

# **SMARTBRIDGE INTERNSHIP**

## **PROJECT REPORT**

**PROJECT TITLE:** *AI POWERED NEWS SEARCH ENGINE*

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# 1.INTRODUCTION:

## 1.1 OVERVIEW:

***AI powered news search engine*** is a news bot. It enables the user to get the news easily just by texting with a bot. It is build to be available for the users from all over the country. The news bot here is enabled with the use of Artificial Intelligence to make the searching process more easier.

## 1.2 PURPOSE:

The development of ***AI powered news search engine*** is to be build using *IBM Cloud watson assistant, Node RED starter*. The purpose of the project is to enable the user to use the news search engine powered by AI.

# 2.LITERATURE SURVEY:

## 2.1 EXISTING PROBLEM:

All current news applications can be confusing for the average person, with multiple functions and exaggerated design, these applications still do not meet the demand of the latest news users and often get results from the past days, weeks and months, which confuses the user only. Also, there is no way in these apps to know what the approximate feeling of the audience is regarding the article or news topic, which makes it less interactive and easy to use.

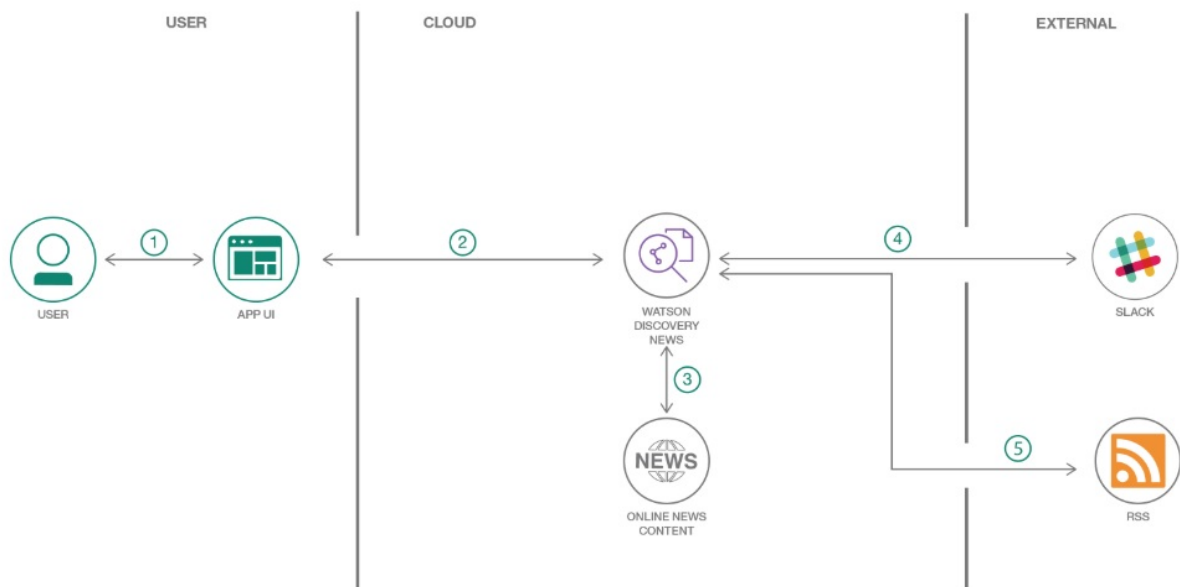
## 2.2 PROPOSED SOLUTION:

Discovery service available in the ***IBM cloud***, creating a web app to get the latest news results is fast and hassle-free. When integrated with ***Node-Red Flow***, the ***IBM Discovery Service*** can create a simple, engaging, organized user interface that provides users with relevant news articles as Discovery Service continuously crawls the web for the latest news to provide. By adding ***sentimental analysis***, we make the user interface more interactive and easier to understand.

### 3.THEORETICAL ANALYSIS:

#### 3.1 BLOCK DIAGRAM:

Flow



The block diagram that shown above tells user interacts with the user interface created through the *Node-red* application that investigates a relevant topic about which he would like to receive news. The user interface integrated with the discovery service will use the service to present the most recent and relevant news articles, corresponding to what the user searched for. Since *slack* is also integrated with *discovery*, we can use our own bot and ask it to search for news by typing in the keyword and the bot searches for news articles related to it.

#### 3.2 HARDWARE/SOFTWARE DESIGNING:

- Building a Server Side Application using **Node-RED**
- Using the pre-built *Watson Discovery News* collection
- Accessing the Watson Discovery Service through the **Discovery API**
- Using the *Slack interface* to query the data
- Pushing news alerts out to web notification
- Deploying the app on **IBM Cloud**

## 4. EXPERIMENTAL INVESTIGATIONS:

### 4.1 SETTING UP THE ENVIRONMENT:

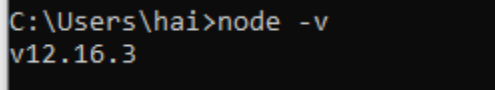
#### 4.1.1 Installing Git:

Install *Git* on Windows. The most official build is available for download on the Git website.

#### 4.1.2 Installing Node.js:

*Node.js* is a run-time environment which includes everything you need to execute a program written in *JavaScript*. It's used for running scripts on the server to render content before it is delivered to a web browser.

After installing it, verify the installation using the cmd prompt by entering ***node -v*** command. It will produce the *version of the installed node-red*.



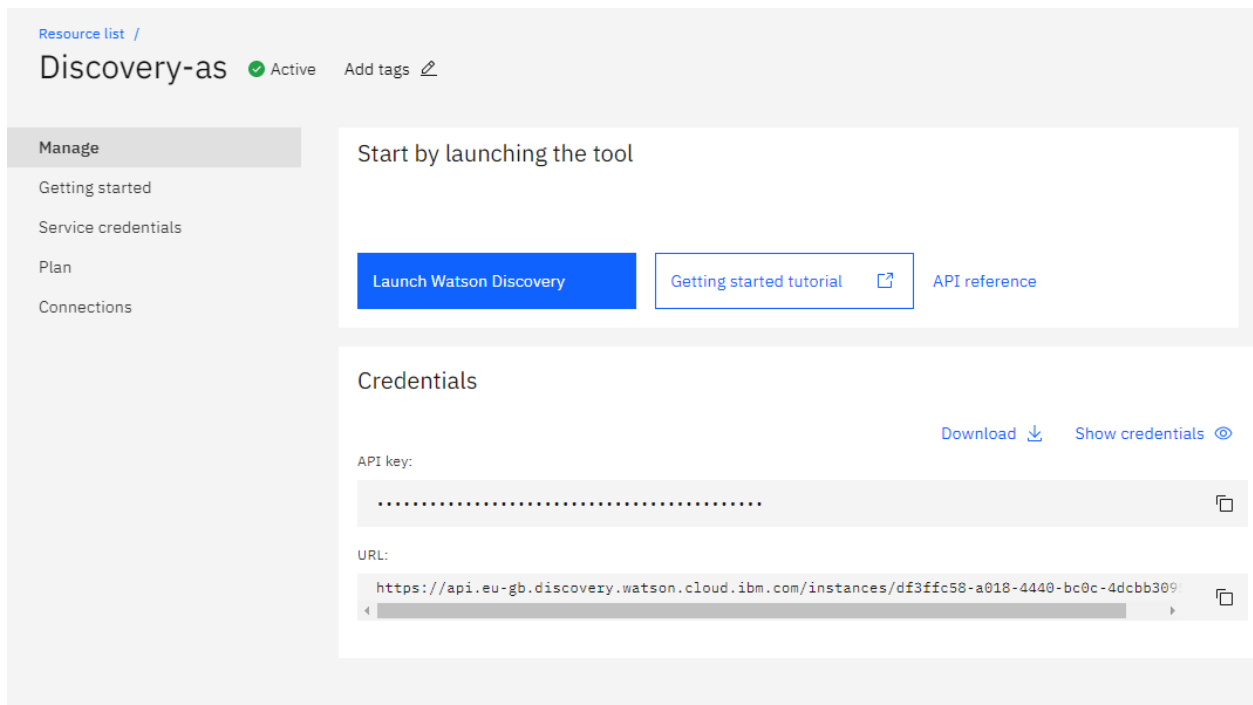
```
C:\Users\hai>node -v
v12.16.3
```

#### 4.1.3 Installing Node-RED:

Node-RED is a programming tool for wiring together hardware devices, APIs and online services in new and interesting ways. Installing Node-RED as a global module adds the command *node-red* to your system path.

## 4.2 Creating and deploying Watson discovery newsapp locally:

First, create an **account in IBM Cloud** and then create **Watson Discovery service** on that. Then, Configure Watson Discovery service and save Discovery **service credentials** that is shown in the below figure. Finally Deploy Watson-discovery-news App locally.




## 4.3 Integrating Slackbot with Watson discovery newsapp:

### 4.3.1 Creating the slackbot:

The *bot* is to be created in the slack, as shown in the figure below and the API key for the bot is created and saved

[Browse Apps](#) > [Custom Integrations](#) > [Bots](#) > [Edit configuration](#)



## Bots

Added by vaishmurali4 on May 10th, 2020

Disable • Remove

Run code that listens and posts to your Slack team just as a user would.

### Setup Instructions

Please refer to our [bot user API documentation](#), which tells you everything you need to know about setting up a bot integration.

### Integration Settings

#### API Token

The library you are using will want an API token for your bot.

xoxb-1120789270052-1107879355478-95H1At4VEN2M4NHQFzFPQr0

[Regenerate](#)

⚠

Be careful when sharing bot user tokens with applications. Do not publish bot user tokens in public code repositories. [Review token safety tips.](#)

#### Customize Name

Choose the username for this bot.

newssearchengine

### 4.3.2 Configuring the slack bot:

Once the slackbot is created, we have to integrate the slackbot by giving the *slack token* into the downloaded *.env file* along with the *API key* and discovery credentials. Then install and start the application by using commands ***npm install*** and then ***npm start***. After that you will be seeing the output as follows:

```
Microsoft Windows [Version 10.0.17763.914]
(c) 2018 Microsoft Corporation. All rights reserved.

C:\Users\hai>cd watson-discovery-news

C:\Users\hai\watson-discovery-news>npm start

> watson-discovery-news@1.0.0 start C:\Users\hai\watson-discovery-news
> node --max_old_space_size=512 app.js




Initializing Botkit v0.7.5
info: ** No persistent storage method specified! Data may be lost when process shuts down.


*****
* WARNING: Your bot is operating without recommended security mechanisms in place. *
* Initialize your Botkit controller with a clientSigningSecret paramter to enable *
* verification that all incoming webhooks originate with Slack: *
* * *
* var controller = new Botkit.slackbot({clientSigningSecret: <my secret from slack>}); *
* * *
*****
>> Botkit docs: https://botkit.ai/docs/readme-slack.html#securing-outgoing-webhooks-and-slash-commands
>> Slack docs: https://api.slack.com/docs/verifying-requests-from-slack


Watson Discovery News Server running on port: 3000
Browserslist: caniuse-lite is outdated. Please run next command `npm update`
notice: ** BOT ID: newssearchengine ...attempting to connect to RTM!
notice: RTM websocket opened
```




## Bot on slack:


 **vaishmurali4** 12:33 PM  
[@newssearchengine](#) hii!!!  
 1 


 **newssearchengine** APP 12:33 PM  
Hello.


 **vaishmurali4** 12:34 PM  
[@newssearchengine](#) news please


 **newssearchengine** APP 12:34 PM  
Hi there!

What news are you interested in?

 **vaishmurali4** 12:37 PM  
marvel

 **newssearchengine** APP 12:37 PM  
You want me to search for news articles about [marvel](#)?

 **vaishmurali4** 12:37 PM  
s

 **newssearchengine** APP 12:38 PM  
OK searching...

<http://massmovement.co.uk/marvel-unlimited-expands-this-april/> (edited)

 **Mass Movement**

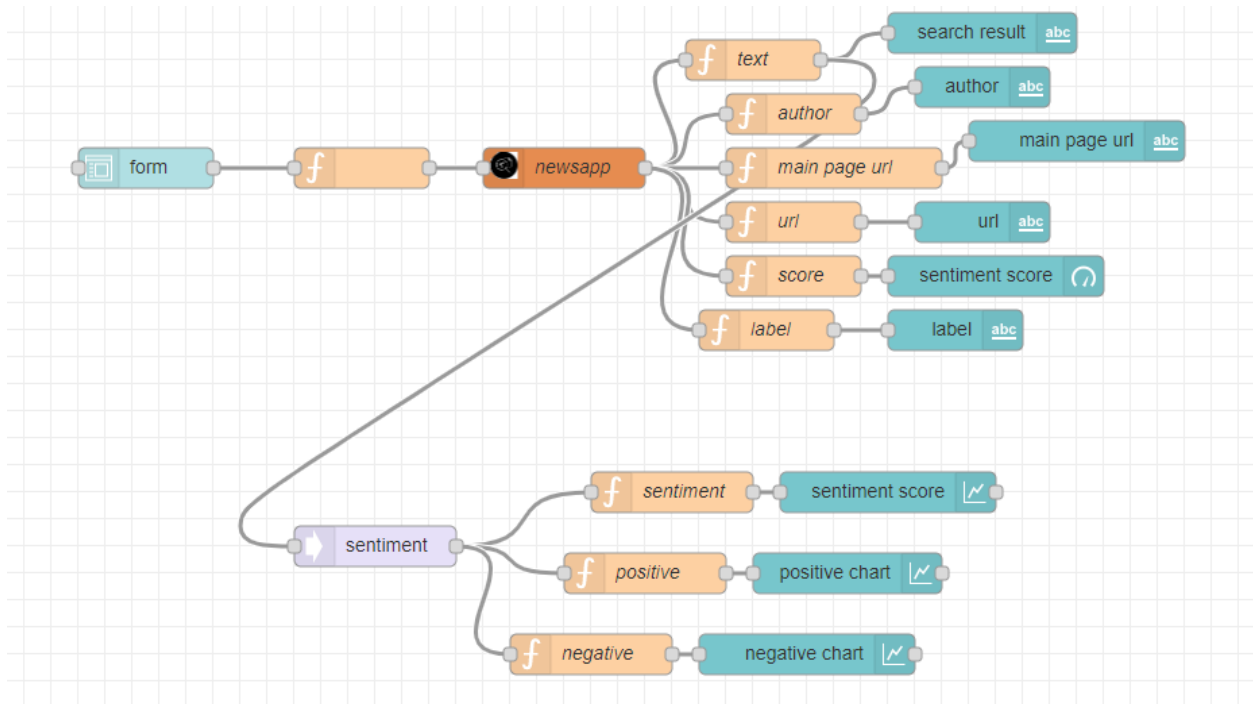
[Marvel Unlimited Expands This April... - Mass Movement](#)

Marvel Unlimited, Marvel's digital comics subscription service, offers members unlimited access to over 27,000 issues of Marvel's classic and newer titles, delivered digitally through your desktop web browser and the award-winning Marvel Unlimited mobile app.

Apr 8th (894 kB) ▼

## 4.4 Creating App user interface using Node-red:

We can able to access the node-red from the IBM cloud platform. Once we created the account in Node-red, it takes to the node-red portal and we have to integrate the nodes in that by *dragging and dropping* from the pre-defined **palettes** or can be downloaded from the **json files**. The flow of the node is thus formed will be as follows:



### Nodes used:

1. Form node
2. Function node
3. Text node
4. Sentiment node
5. Gauge node
6. Chart node
7. Discovery node

## 4.5 Integrating Watson discovery service with UI:

After building the Node-red flow like the one shown above, we have to code each of the *function nodes* to perform the desired function based on its usage to the flow. **Discovery node** is the most important node as it is *integrating* the Watson Discovery service to the node-red by *adding service credentials* into the discovery node as shown below ,

Edit discovery node

Delete

Cancel

Done

⚙️ Properties

⚙️ 📄 🖨️

🔑 Name

newsapp

👤 Username

vaishu

🔑 Password

.....

🔑 API Key

.....

🔑 Service Endpoint

https://api.eu-gb.discovery.watson.cloud.ibm.co

📖 Method:

Search in collection ▼

🔑 Environment ID

system

🔑 Collection ID

news-en

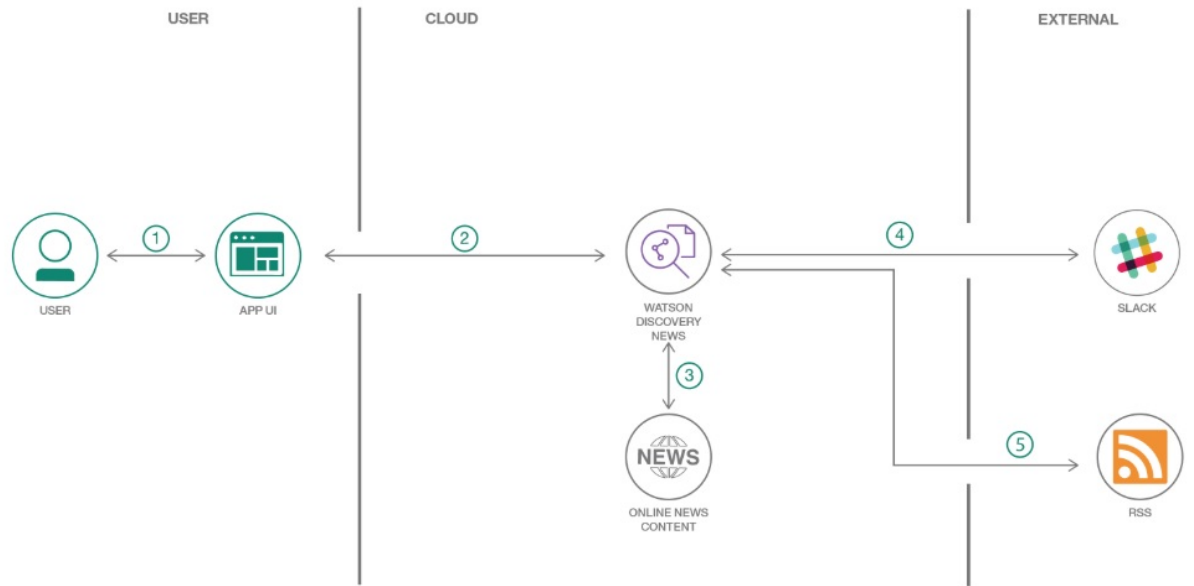
🔑 Number of documents

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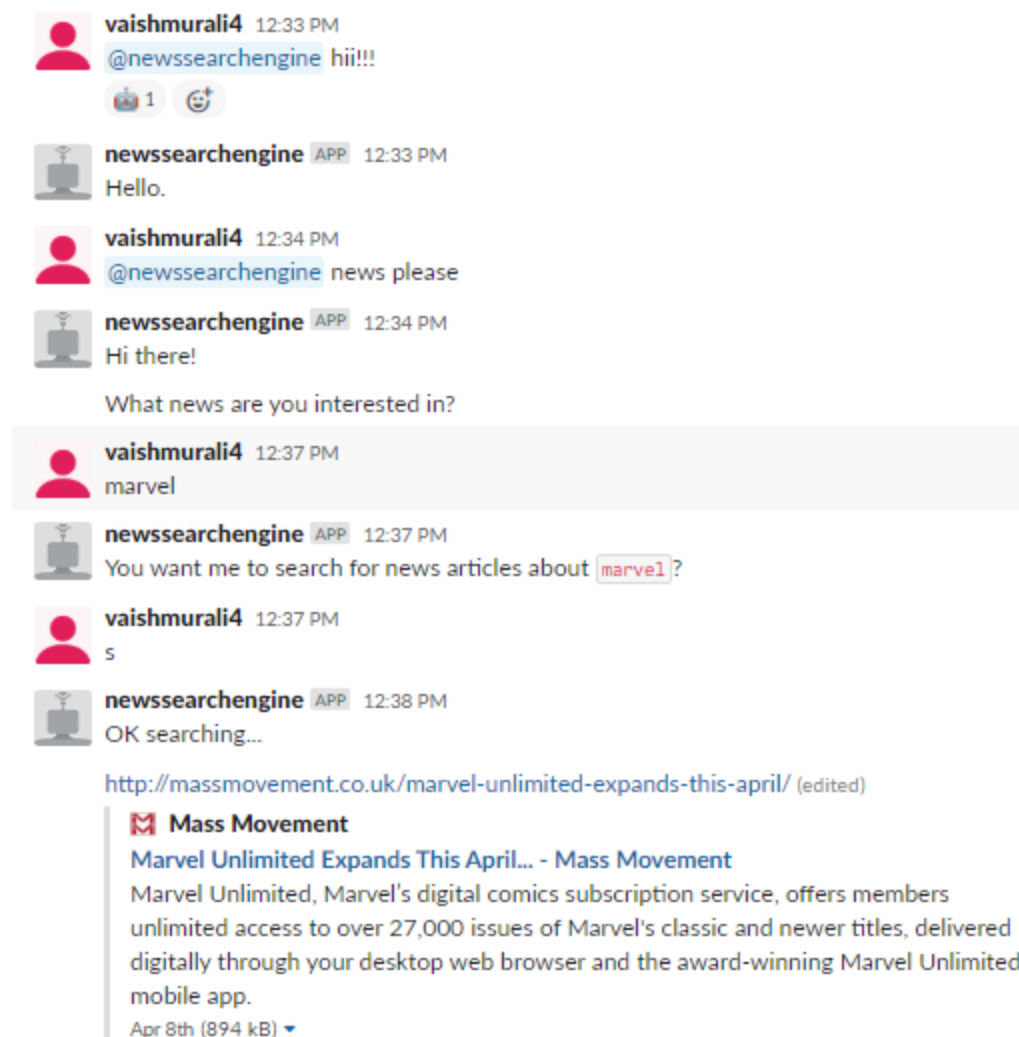
## 5. FLOWCHART:

Flow



## 6. RESULT:

Bot on slack:



The screenshot shows a Slack chat interface. At the top, a user named 'vaishmurali4' sends a message '@newssearchengine hii!!!' at 12:33 PM. Below it, the bot 'newssearchengine' responds with 'Hello.' at 12:33 PM. The user then says '@newssearchengine news please' at 12:34 PM. The bot replies 'Hi there!' at 12:34 PM. The user asks 'What news are you interested in?' and then 'marvel' at 12:37 PM. The bot responds 'You want me to search for news articles about **marvel**?' at 12:37 PM. The user says 's' at 12:37 PM. The bot then says 'OK searching...' at 12:38 PM. Finally, the bot shares a link 'http://massmovement.co.uk/marvel-unlimited-expands-this-april/' (edited) and a preview of a Mass Movement article titled 'Marvel Unlimited Expands This April...'.

**vaishmurali4** 12:33 PM  
@newssearchengine hii!!!  
👍 1 😊

**newssearchengine** APP 12:33 PM  
Hello.

**vaishmurali4** 12:34 PM  
@newssearchengine news please

**newssearchengine** APP 12:34 PM  
Hi there!

What news are you interested in?


**vaishmurali4** 12:37 PM  
marvel

**newssearchengine** APP 12:37 PM  
You want me to search for news articles about **marvel**?

**vaishmurali4** 12:37 PM  
s

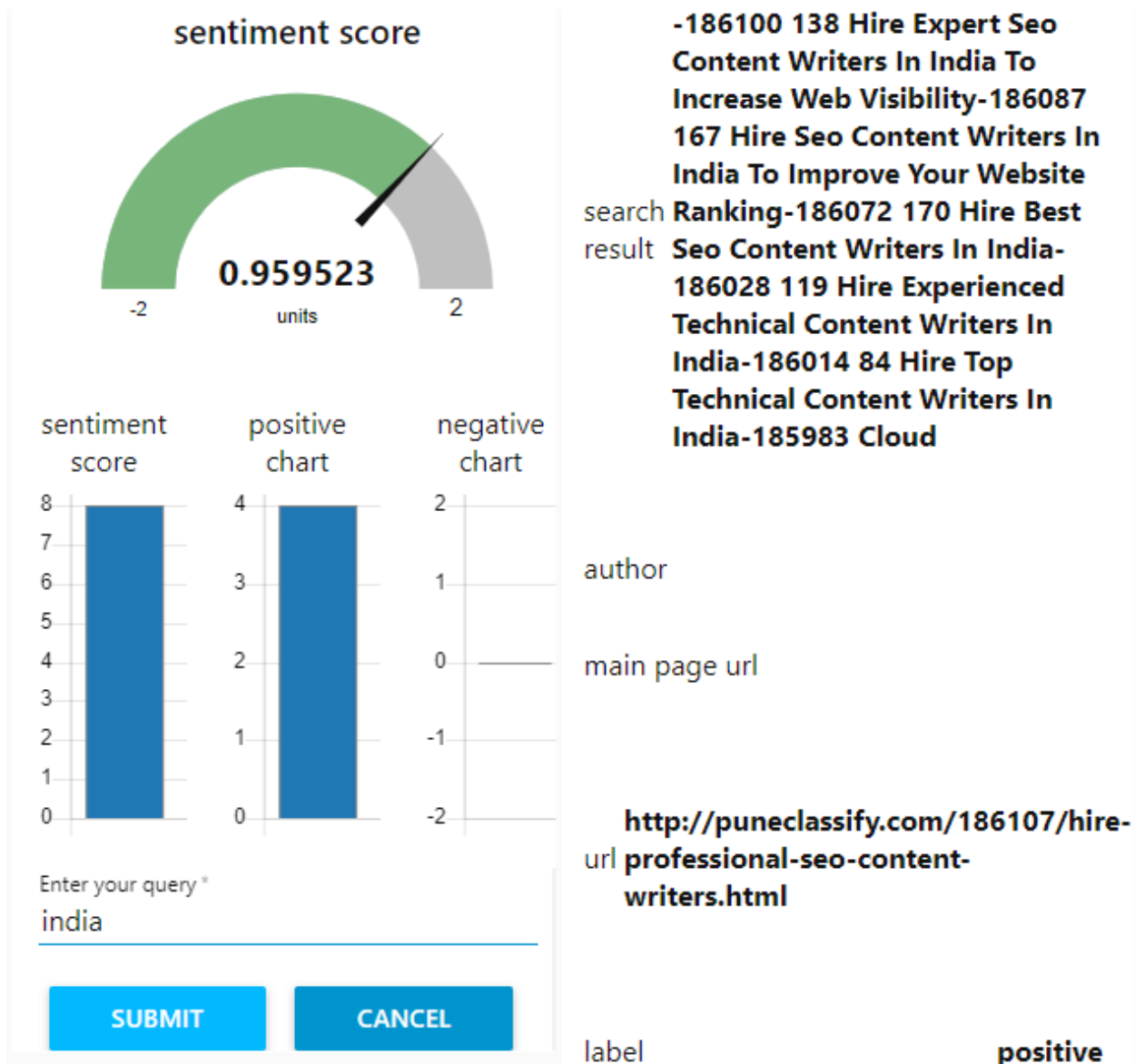
**newssearchengine** APP 12:38 PM  
OK searching...

<http://massmovement.co.uk/marvel-unlimited-expands-this-april/> (edited)

 **Mass Movement**  
**Marvel Unlimited Expands This April... - Mass Movement**  
Marvel Unlimited, Marvel's digital comics subscription service, offers members unlimited access to over 27,000 issues of Marvel's classic and newer titles, delivered digitally through your desktop web browser and the award-winning Marvel Unlimited mobile app.  
Apr 8th (894 kB) ▼

## User Interface of Node-red flow:

The UI shown is the result of the node red flow. Here, the *main page url* and *author* are empty because the news here produced do not have any specified author or main url. SO it displays only the *current URL*.



## 7. ADVANTAGES AND DISADVANTAGES:

- The web application provides interactive sentiment analysis.
- It can be accessed through more than one platform that is through slack.
- It collects and delivers the most recent data.
- It does not have additional features like storing news history.
- It does not provide a stand-alone app rather uses a web application.

## 8. APPLICATIONS:

- This web applications can be used by any user in need of accurate and fast results.
- Can be used by firms and organizations.
- Can be used in stock market to make predictions.

## 9. CONCLUSION:

This project gives some basic working knowledge of the Watson Discovery Service and showed you how to use Discovery along with JavaScript and Node.js to build your own news mining web application. It also gives in sight into real-world applications of AI and helps us understand Slack better.

## 10. FUTURE SCOPE:

- The web application can be integrated with cloud and made into a mobile app to use it on-the-go.
- Additional sentiments can be added in the UI.
- Related and trending news topics can be shown to the user.

## 11. BIBLOGRAPHY:

<https://slack.com/intl/en-in/>  
<https://www.ibm.com/cloud/get-started>  
<https://www.ibm.com/watson/products-services>  
<https://nodered.org/>  
<https://github.com/ibm/watson-discovery-news>

