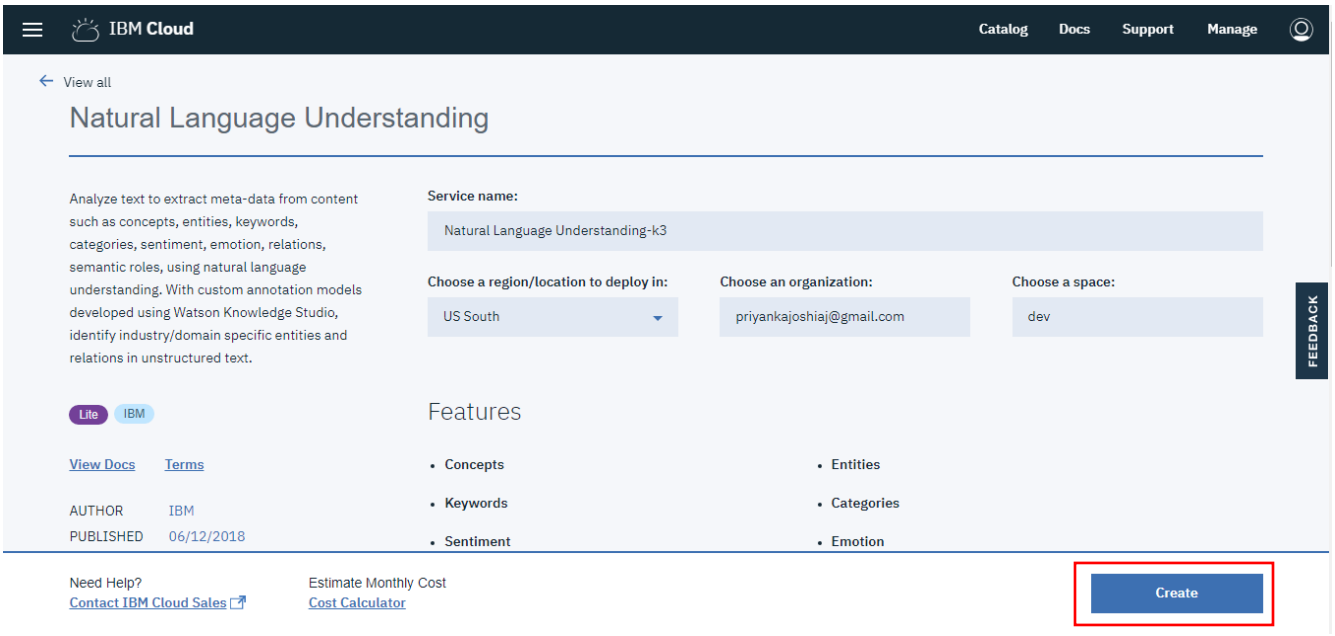
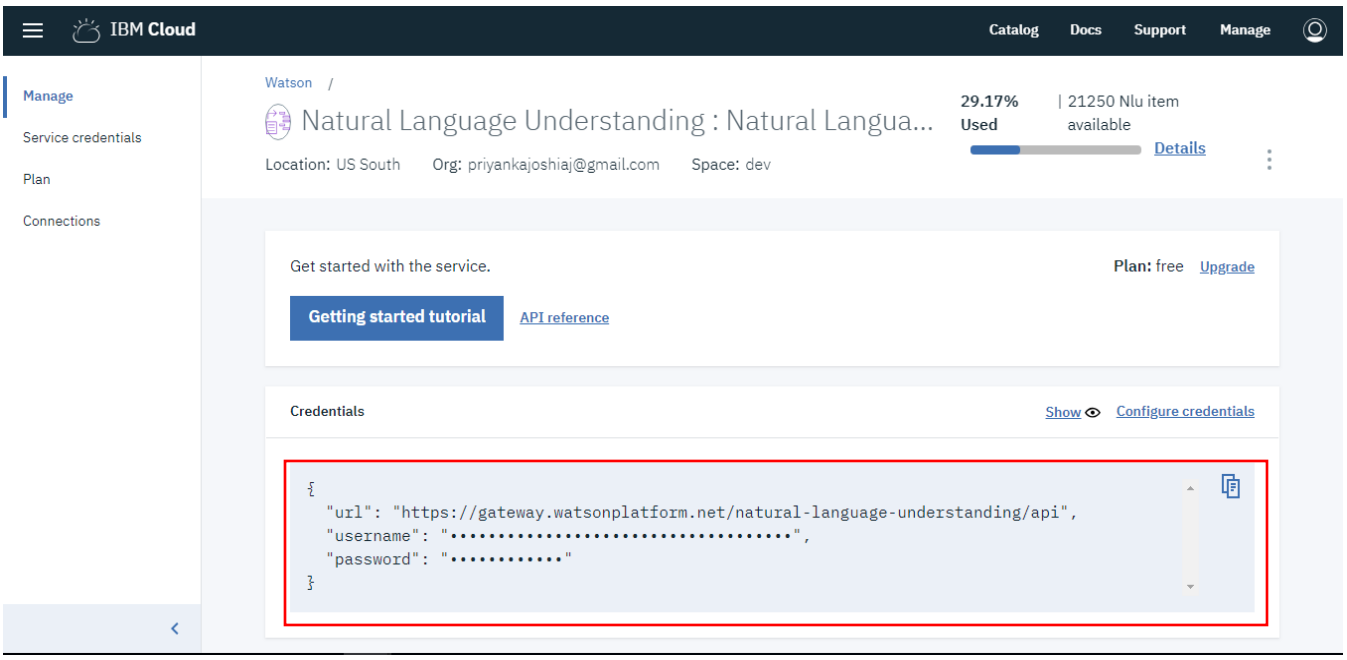
Getting Started with IBM Watson

Project: Sentiment analysis of text data using IBM Watson's Natural language understanding and Tone analyzer

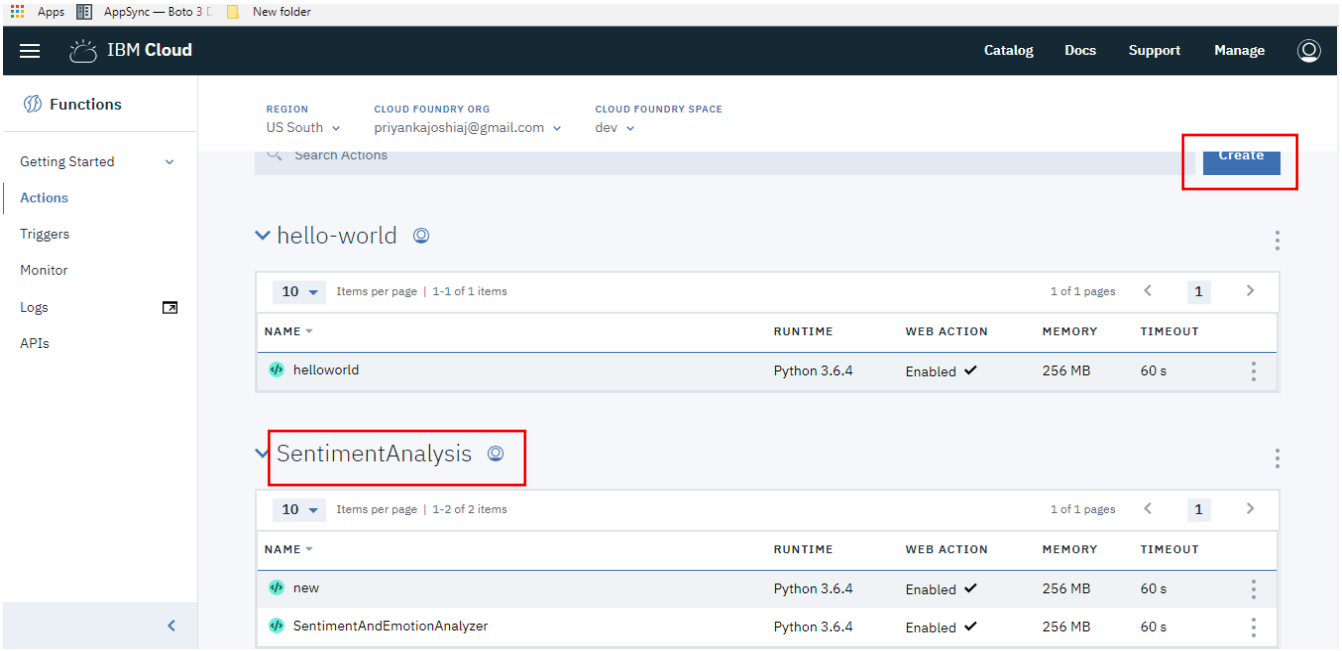
- **Step 1:** Create an IBM Watson account for free (trial)
- **Step 2:** Create a Natural Language understanding service by verifying the autofill details and choosing the pricing plan as per your requirement (I chose free one)



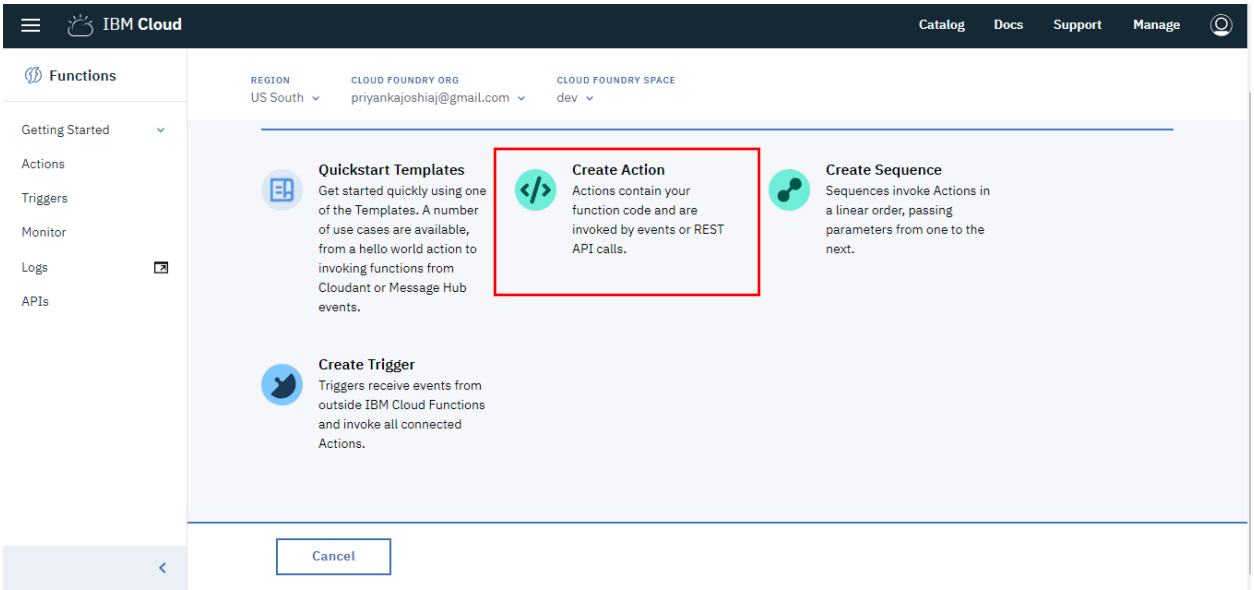
- Note down your Username and password to access the service later



- **Step 3:** Create Tone analyzer service just like NLU and note the credentials of that as well
- **Step 4:** From IBM Cloud Menu select Functions to create Actions, Actions contain the function code and are invoked by events or REST API calls.
- **Step 5:** Create an action as Sentiment and Emotion Analyzer and save it to a package (folder) using the below instructions



- Choose the create Action option if you want to write the function from scratch or choose from an available template



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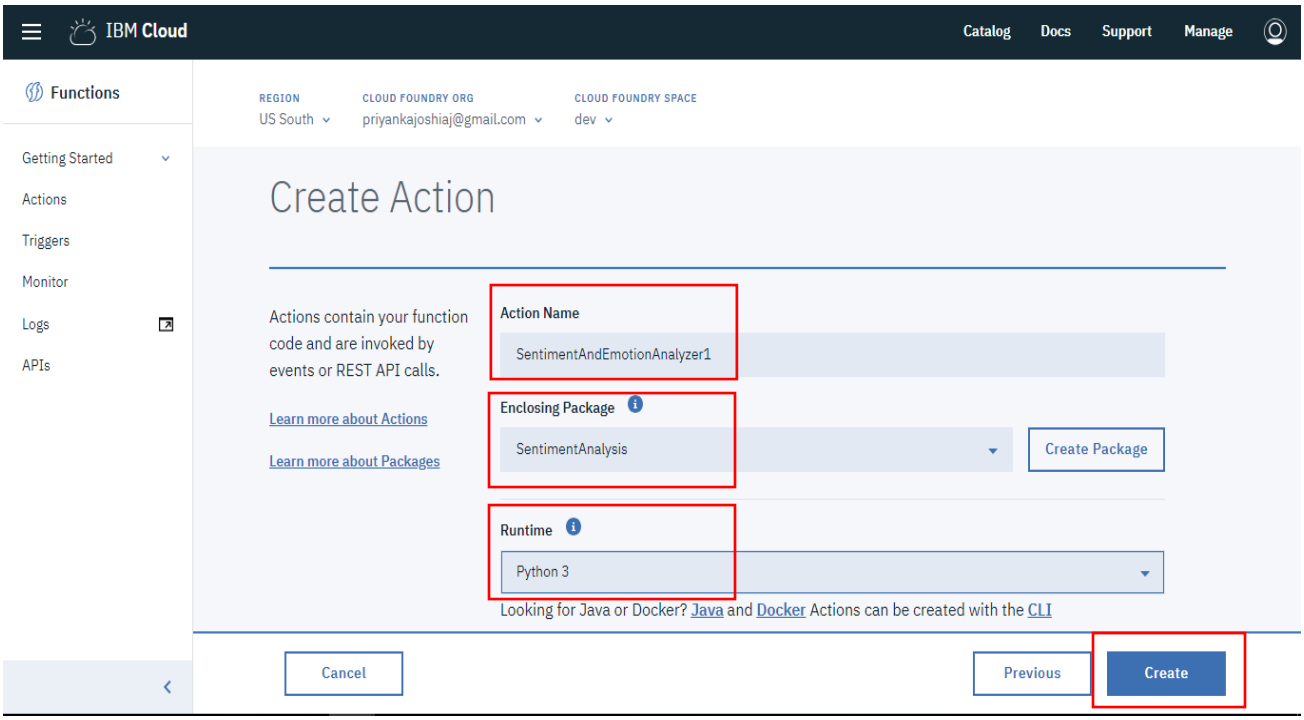
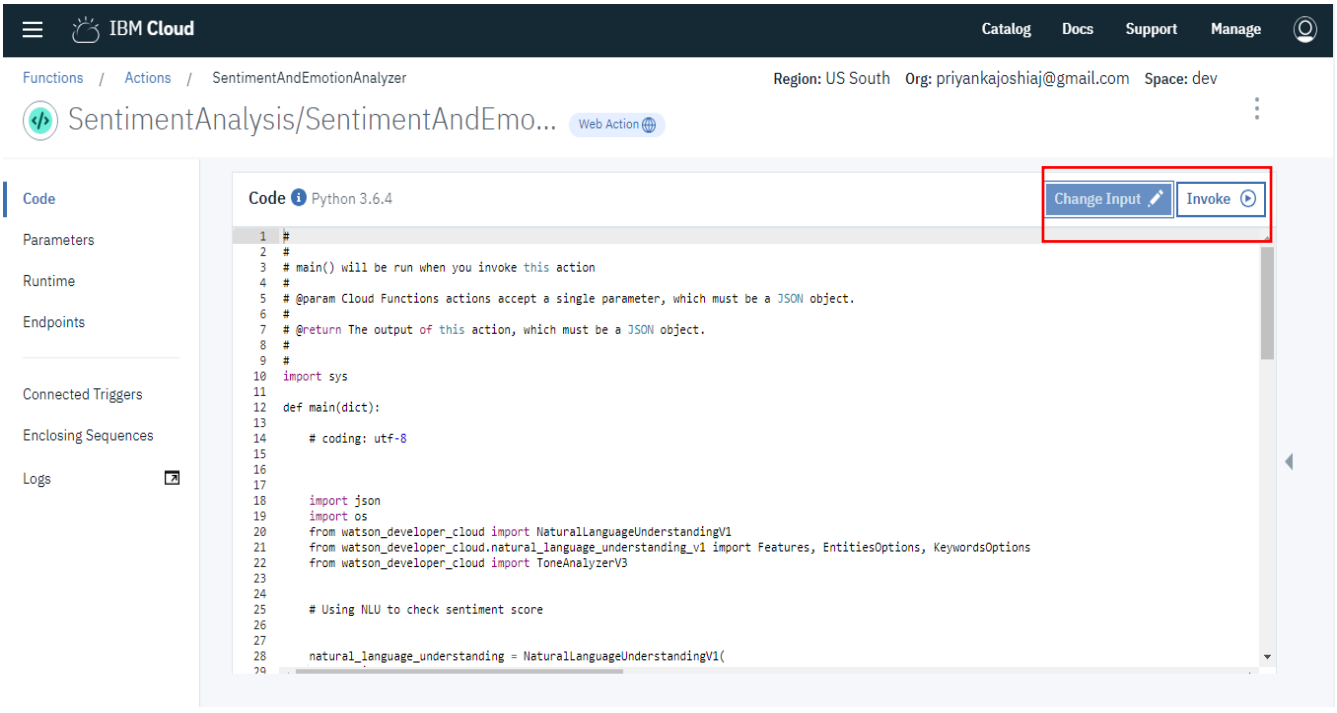
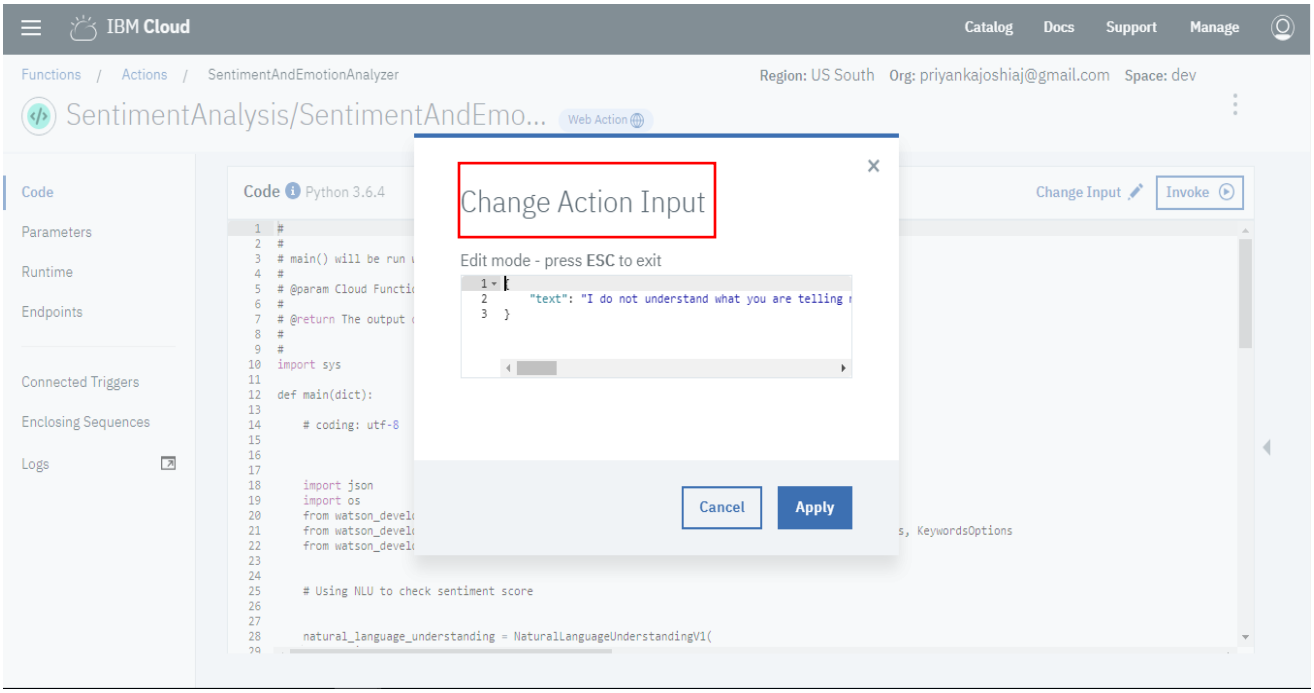
- Choose the language you want, give your function a name and select an existing package or create one



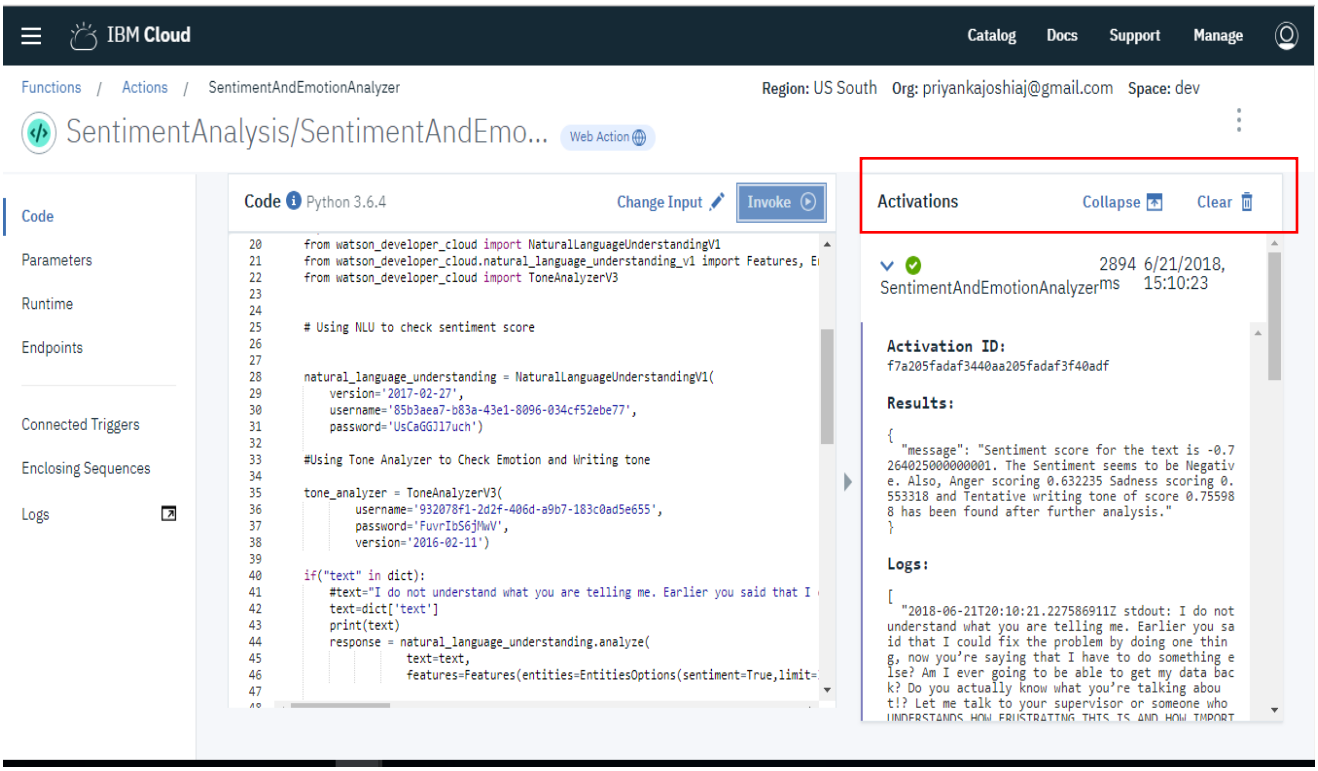
- **Step 6:** Write the code to access the NLU and Tone analyzer service and test that by giving text input in JSON format



- **Step 7:** Change the input using Change Input (after opening the Action in Manage Action Mode)



- **Step 8:** Invoke the function to test

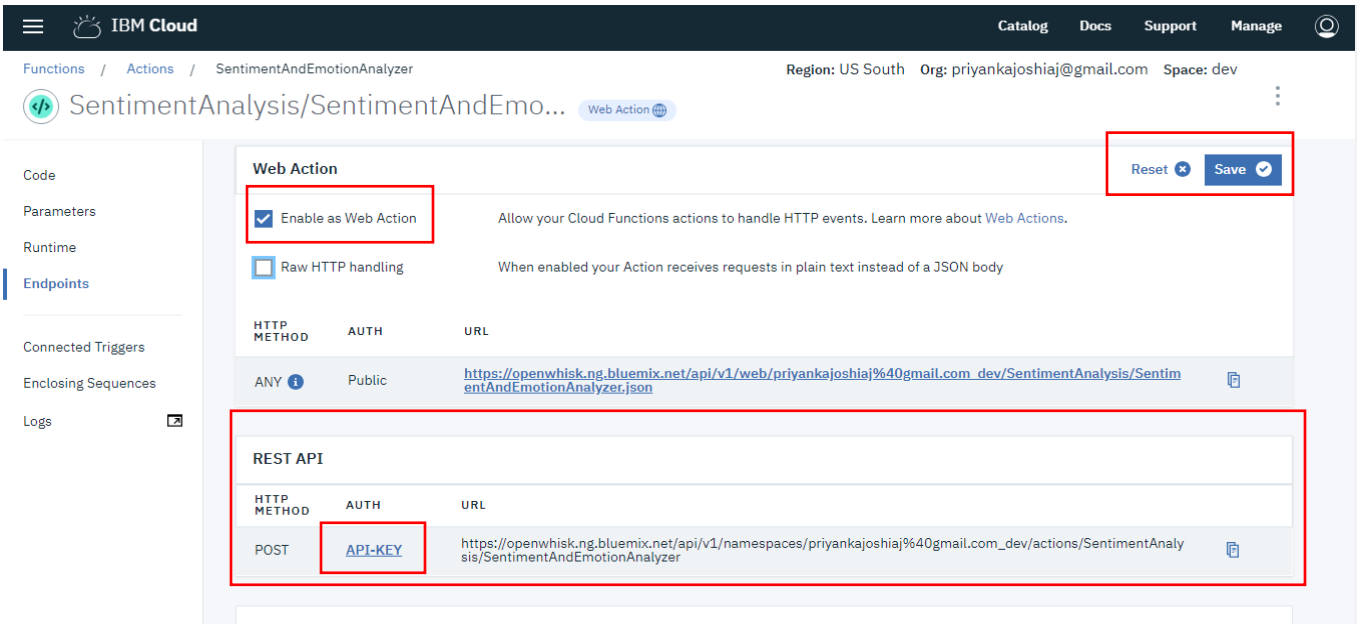


- **Input:**
  - {"text": "I do not understand what you are telling me. Earlier you said that I could fix the problem by doing one thing, now you're saying that I have to do something else? Am I ever going to be able to get my data back? Do you actually know what you're talking about!? Let me talk to your supervisor or someone who UNDERSTANDS HOW FRUSTRATING THIS IS AND HOW IMPORTANT MY INFORMATION THAT I LOST WAS. This needs to be fixed NOW."}
- **Output:**
  - **Activation ID:**
    f7a205fadaf3440aa205fadaf3f40adf
  - **Results:**

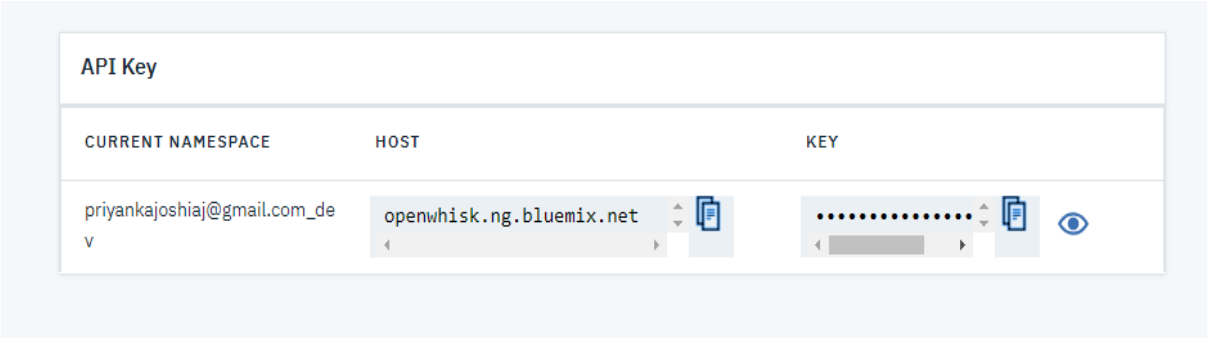
{
"message": "Sentiment score for the text is -0.7264025000000001. The Sentiment seems to be Negative. Also, Anger scoring 0.632235 Sadness scoring 0.553318 and Tentative writing tone of score 0.755988 has been found after further analysis."
}

  - **Logs:**
    []

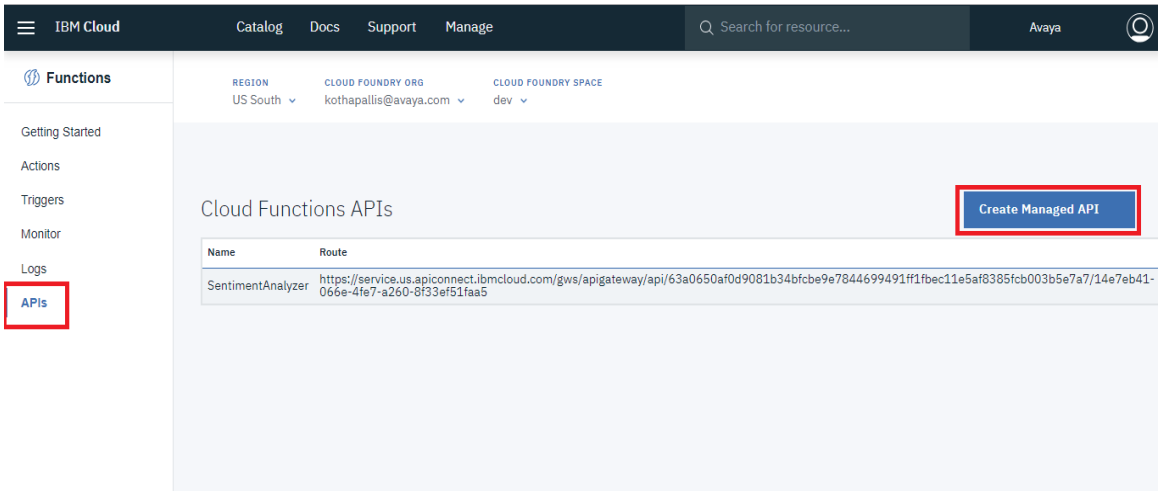
- **Step 9:**
  - ***USING REST API call:***
    - Select Endpoints and enable as web action and save. Copy the URL for Rest API



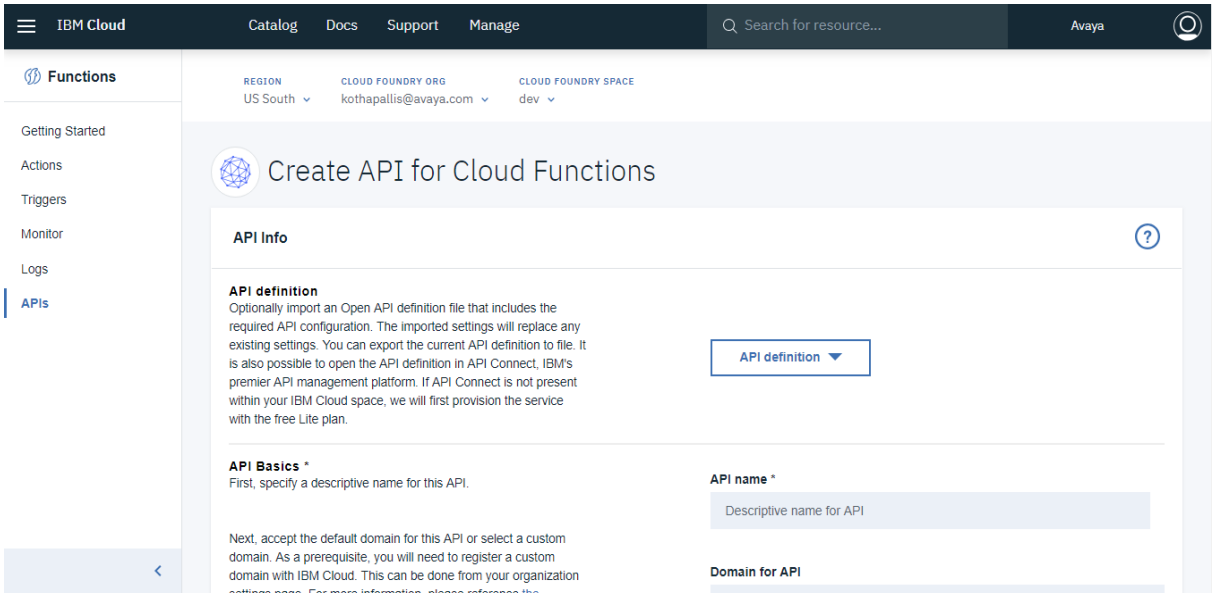
- Click on the API-Key link to get the UserName and Password for API authentication



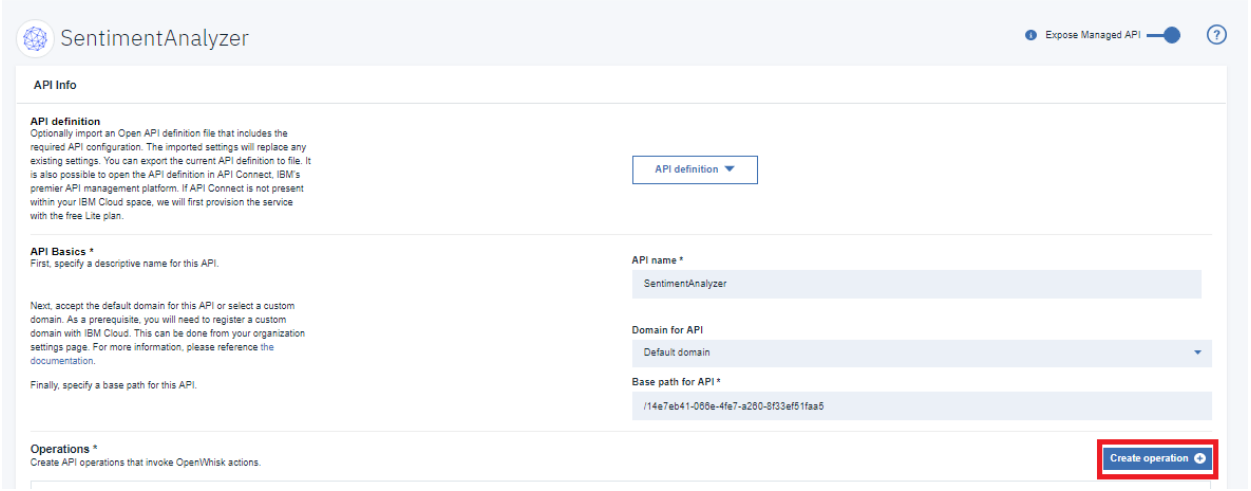
- Copy the key (the username and password are separated by ':' in the key
  - **<u>USING API Gateway</u>**
  - Go to the function menu , select APIs and click on create managed API



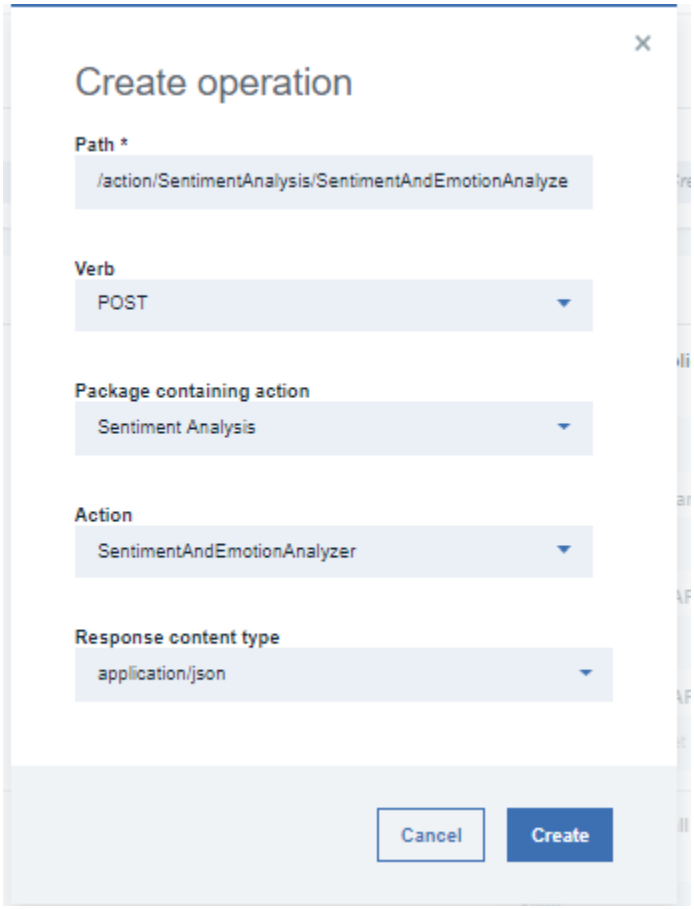
  - Select APIs and click IBM cloud Functions



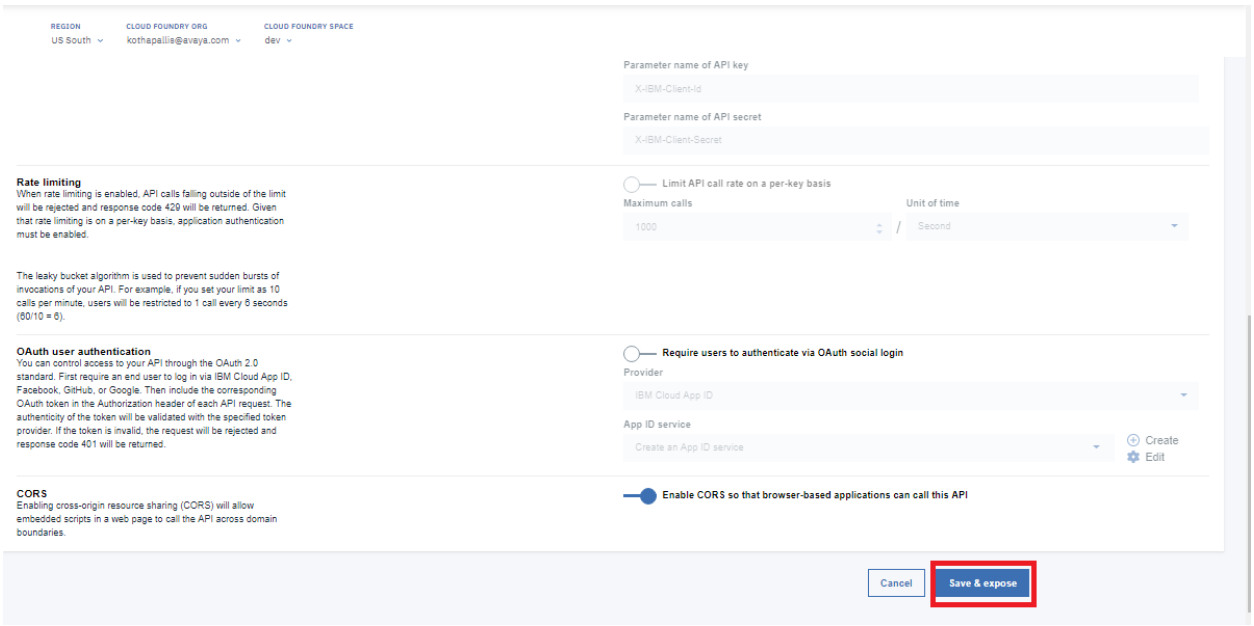
- Enter API Name, select domain and create operation



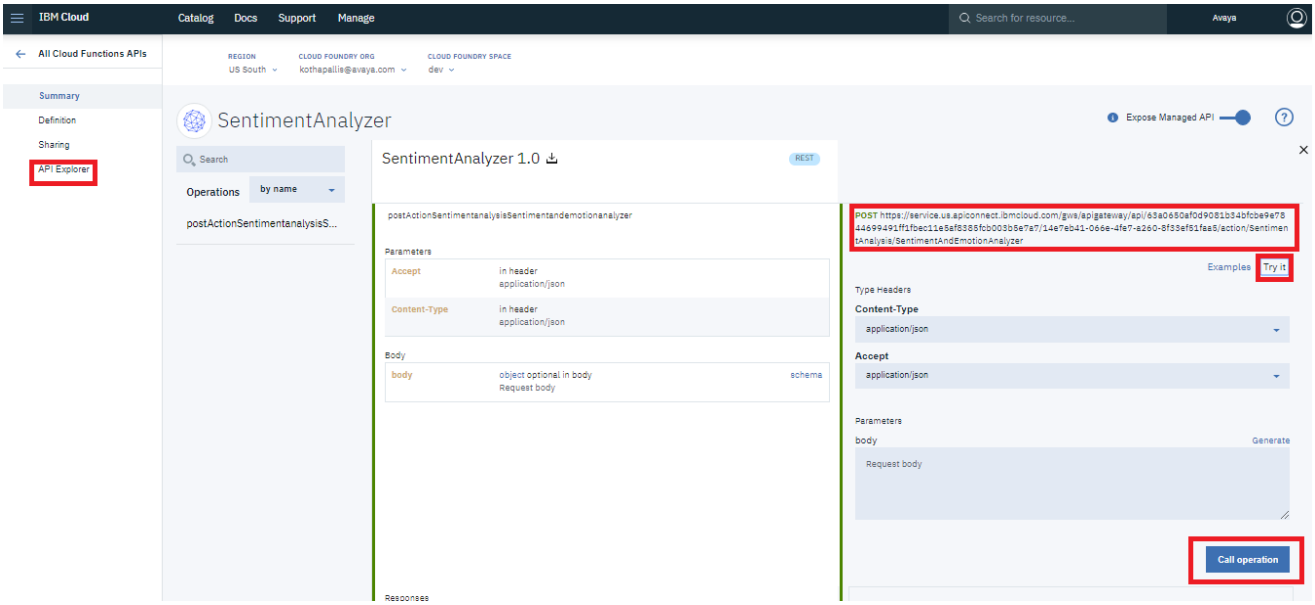
- Specify the action path, select the http option , select folder and action information and give Response type as application/json



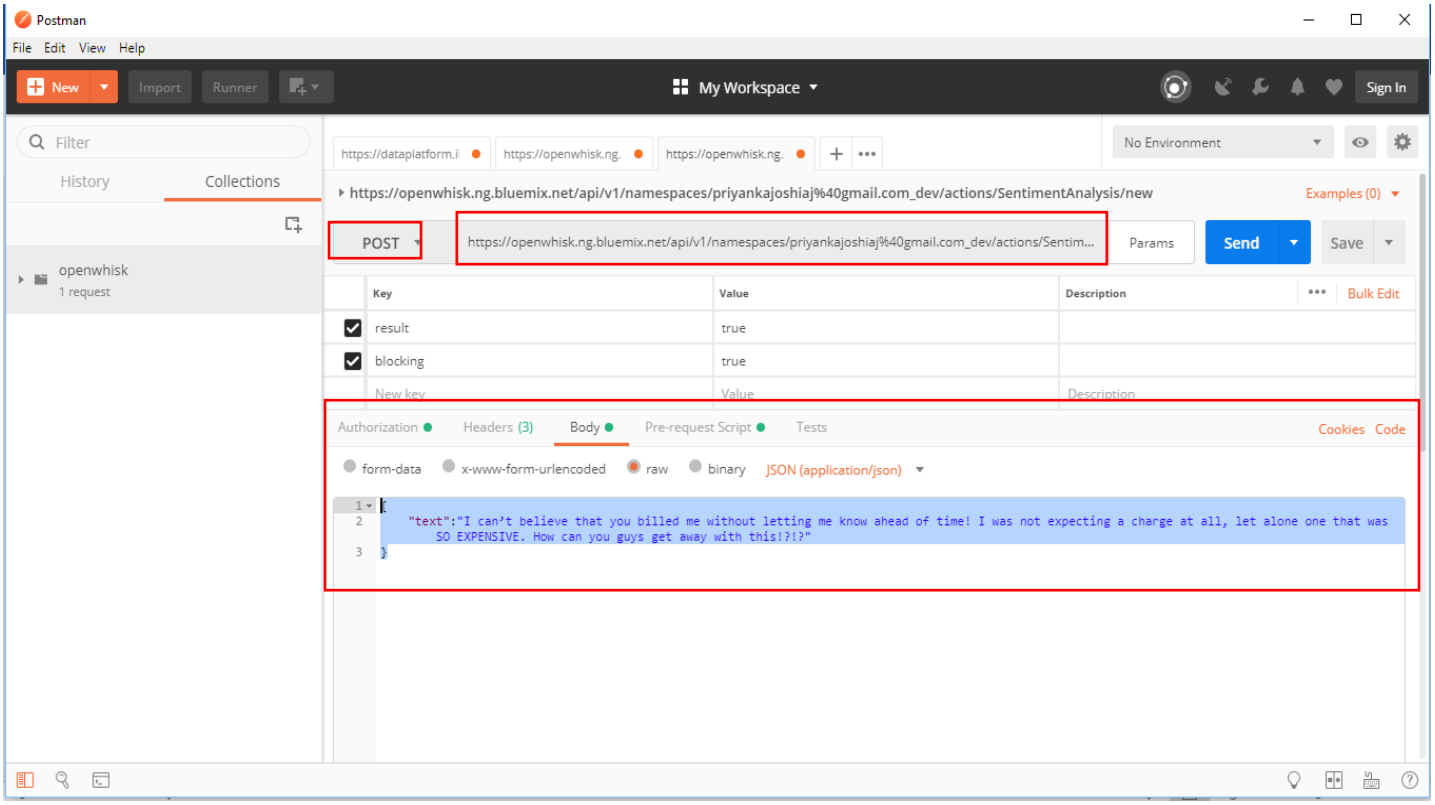
- Click on save & expose to create the api



- After saving successfully, test it in the API Explorer, copy the API link for testing it further using Postman
- You can also test it in the Explorer itself by clicking on Try it and giving the payload in the Body section and then clicking the call operation button



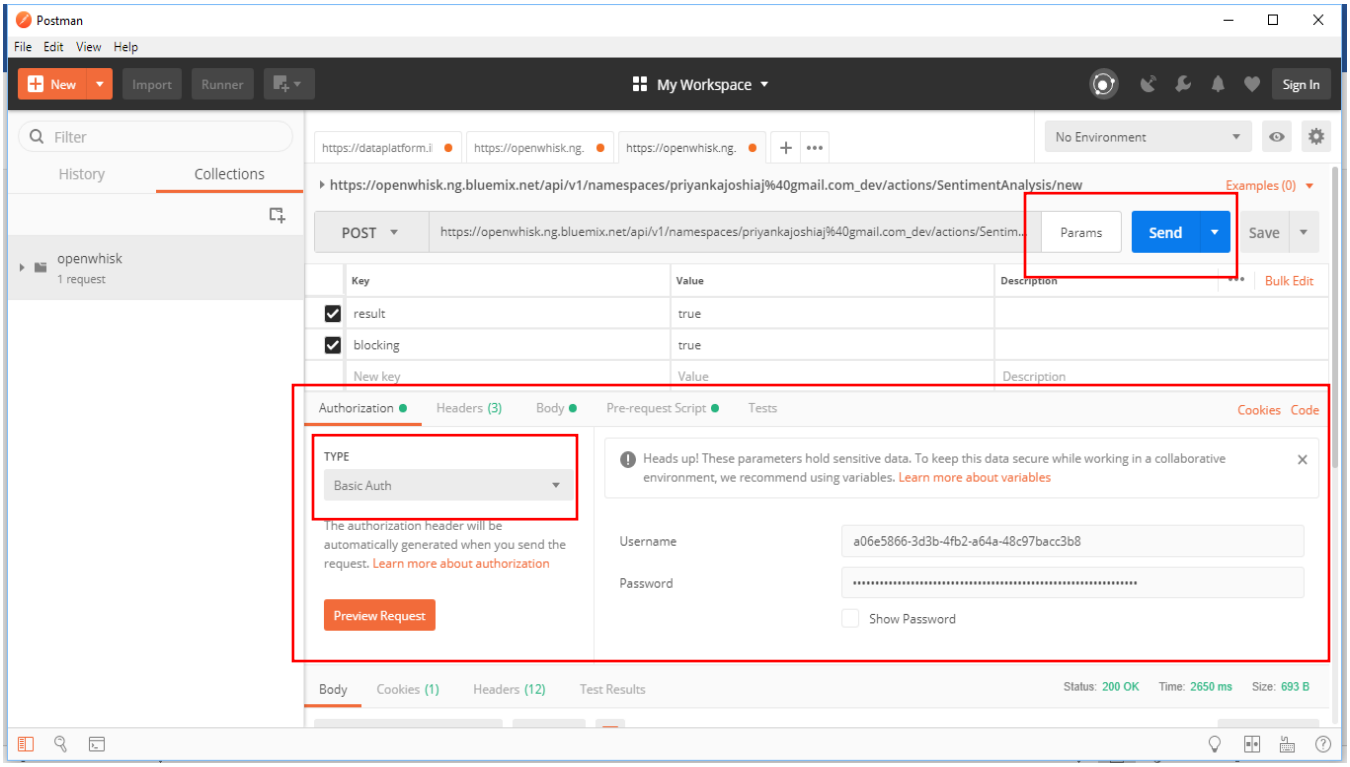
- **Step 10:** Use postman to send the input text dynamically using Rest API call



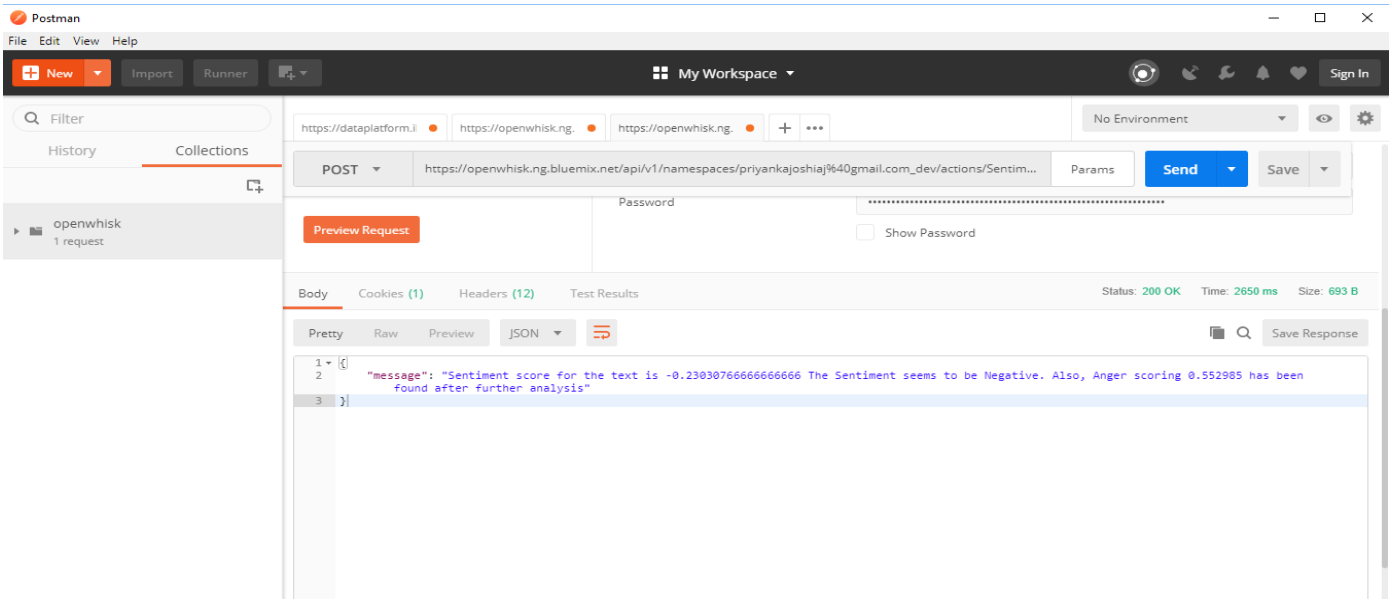
Use the POST option from the dropdown to give input from Postman

- Paste the URL copied earlier and put result as true and blocking as true in key value pair
- Set the input text in JSON format by selecting raw datatype in body and selecting JSON(application/JSON) from the drop down.
  - {"text": "I can't believe that you billed me without letting me know ahead of time! I was not expecting a charge at all, let alone one that was SO EXPENSIVE. How can you guys get away with this!?!?"}
- Paste the input in console

- Set the Authorization as Basic Authentication and give the username and password you got from the Key in Step 9.

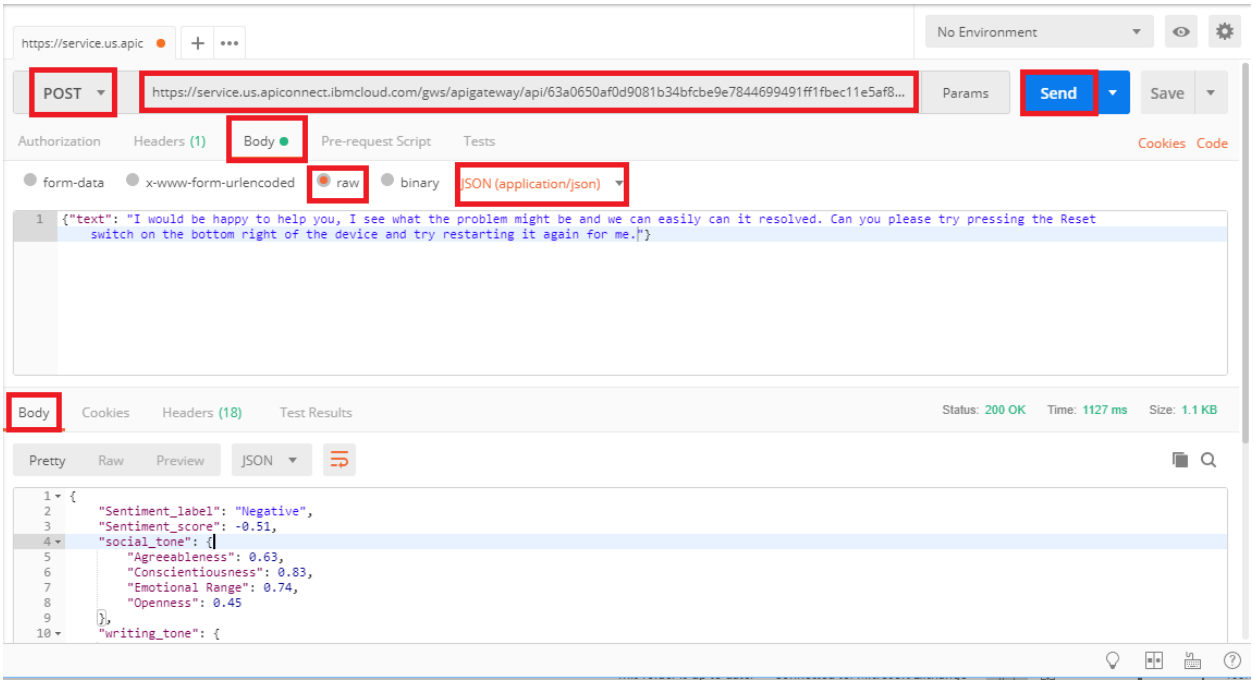


- The output would be like this



In case of API gateway no authentication is required

- Paste the URL copied from the API Section above
- Set the input text in JSON format by selecting raw datatype in body and selecting JSON(application/JSON) from the drop down.
- { "**text**": "I would be happy to help you, I see what the problem might be and we can easily can it resolved. Can you please try pressing the Reset switch on the bottom right of the device and try restarting it again for me." }
  i.e {"**text**":" <your text here>"}
- Paste the input in console, hit send to view the output as shown below.



- **Result:**


```
{
  "Sentiment_label": "Negative",
  "Sentiment_score": 0.51,
  "social_tone": {
    "Agreeableness": 0.63,
    "Conscientiousness": 0.83,
    "Emotional Range": 0.74,
    "Openness": 0.45
  },
  "writing_tone": {
    "Analytical": 0.65,
    "Tentative": 0.89
  }
}
```