PROJECT REPORT 2020

AI POWERED NEWS SEARCH APP

The Smart Bridge Educational Services
Authored by: SAMIKSHA GUPTA

PROJECT DETAILS

Project ID	:	SPS_PRO_67 IISPS_INT_131
Project Title	:	AI Powered News Search App
Duration	:	28 days
Project Manager	:	Samiksha Gupta
Project Support	:	The SmartBridge Educational Services
Project Mentor	:	Mr. Hemant Kumar Gahlot Ms. Swathi Annamaneni
Kickoff Date	:	April 21st, 2020
Finish Date	:	May 18th, 2020

ACKNOWLEDGEMENT

This project has taken a considerable amount of time and resources and I would like to acknowledge the help of all of those who have made the project possible. In particular I would like to thank my supervisor Mr. Hemant Kumar Gahlot for his time, patience and guidance, and also for allowing the idea to be pursued originally. I would also like to thank Ms. Swathi Annamaneni for her help. Further to these people I would like to thank the members of the Smartbridge career workshop for their technical help in setting up various codes and faults. Also, I would like to thank all of the many thousands of people who have worked on all of the Open Source projects without whose efforts this project would not have been possible.

CONTENTS

1. INTRODUCTION

1.1 OVERVIEW

The web is home to massive amounts of data, with more being created every day. Organizations can harness this constant stream of information to gain understanding, plan strategies, and find opportunities. Enriched news data can help the application make dynamic connections across current events faster.

The main objective of the project is to manage the details of news, news category, latest news, sports news, weather news etc. It manages all the information about news, comments, weather news. It describe how to provide good performance and better services for the users.

This project gave me some basic working knowledge of the Watson Discovery Service and showed me how to use Discovery along with JavaScript and Node.js to build my own news mining web application.

1.2 Purpose

In the modern day of technology, we come across an innumerable amount of content, be it news articles, entertainment, media, academics, sports etc. Although, with massive amounts of data it can get quite difficult to reach what you actually need. With the help of this AI powered news search app, enriched data can help you access relevant information even faster and easier. Moreover, users also analyze the news to check whether its positive, negative or neutral. This app will provide the relevant and real news. Users can also query not just on keywords or categories but also on concepts, sentiment, and relations.Its a user-friendly API.

The purpose of the project is to build an application to reduce the manual work for accessing the latest trending news.With the implementation of this project the retrieval of latest information will be at the click of the mouse.It helps in saving the time and making information flow easy giving genuine and valuable report.

2. LITERATURE SURVEY

2.1 Existing problem

The old manual systems was suffering from a series of drawbacks.Since whole world of the systems was to be maintained with hands the process of keeping, maintaining and retrieving the information was very tedious and lengthy. The records were never used to be in a systematic order.There used to be a lots of difficulties in associating

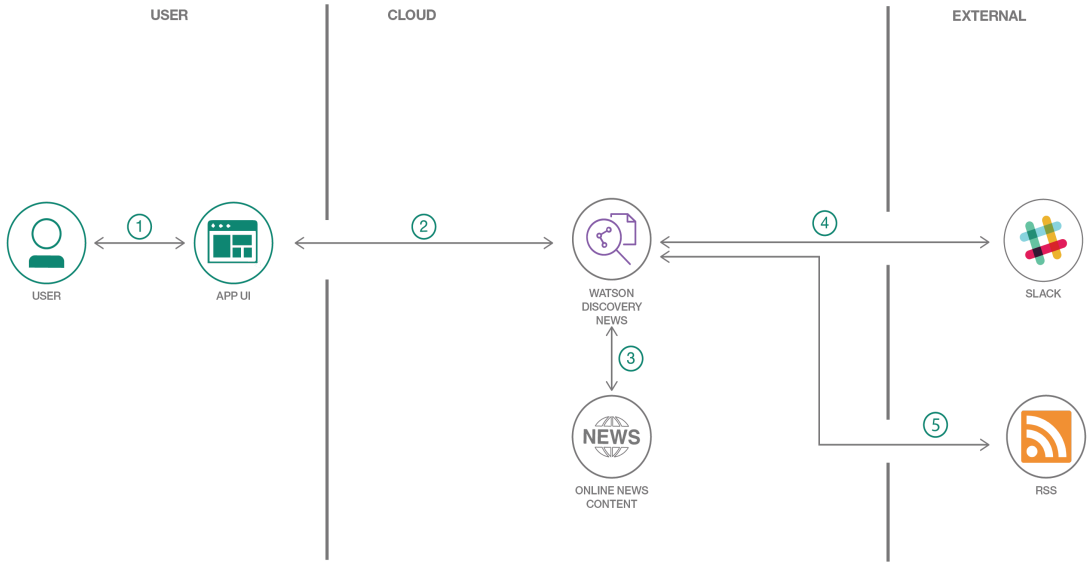
any particular transaction with a particular context.If any information was to be found it was require to go through the different registers, documents there would never exists anything like report generation.There would always be unnecessary consumption of time while entering records and retrieving records. One more problem was that it was very difficult to find errors while entering the records. Once the records were entered it was very difficult to update these records.
As the world totally relays upon the electronic media to its every day adventure. People have no time to be updated through newspaper or watching or listening the news on television or radios. People today need to be updated on daily basis in this competitive world. Most of the people get the information about the world around through the internet
The purpose of "Cognitive News Search App" is to automate the existing manual system by the help of computerized equipment's and full-fledged computer software, fulfilling their requirements, so that their valuable data/information can be stored for a longer period with easy accessing and manuplation of the same.It becomes very difficult to track or manage all the latest information of news which can be solved by this project.

2.2 Proposed solution

The "Cognitive News Search App" has been developed to override the problems prevailing in the practicing manual system. This system is designed for the particular need of the users to carry out information in a smooth and effective manners.This project is supported to eliminate & in some cases reduce the hardships faced by this existing system.
No formal knowledge is needed for the user to use this system. Thus by this all it proves it is user-friendly. This project helps in better utilization of Watson Discovery. This will also help those users who are always on the go. It will allow them to manage their workforce anytime,at all times. These will ultimately allows us a better manage resource.With the implementation of this project the retrieval of latest information will be at the click of the mouse.It helps in saving the time and making information flow easy giving genuine and valuable report.

3. THEORITICAL ANALYSIS

3.1 Block diagram



3.2 Hardware / Software Designing

HARDWARE DESIGN

- **Laptop:** The processor and RAM is very necessary to access the system.This will ensure that the computer runs quickly and smoothly
- **Internet:** In order to create a website, access to a high-speed Internet connection can be vital.

SOFTWARE DESIGN

- **Watson Discovery:** A cognitive search and content analytics engine for applications to identify patterns, trends, and actionable insights.

- **Node.js:** An asynchronous event driven JavaScript runtime, designed to build scalable applications.

- **Slack:** Slack is a cloud-based set of team collaboration tools and services with chat bot integration.

- **Botkit**: Framework for creating and managing chat bots

We can configure this project on following operating system:-

- **WINDOWS-** Can easily be configured on windows operating system.
- **MAC**- Can configured on Mac OS.
- **LINUX-** Can easily configured on all the versions of Linux OS.

4. EXPERIMENTAL INVESTIGATION

1. The user interacts with the app UI(Built with Node-RED or Cloud or Local) to request relevant news content.
2. The app sends user requests to Watson Discovery News.
3. The Watson Discovery Service is continually crawling the web to update its Discovery News collection.
4. The Watson Discovery will also provide Sentimental Analysis.
5. The Watson Discovery Service responds to Slack search requests

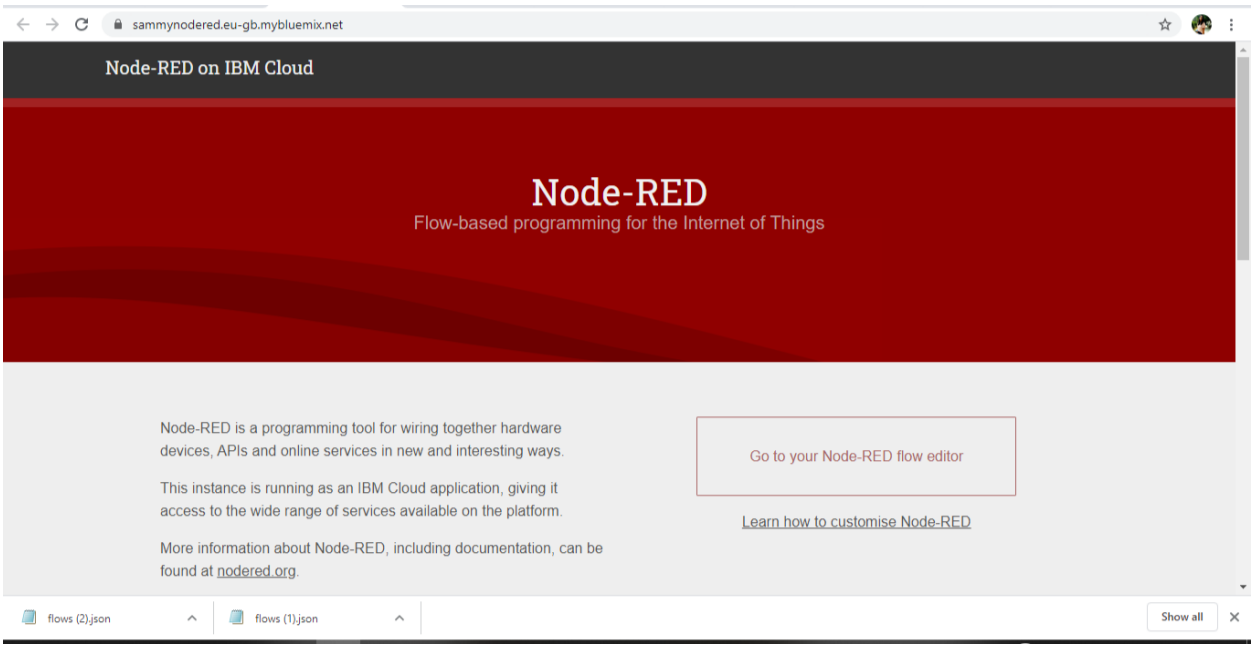
5. FLOW CHART

There are two levels in this project:-

LEVEL-1

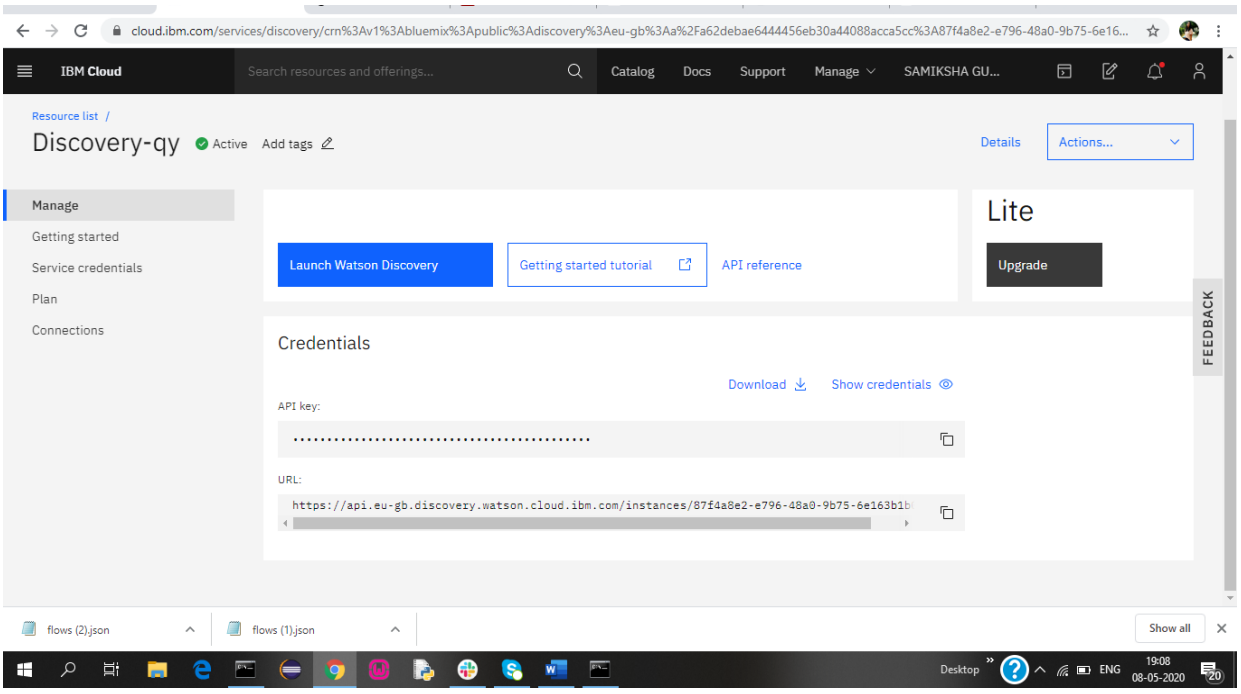
a) Building a Server Side Application using Node-RED

- Create the account on IBM Cloud.
- Sign in & get started
- Create a Node Red Started Application and make the changes according to the requirements.



b) Use the pre-built Watson Discovery News collection

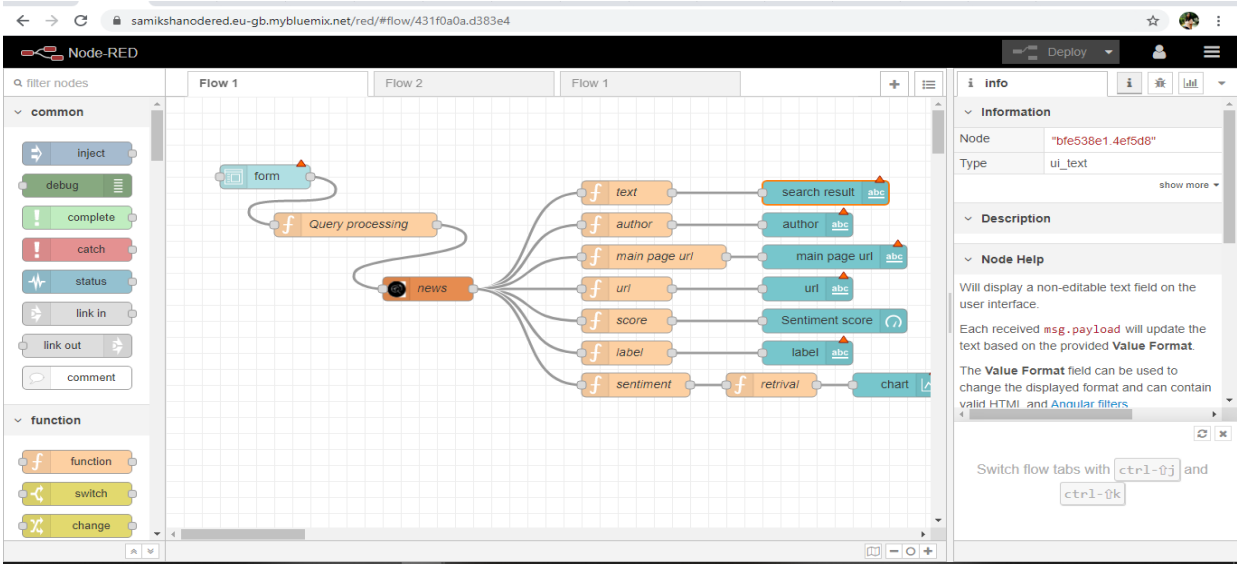
- Again Create the Discovery Service in IBM Cloud.
- Launch the Watson Discovery Service.



c) Access the Watson Discovery Service through the Discovery API

- Set the discovery credentials in the Node-Red.
- Install the dashboard & sentiment node from the manage pallets.

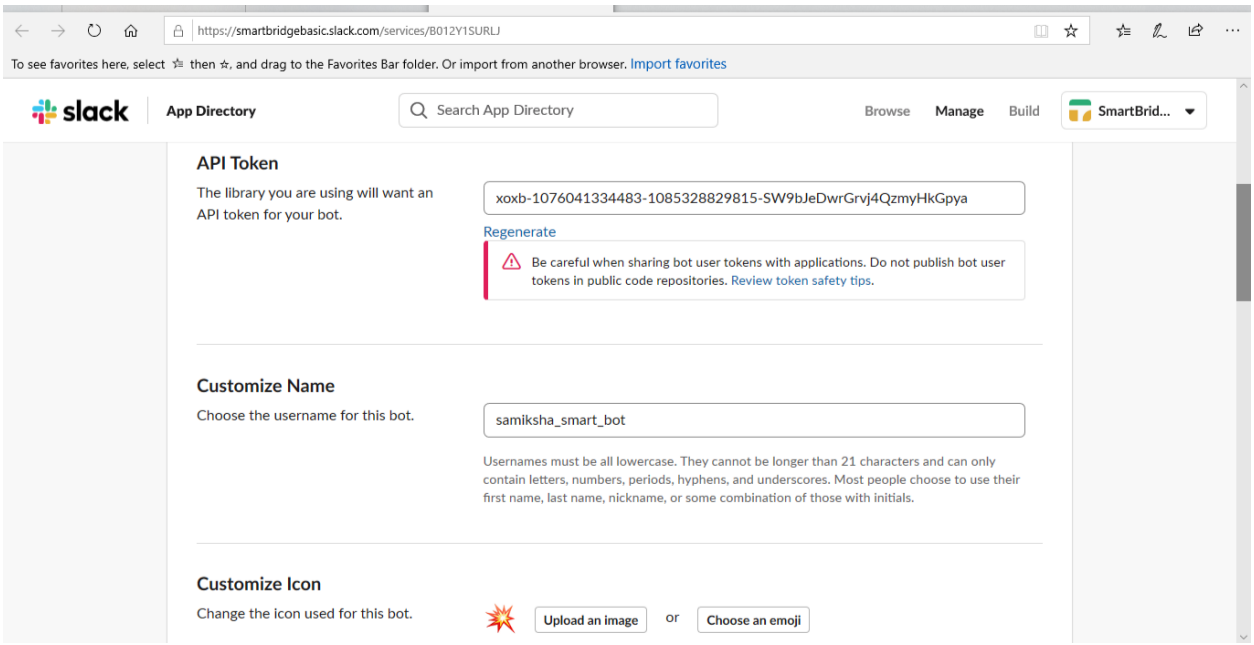
- Add the nodes in the flow & deploy it.



LEVEL-2

a) Use a Slack interface to query the data

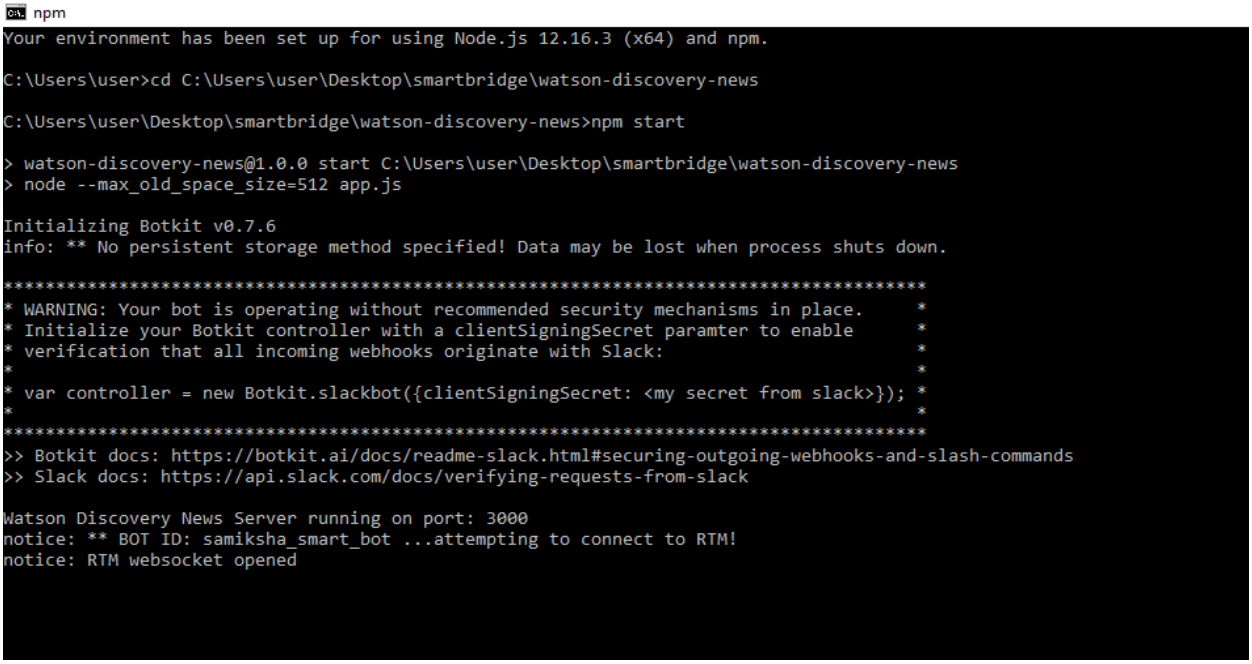
- Clone the Watson Discovery News repository locally.
- Create the slack bot by navigating to the slack workspace and generate the token.
- In the cloned local repository create a .env file from the sample version.
- Copy paste the Watson discovery credentials & the slack bot token in the .env file.
- Run the application in the node.js command prompt.



.env - Notepad

File Edit Format View Help

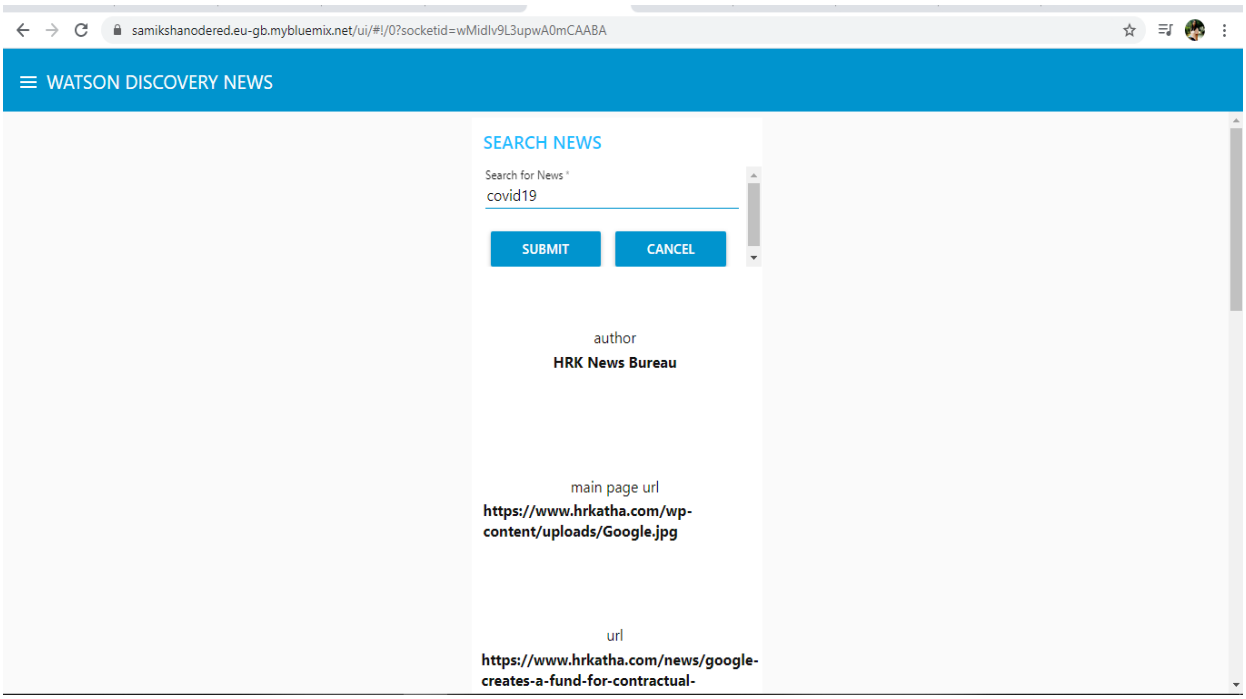
```
# Copy this file to .env and replace the credentials with
# your own before starting the app.

# Watson Discovery

# Change the URL and uncomment if it is different from below:
DISCOVERY_APIKEY=OrXHF0rIhbiYGbyRc416KTxe7YzVqe6ArDLOUJFagYeR
DISCOVERY_IAM_APIKEY=OrXHF0rIhbiYGbyRc416KTxe7YzVqe6ArDLOUJFagYeR
DISCOVERY_URL=https://api.eu-gb.discovery.watson.cloud.ibm.com/instances/87f4a8e2-e796-48a0-9b75-6e163b1b0195
DISCOVERY_AUTH_TYPE=iam


# Slack - optional
SLACK_BOT_TOKEN=xoxb-1076041334483-1085328829815-SW9bJeDwrGrvj4QzmyHkGpya
```

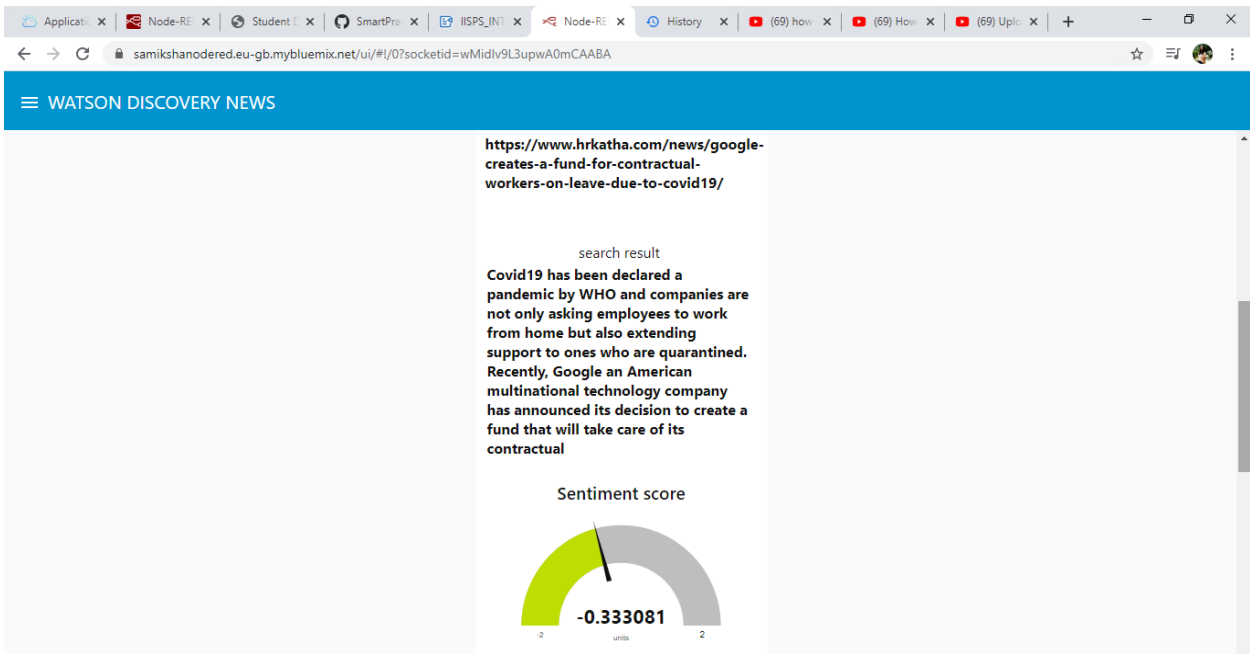


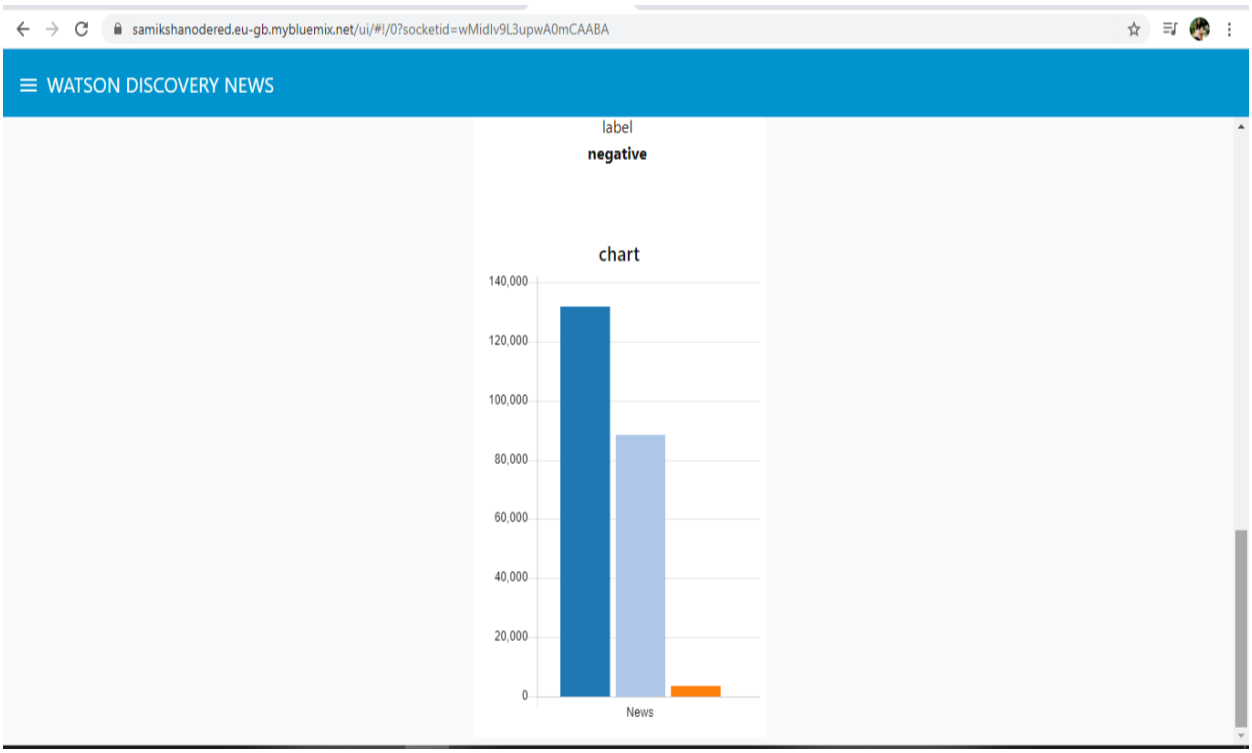
***NOTE-** As I have used the lite account (i.e free trial IBM Cloud account) the app cannot be deployed to IBM Cloud with Cloud Foundary. Hence, I deployed the app locally.

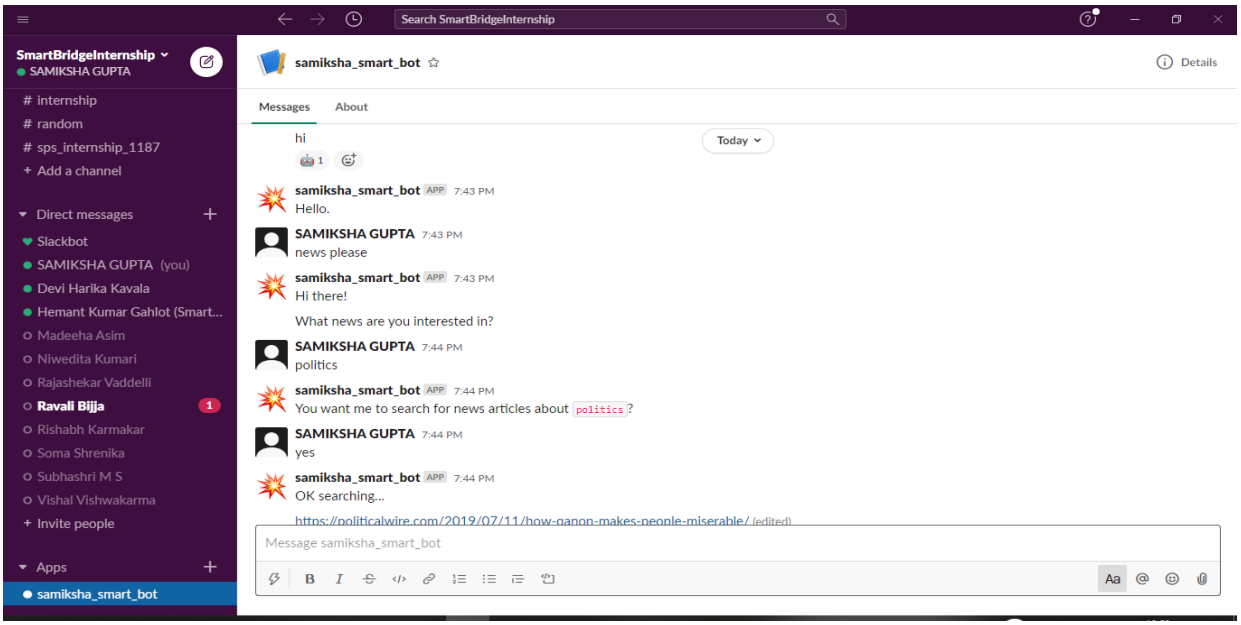
6. RESULT

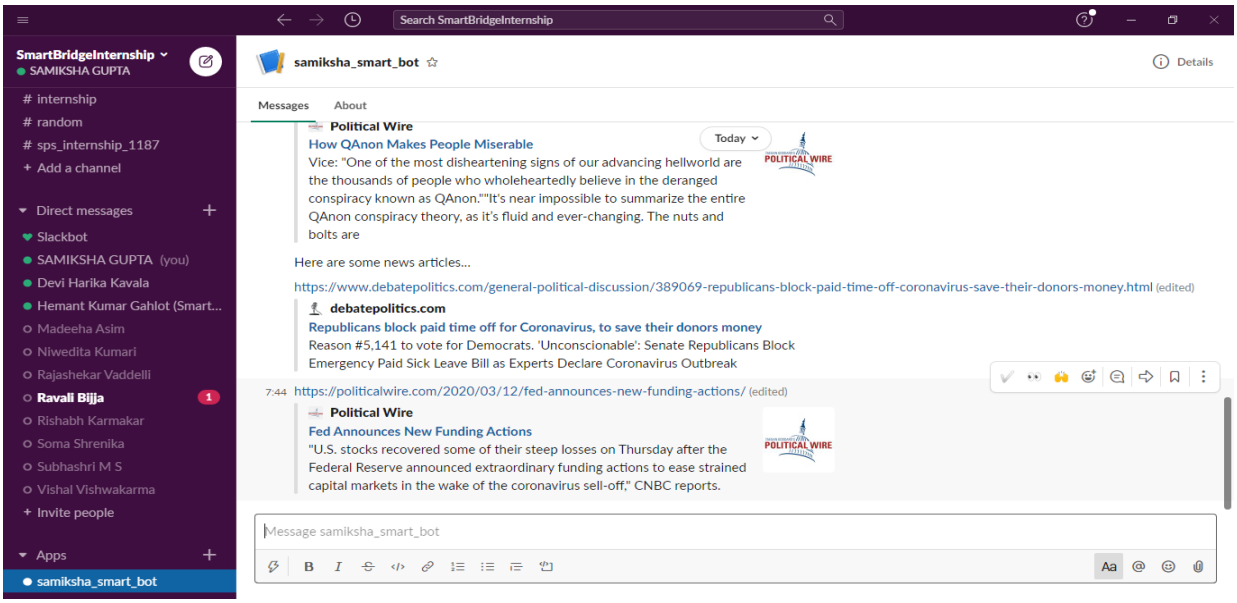
After processing through all steps of the system development life cycle, the UI is developed.Now the UI can be accessed by all the people in the world.The users can search any kind of news whether it is related to sports, entertainment, weather ,etc. Users can query not just on keywords but also on sentiments, categories etc. Users can also analyze the news whether it is positive, negative or neutral. User can access the news through slack bot also.


samikshanodered.eu-gb.mybluemix.net/ui/#!/0?socketid=wMidIv9L3upwA0mCAABA
WATSON DISCOVERY NEWS
SEARCH NEWS
Search for News *
covid19
SUBMIT
CANCEL
author
HRK News Bureau
main page url
https://www.hrkatha.com/wp-content/uploads/Google.jpg
url
https://www.hrkatha.com/news/google-creates-a-fund-for-contractual-


samikshanodered.eu-gb.mybluemix.net/ui/#!/0?socketid=wMidIv9L3upwA0mCAABA
WATSON DISCOVERY NEWS
https://www.hrkatha.com/news/google-creates-a-fund-for-contractual-workers-on-leave-due-to-covid19/
search result
Covid19 has been declared a pandemic by WHO and companies are not only asking employees to work from home but also extending support to ones who are quarantined. Recently, Google an American multinational technology company has announced its decision to create a fund that will take care of its contractual
Sentiment score
-0.333081


samikshanodered.eu-gb.mybluemix.net/ui/#!/0?socketid=wMidIv9L3upwA0mCAABA
WATSON DISCOVERY NEWS
label
negative
chart
140,000
120,000
100,000
80,000
60,000
40,000
20,000
0
News


Search SmartBridgeInternship
SmartBridgeInternship
SAMIKSHA GUPTA
internship
random
sps_internship_1187
+ Add a channel
Direct messages
Slackbot
SAMIKSHA GUPTA (you)
Devi Harika Kavala
Hemant Kumar Gahlot (Smart...
Madeeha Asim
Niwedita Kumari
Rajashekar Vaddelli
Ravali Bijja
Rishabh Karmakar
Soma Shrenika
Subhashri M S
Vishal Vishwakarma
+ Invite people
Apps
samiksha_smart_bot
samiksha_smart_bot
Details
Messages
About
hi
Today
samiksha_smart_bot APP 7:43 PM
Hello.
SAMIKSHA GUPTA 7:43 PM
news please
samiksha_smart_bot APP 7:43 PM
Hi there!
What news are you interested in?
SAMIKSHA GUPTA 7:44 PM
politics
samiksha_smart_bot APP 7:44 PM
You want me to search for news articles about politics?
SAMIKSHA GUPTA 7:44 PM
yes
samiksha_smart_bot APP 7:44 PM
OK searching...
https://politicalwire.com/2019/07/11/how-qanon-makes-people-miserable/ (edited)
Message samiksha_smart_bot



7. ADVANTAGES & DISADVANTAGES

ADVANTAGES

- Users can get news instantly anywhere and anytime ie around the clock availability
- It is secure & speedy.
- Better customer support and friendly search engine.
- Cost- effective.
- User can query not just on keyboard or categories but also on concepts, sentiment, and relations.
- Also provide URL and author's name.
- Flexible- Backend interface
- Identify popular topics over the past 24 hours. Topics can be general or specific to an industry or category.

DISADVANTAGES

- Remote area access.
- Offline access.
- Proper device is required.
- Can access only in one language i.e English & no translation feature.

8. APPLICATIONS

- **GENERAL AWARENESS:** This project will help every individual in enhancing their general awareness.
- **SOCIAL MEDIA-** To find out the brief review of trending topics for news media.
- **DATA ANALYST:** Gives the data about whether the news is real or fake.

9. CONCLUSIONS

This project gave me some basic working knowledge of the Watson Discovery Service and showed me how to use Discovery along with JavaScript and Node.js to build my own news mining web application. I can also integrate it with Slack so that I can access it more easily on my phone. From this, I can also analyze any news and check it whether the news is positive, negative or neutral. The user can identify popular topics over the past 24 hours.It will reduced the cost of collecting the management and collection procedure will go on smoothly.

10. FUTURE SCOPE

The future scope of this project is valuable. The time duration of this project was only one month. In this time duration I create this project with the help of mentors.
As for other future developments,the following can be done:

- Can also be made into an application-based software.
- Can also add features like speech recognition and language translation.
- Can also add the comment & like/dislike section for the users.
- Sub-Topics of trending news can also be shown.

11. BIBLIOGRAPHY

- **Project Report Idea-**
  https://www.tops-int.com/blog/how-to-create-a-final-year-project-report/
  https://www.imperial.ac.uk/pls/portallive/docs/1/18619781.PDF
- **WATSON DISCOVERING LEARNING PATH -**
  https://developer.ibm.com/patterns/create-a-cognitive-news-search-app/
- **YOUTUBE-** https://www.youtube.com/search?/

APPENDIX

Main software links are:-

- **IBM CLOUD ACCOUNT -**https://cloud.ibm.com/
- **NODE RED APP-** https://cloud.ibm.com/apps/
- **WATSON DISCOVERY-** https://cloud.ibm.com/services/discovery/
- **SLACK-** https://app.slack.com/client/
- **GIT ACCOUNT-** https://github.com
- **NODE.JS-** https://nodejs.org/en/

SOURCE CODE

The deliverable of this project can be accessed through-

UI
https://samikshanodered.eu-gb.mybluemix.net/ui

SLACK BOT
samiksha_smart_bot