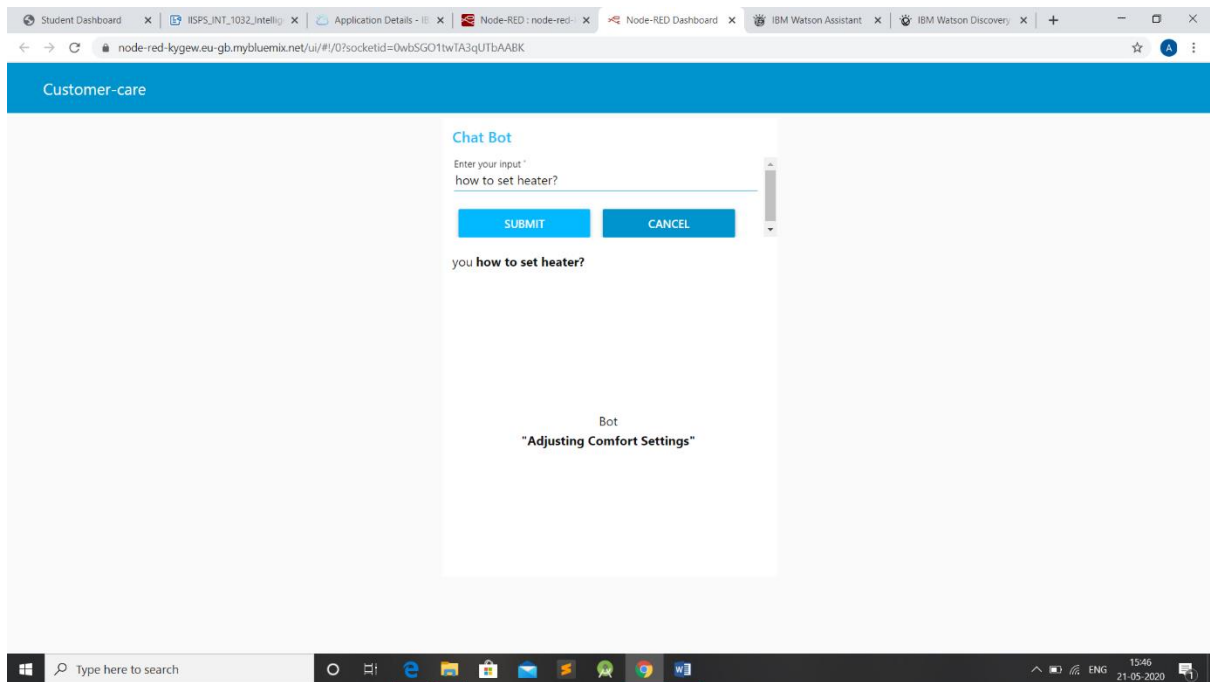
Deploy the Node Red flow.

Then copy the link url upto .net/ and paste at anew tab by ui at the end of the url, like this,

<https://node-red-kygew.eu-gb.mybluemix.net/ui>

video link : <https://drive.google.com/file/d/1H0INT-MJHLaorqp6QfV7zjitD4-raOui/view?usp=sharing>





**Thank You!**