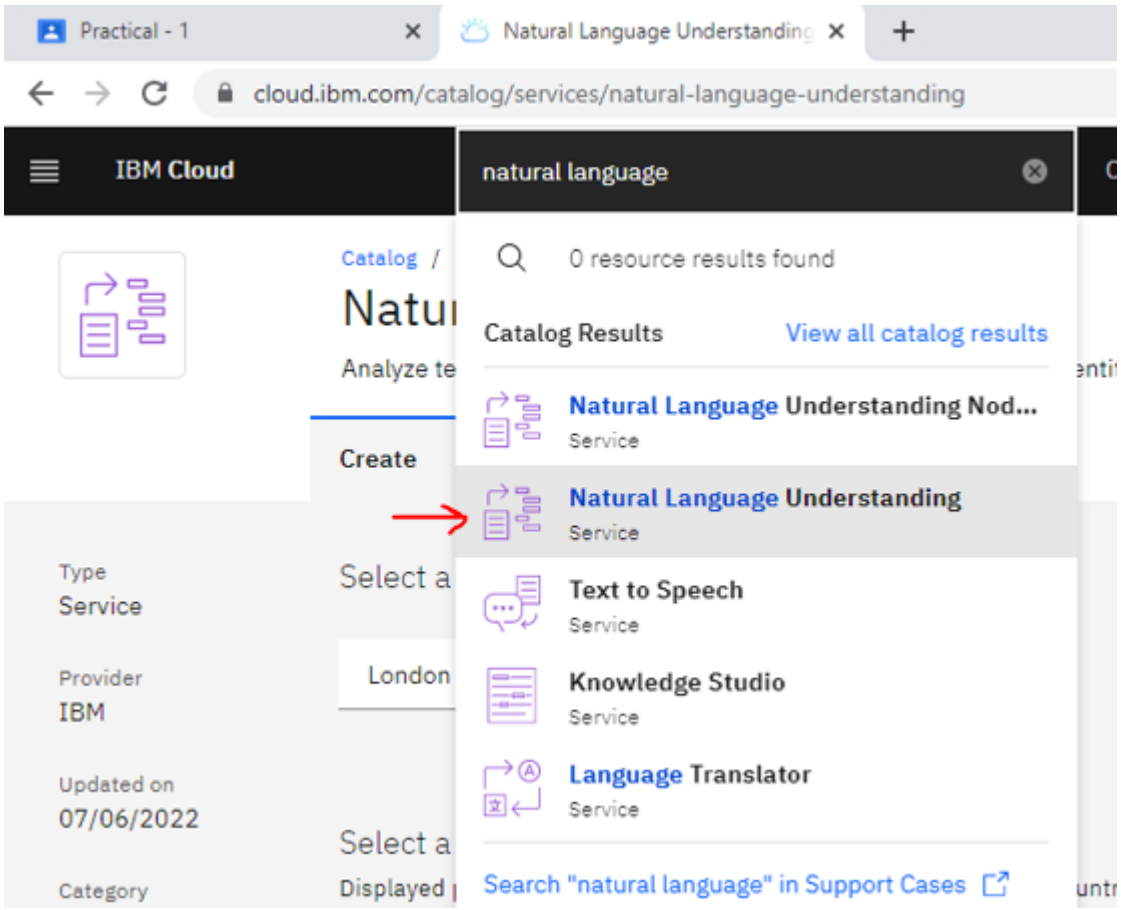
Institute of Computer Technology
B. Tech Computer Science and Engineering
Sub: Cognitive Computing (2CSE70E23)

PRACTICAL 1

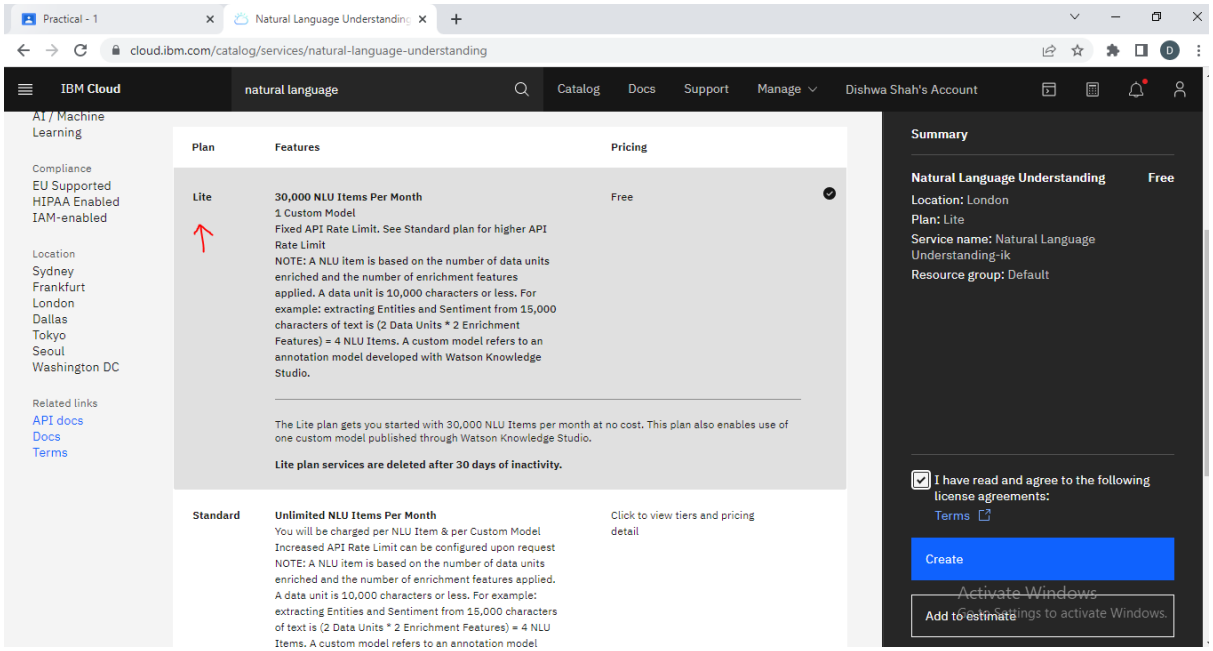
Task 1

Watson Natural Language Understanding Watson Natural Language Understanding uses natural language processing to analyse the semantic features of any text. Provide plain text, HTML, or a public URL, and Watson Natural Language Understanding returns results for the features that you specify. We will analyse news article.

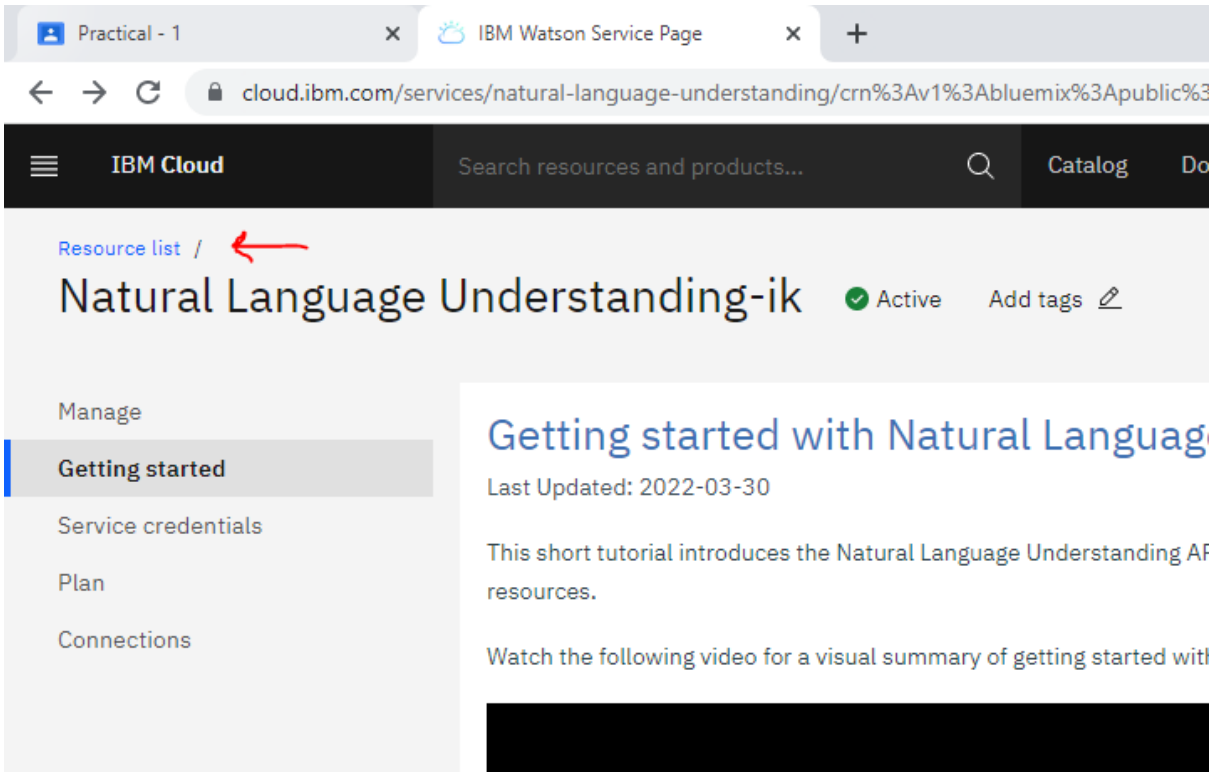
Go to IBM Cloud and search for Natural Language Understanding.



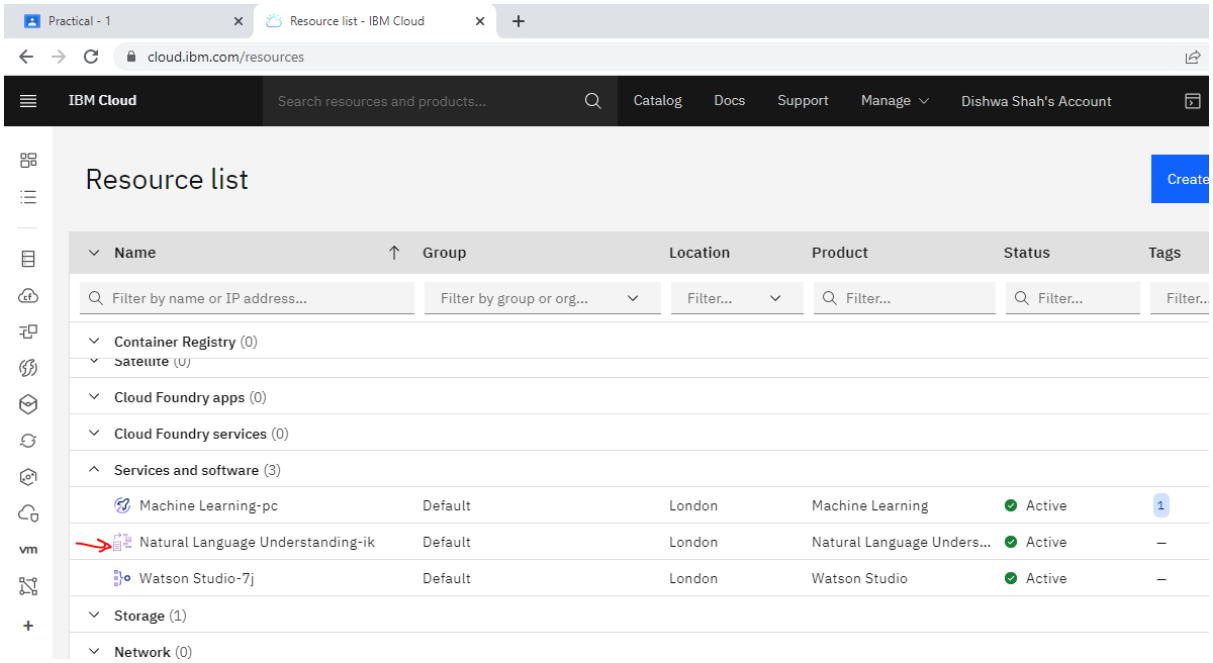
Select the Lite mode and Create a new environment.



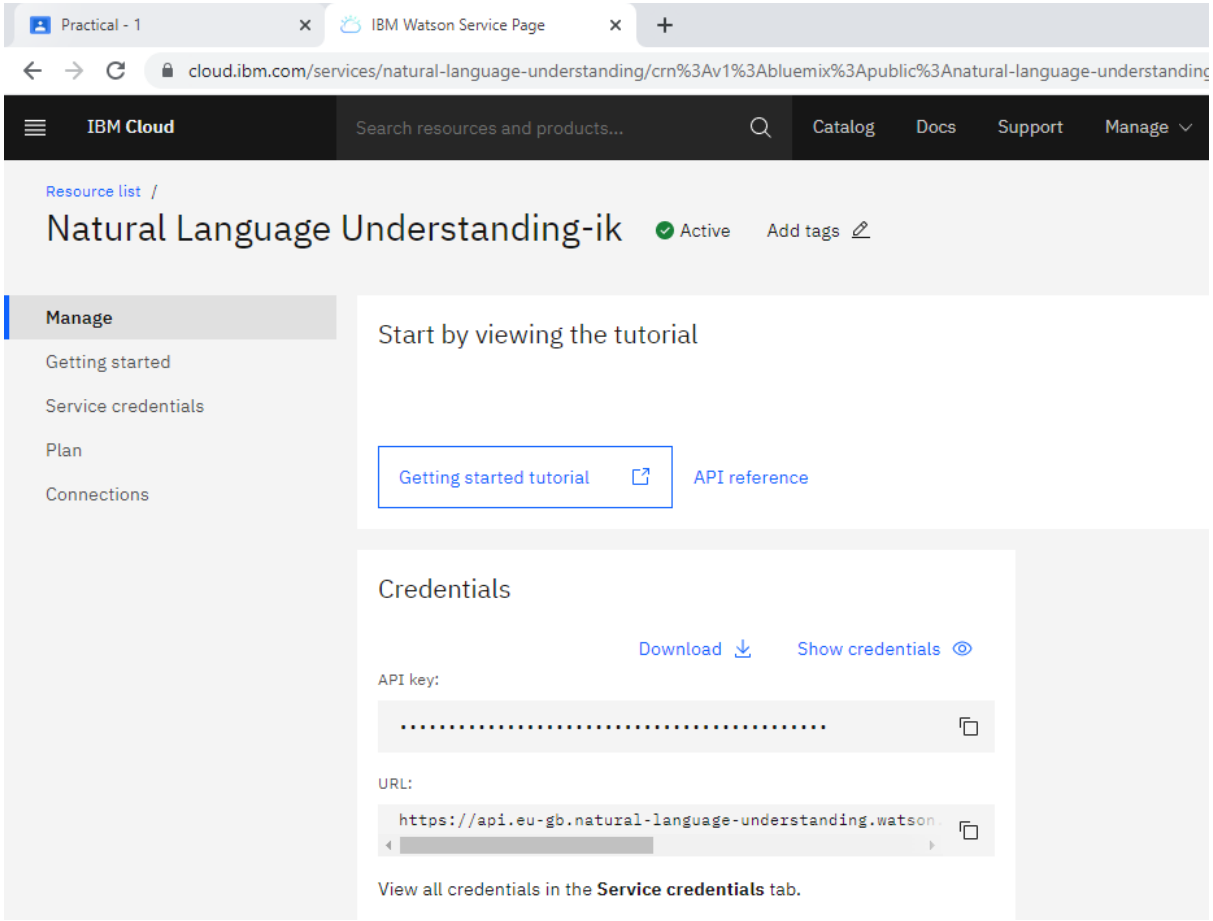
Go to the Resource list.



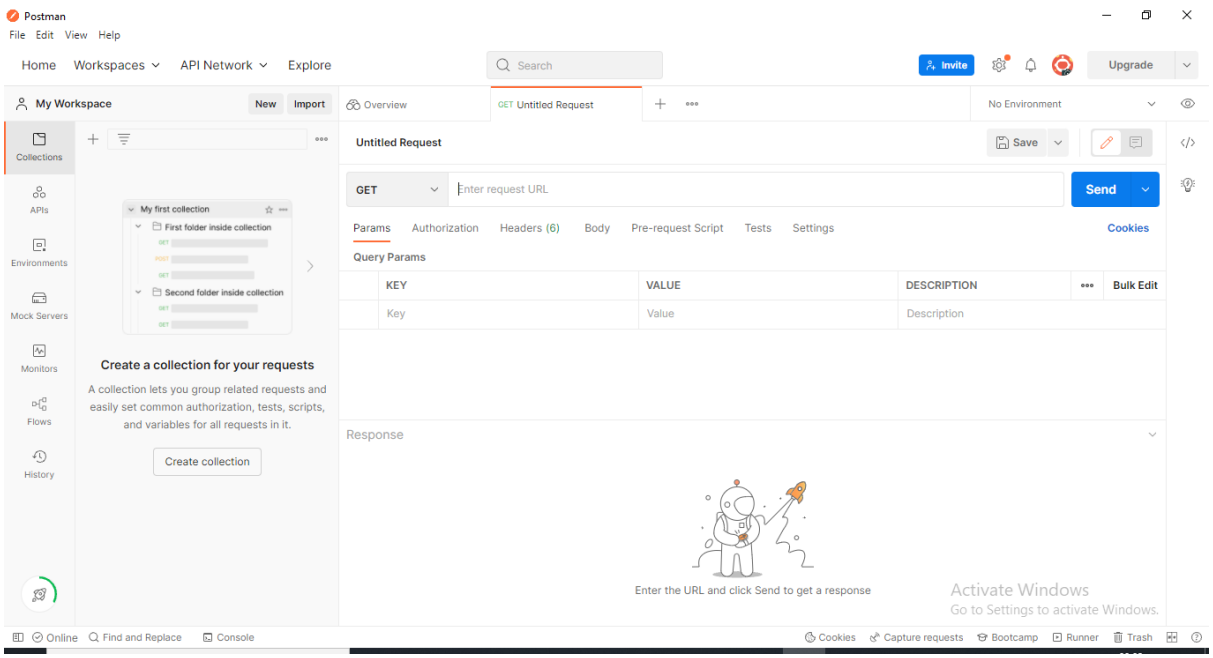
In resource list, we can see the different services available. In Services and software, select Natural Language understanding-ik.



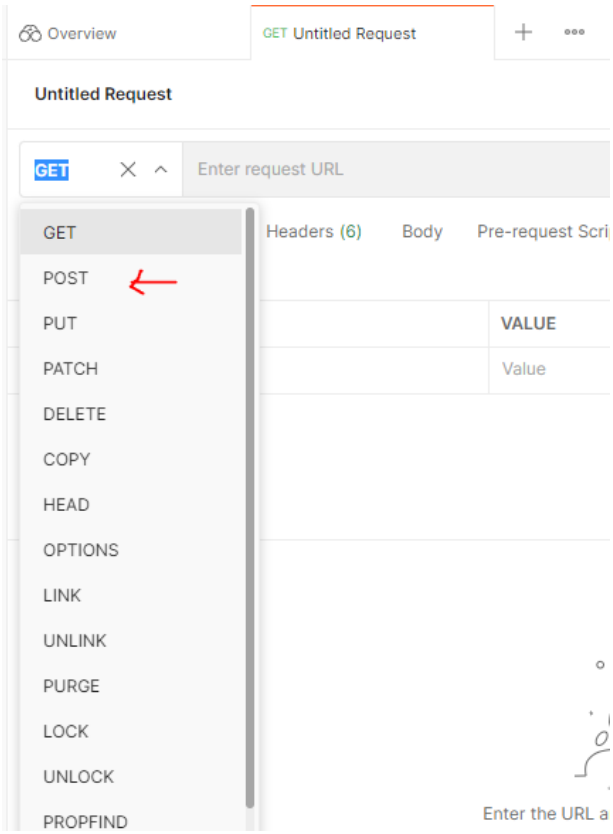
Go to Manage tab and copy the URL and API key. These unique URLs and API keys help us to run the services on a different applications.



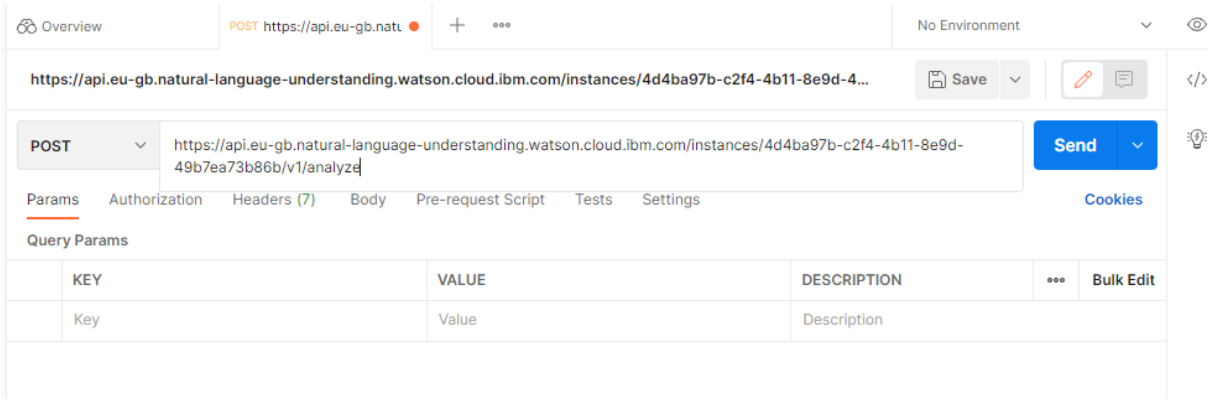
Open the Postman App.



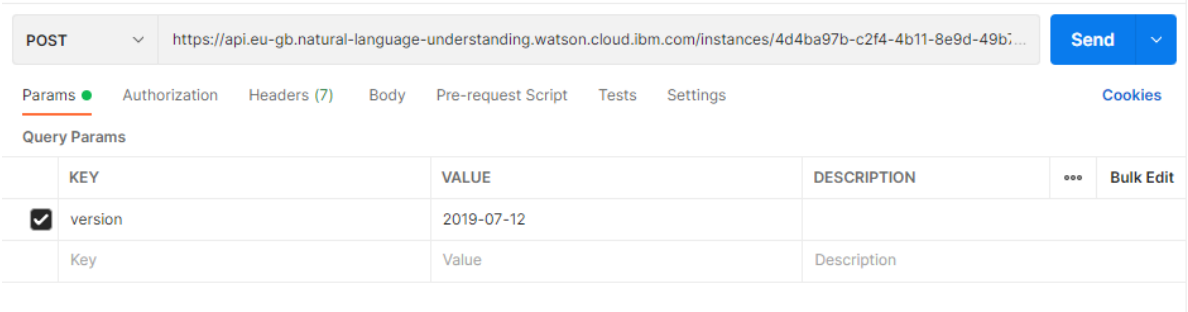
Select the POST mode.



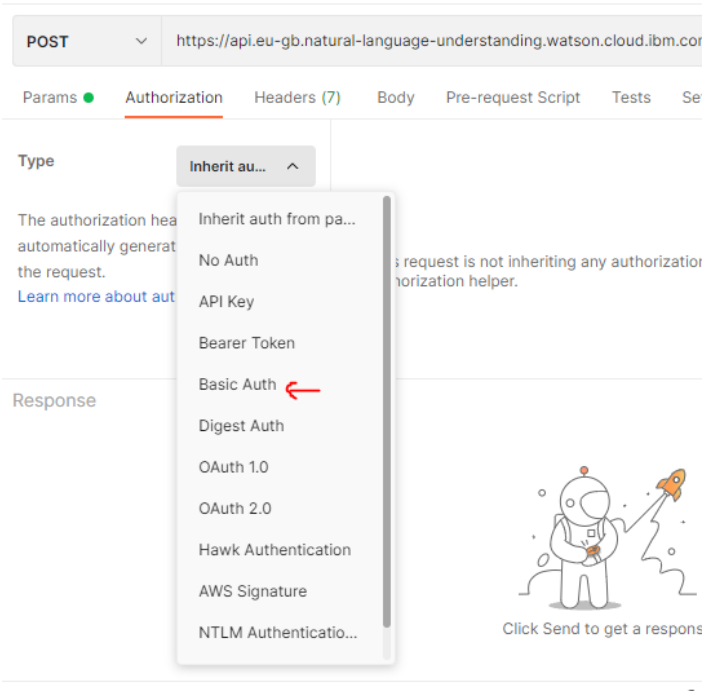
Paste the copied URL as a request URL.
V1: segment version
Analyse: we want to analyse



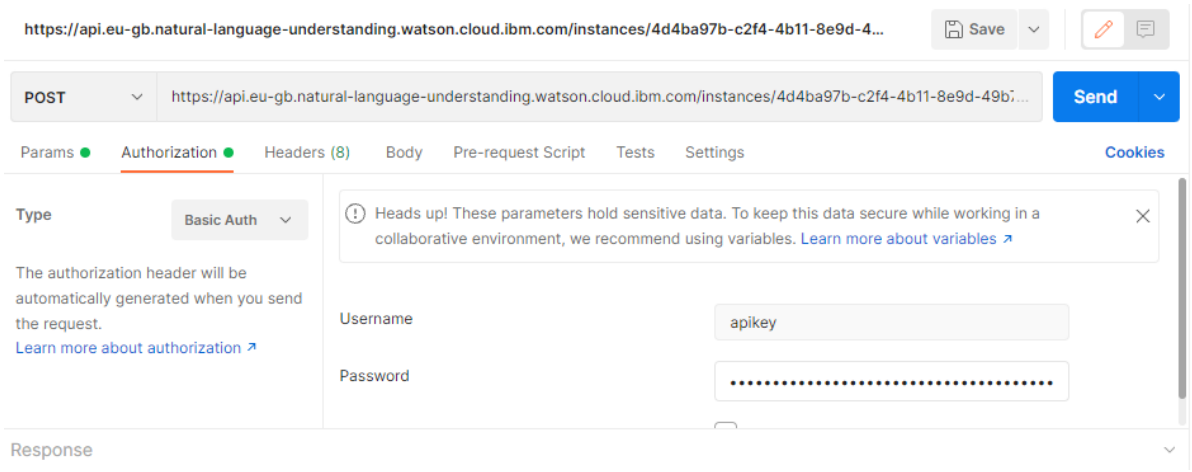
In Params tab, enter the version param and add its value.



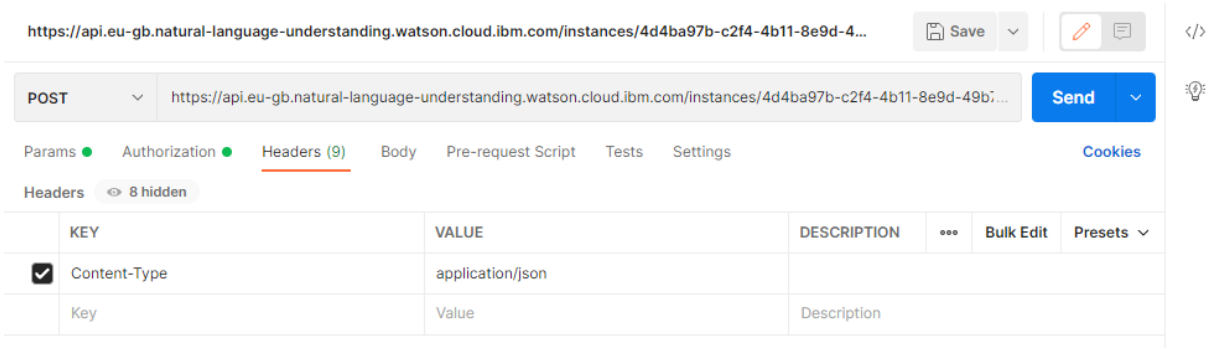
In Authorization tab, change the Type to 'Basic Auth'.



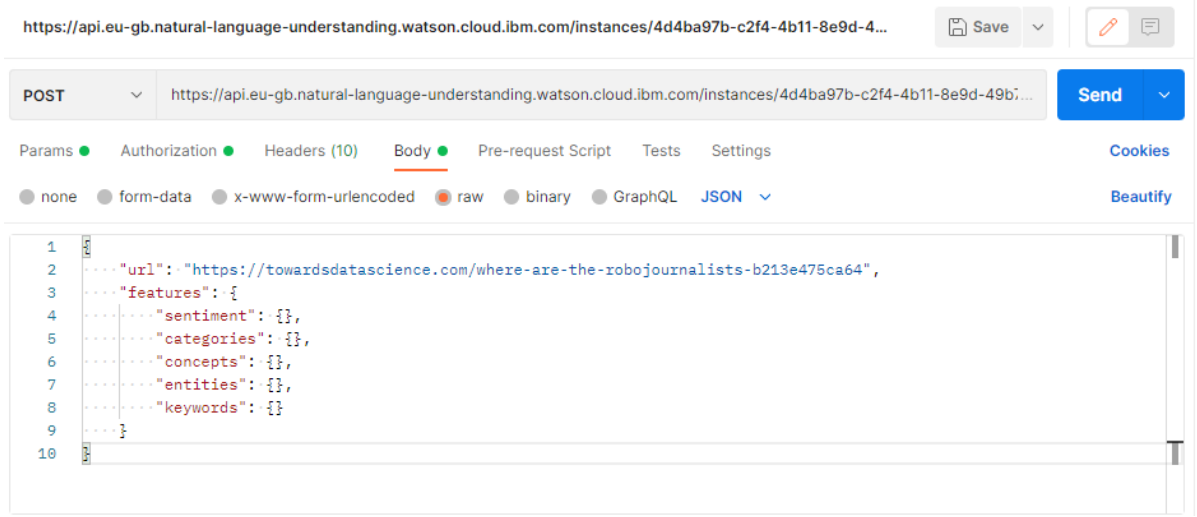
Username: 'apikey'
Password: received API key



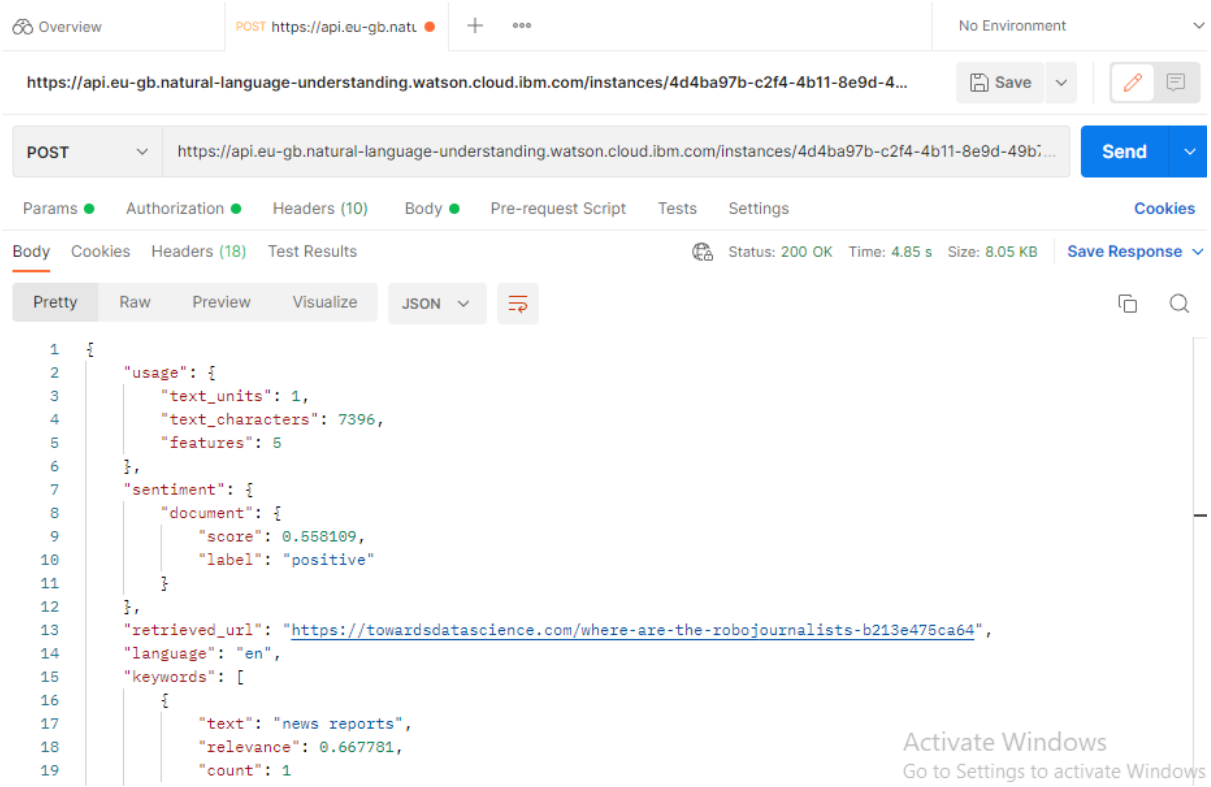
In Header, define what kind of input we want to give. Enter application/json as the Content-Type.



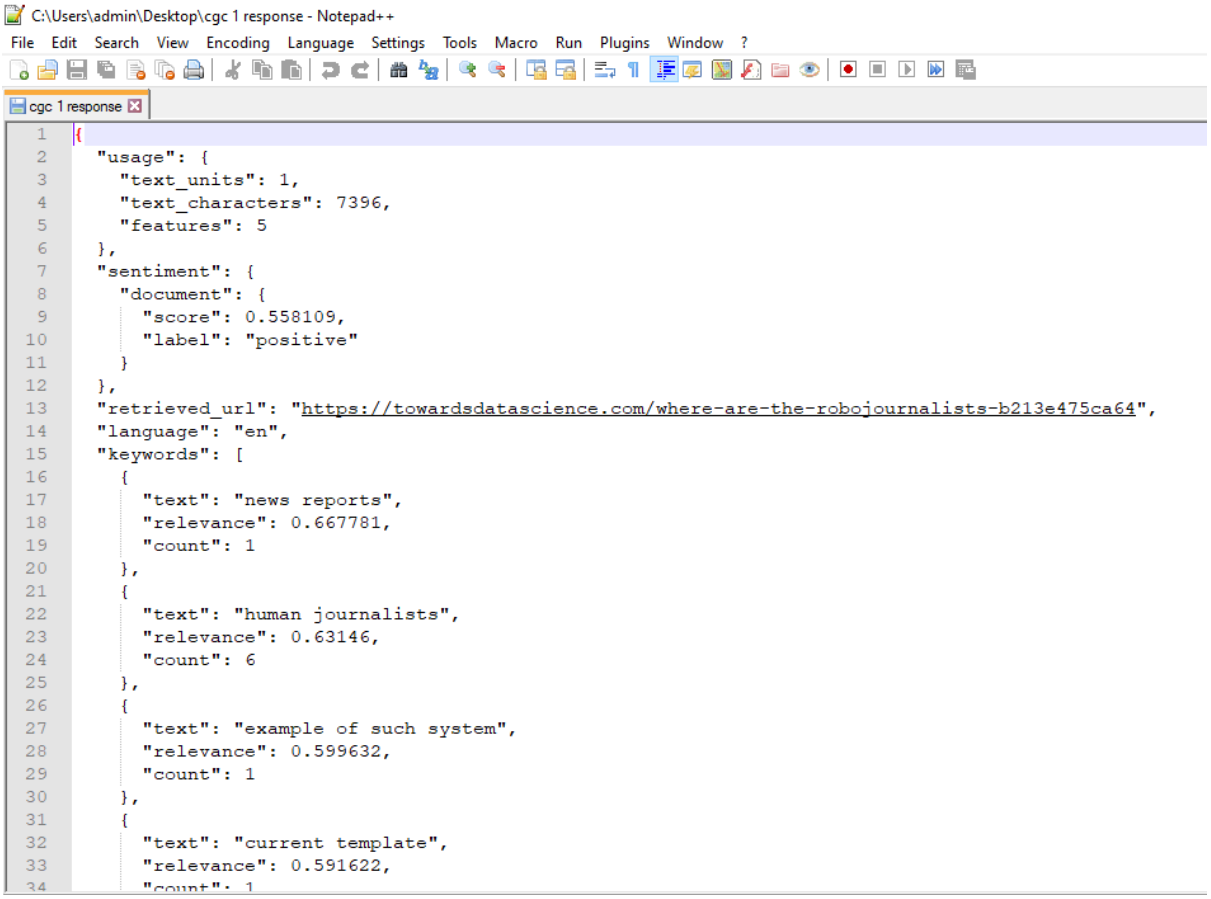
In Body, select 'raw' and JSON and write the following code and click on Send.



You will now get the following response:



Save response as a file.



Output:


```
{
    "usage": {
        "text_units": 1,
        "text_characters": 7396,
        "features": 5
    },
    "sentiment": {
        "document": {
            "score": 0.558109,
            "label": "positive"
        }
    },
    "retrieved_url": "https://towardsdatascience.com/where-are-the-robojournalists-b213e475ca64",
    "language": "en",
    "keywords": [
        {
            "text": "news reports",
            "relevance": 0.667781,
            "count": 1
        },
        {
            "text": "human journalists",
            "relevance": 0.63146,
            "count": 6
        },
        {
            "text": "example of such system",
            "relevance": 0.599632,
            "count": 1
        },
        {
            "text": "current template",
            "relevance": 0.591622,
            "count": 1
        },
        {
            "text": "news stories",
            "relevance": 0.586189,
            "count": 1
        },
        {
            "text": "following heuristics",
            "relevance": 0.575824,
            "count": 1
        },
        {
            "text": "traditional use cases",
            "relevance": 0.565984,
            "count": 1
```

```
    },
    {
        "text": "earlier article",
        "relevance": 0.565685,
        "count": 1
    },
    {
        "text": "news report",
        "relevance": 0.560991,
        "count": 1
    },
    {
        "text": "following benefits",
        "relevance": 0.557891,
        "count": 1
    },
    {
        "text": "human language",
        "relevance": 0.55647,
        "count": 1
    },
    {
        "text": "idea of news automation",
        "relevance": 0.556223,
        "count": 1
    },
    {
        "text": "clear benefits",
        "relevance": 0.547558,
        "count": 2
    },
    {
        "text": "human insight",
        "relevance": 0.547385,
        "count": 1
    },
    {
        "text": "potential benefits",
        "relevance": 0.544927,
        "count": 1
    },
    {
        "text": "usage of robojournalism",
        "relevance": 0.543357,
        "count": 1
    },
    {
        "text": "specific rules",
        "relevance": 0.539751,
        "count": 1
    },
```

```
{
    "text": "automated journalism systems",
    "relevance": 0.539667,
    "count": 1
},
{
    "text": "required technology",
    "relevance": 0.538729,
    "count": 1
},
{
    "text": "meta-analysis",
    "relevance": 0.536674,
    "count": 2
},
{
    "text": "number of media organisations",
    "relevance": 0.535758,
    "count": 1
},
{
    "text": "weather forecast reporting",
    "relevance": 0.530217,
    "count": 1
},
{
    "text": "domain experts",
    "relevance": 0.530093,
    "count": 1
},
{
    "text": "human journalist",
    "relevance": 0.527871,
    "count": 1
},
{
    "text": "Use of template",
    "relevance": 0.527492,
    "count": 1
},
{
    "text": "major progress",
    "relevance": 0.524853,
    "count": 1
},
{
    "text": "news generation system",
    "relevance": 0.523722,
    "count": 1
},
{
```

```
            "text": "particular topic",
            "relevance": 0.522184,
            "count": 1
        },
        {
            "text": "earliest articles",
            "relevance": 0.521806,
            "count": 1
        },
        {
            "text": "English language",
            "relevance": 0.52177,
            "count": 2
        },
        {
            "text": "higher ratings",
            "relevance": 0.521633,
            "count": 1
        },
        {
            "text": "industry standard",
            "relevance": 0.520023,
            "count": 1
        },
        {
            "text": "major news publications",
            "relevance": 0.519352,
            "count": 1
        },
        {
            "text": "scientific journals",
            "relevance": 0.519216,
            "count": 2
        },
        {
            "text": "Graefe",
            "relevance": 0.518191,
            "count": 10
        },
        {
            "text": "software providers",
            "relevance": 0.516833,
            "count": 1
        },
        {
            "text": "media houses",
            "relevance": 0.516197,
            "count": 1
        },
        {
            "text": "downsides of template",
```

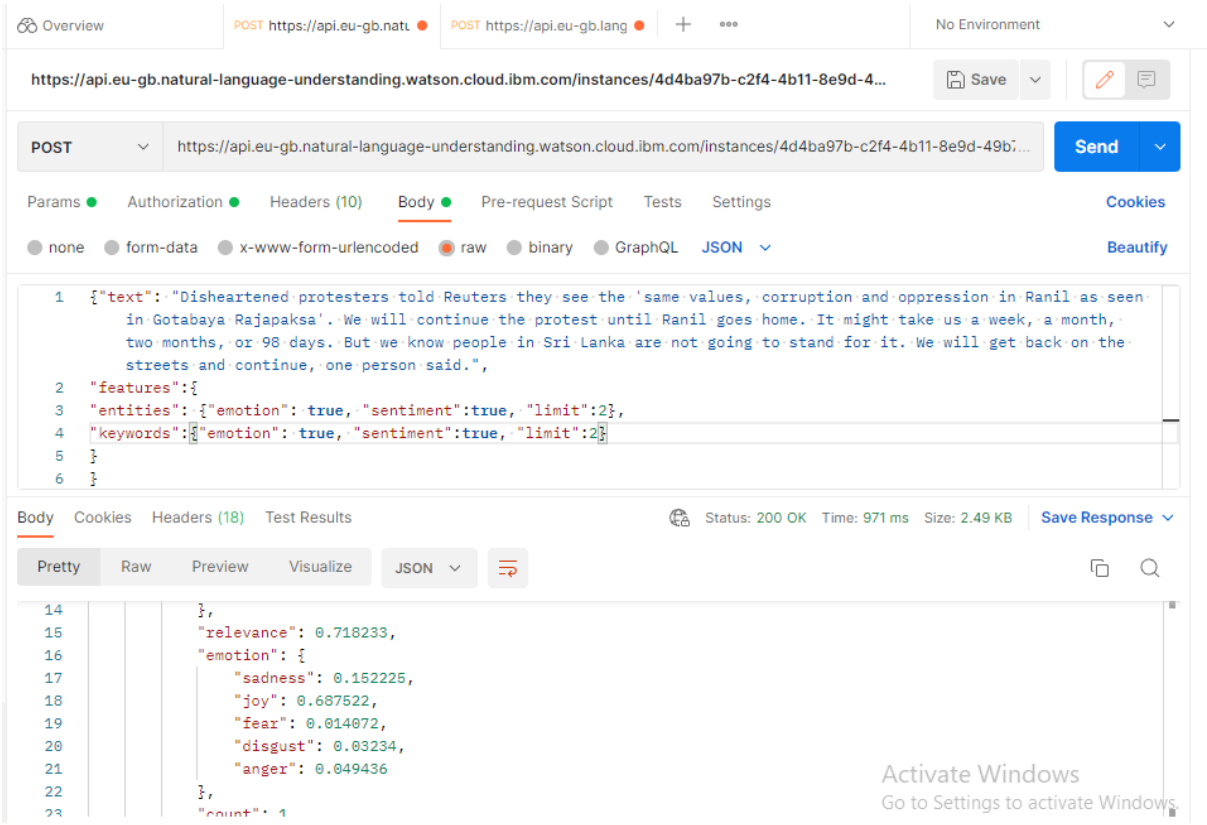
```
            "relevance": 0.51514,
            "count": 1
        },
        {
            "text": "European media representatives",
            "relevance": 0.51395,
            "count": 1
        },
        {
            "text": "addition",
            "relevance": 0.513743,
            "count": 1
        },
        {
            "text": "reports",
            "relevance": 0.513363,
            "count": 1
        },
        {
            "text": "journalism",
            "relevance": 0.511138,
            "count": 4
        },
        {
            "text": "template",
            "relevance": 0.511088,
            "count": 2
        },
        {
            "text": "fact",
            "relevance": 0.510971,
            "count": 2
        },
        {
            "text": "MAIN-model",
            "relevance": 0.510684,
            "count": 1
        },
        {
            "text": "following limitations",
            "relevance": 0.510613,
            "count": 1
        },
        {
            "text": "readers",
            "relevance": 0.510366,
            "count": 7
        },
        {
            "text": "field",
            "relevance": 0.509986,
```

```
            "count": 2
        },
        {
            "text": "requirements",
            "relevance": 0.509886,
            "count": 3
        },
        {
            "text": "complex system",
            "relevance": 0.509659,
            "count": 1
        }
    ],
    "entities": [
        {
            "type": "Person",
            "text": "Graefe",
            "relevance": 0.981692,
            "count": 10,
            "confidence": 1
        },
        {
            "type": "Person",
            "text": "Bohlken",
            "relevance": 0.635757,
            "count": 6,
            "confidence": 1.0
        },
        {
            "type": "Person",
            "text": "Leppänen et al.",
            "relevance": 0.19921,
            "count": 1,
            "confidence": 0.175199
        },
        {
            "type": "Person",
            "text": "Glahn",
            "relevance": 0.193151,
            "count": 1,
            "confidence": 0.794586
        },
        {
            "type": "Person",
            "text": "Dörr",
            "relevance": 0.155009,
            "count": 1,
            "confidence": 0.927023
        },
        {
            "type": "PrintMedia",
```

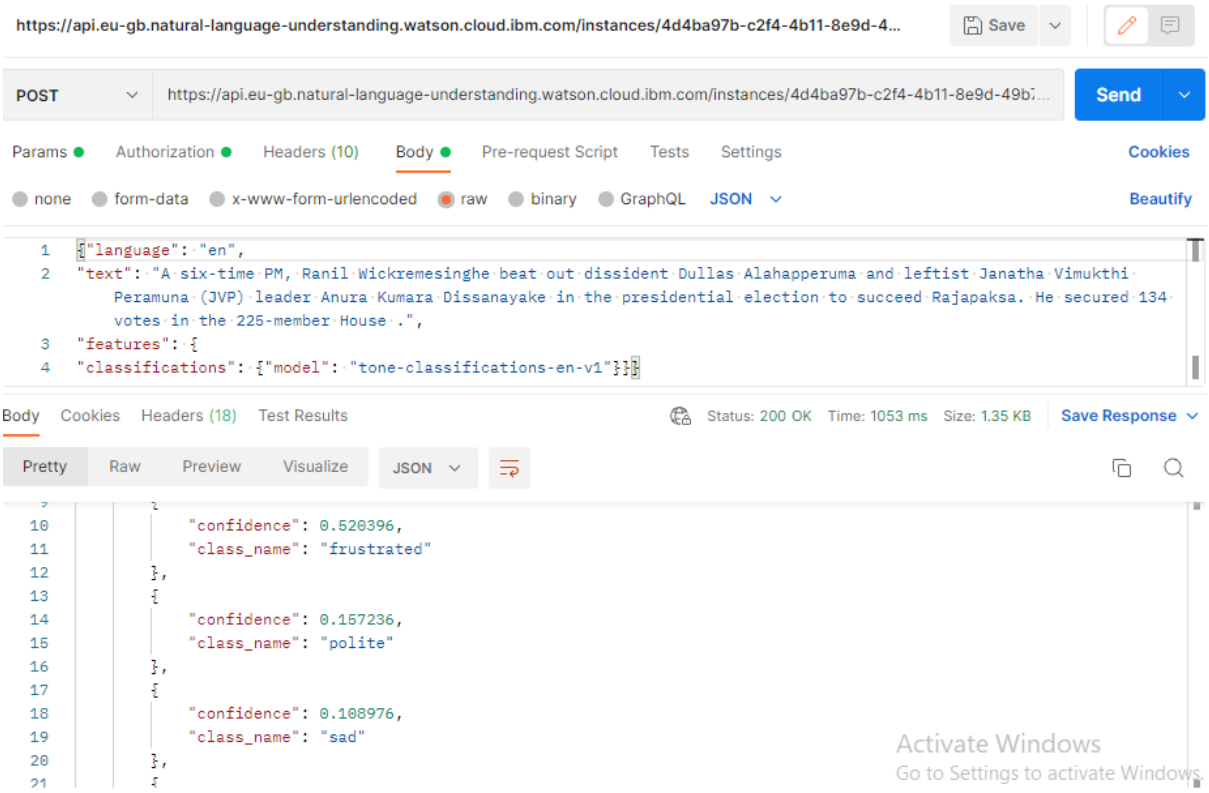
```
            "text": "LA Times",
            "relevance": 0.1322,
            "disambiguation": {
                "subtype": [
                    "Organization",
                    "Company",
                    "VentureFundedCompany"
                ],
                "name": "Los_Angeles_Times",
                "dbpedia_resource": "http://dbpedia.org/resource/Los_Angeles_Times"
            },
            "count": 1,
            "confidence": 0.595552
        },
        {
            "type": "Person",
            "text": "Sundar",
            "relevance": 0.083846,
            "count": 1,
            "confidence": 0.929154
        },
        {
            "type": "Organization",
            "text": "American and European media representatives",
            "relevance": 0.071768,
            "count": 1,
            "confidence": 0.189907
        },
        {
            "type": "Company",
            "text": "Microsoft",
            "relevance": 0.011365,
            "disambiguation": {
                "subtype": [
                    "Organization",
                    "OperatingSystemDeveloper",
                    "ProcessorManufacturer",
                    "SoftwareDeveloper",
                    "VentureFundedCompany",
                    "VideoGameDeveloper",
                    "VideoGamePublisher",
                    "ProgrammingLanguageDesigner"
                ],
                "name": "Microsoft",
                "dbpedia_resource": "http://dbpedia.org/resource/Microsoft"
            },
            "count": 1,
            "confidence": 0.998477
        }
    ],
    "concepts": [
```

```
        {
            "text": "NEWS",
            "relevance": 0.948696,
            "dbpedia_resource": "http://dbpedia.org/resource/NEWS"
        },
        {
            "text": "Journalism",
            "relevance": 0.713112,
            "dbpedia_resource": "http://dbpedia.org/resource/Journalism"
        }
    ],
    "categories": [
        {
            "score": 0.87919,
            "label": "/education/homework and study tips"
        },
        {
            "score": 0.857201,
            "label": "/news/national news"
        },
        {
            "score": 0.841423,
            "label": "/business and industrial/business news"
        }
    ]
}
```


To display all the emotions or just the particular features:



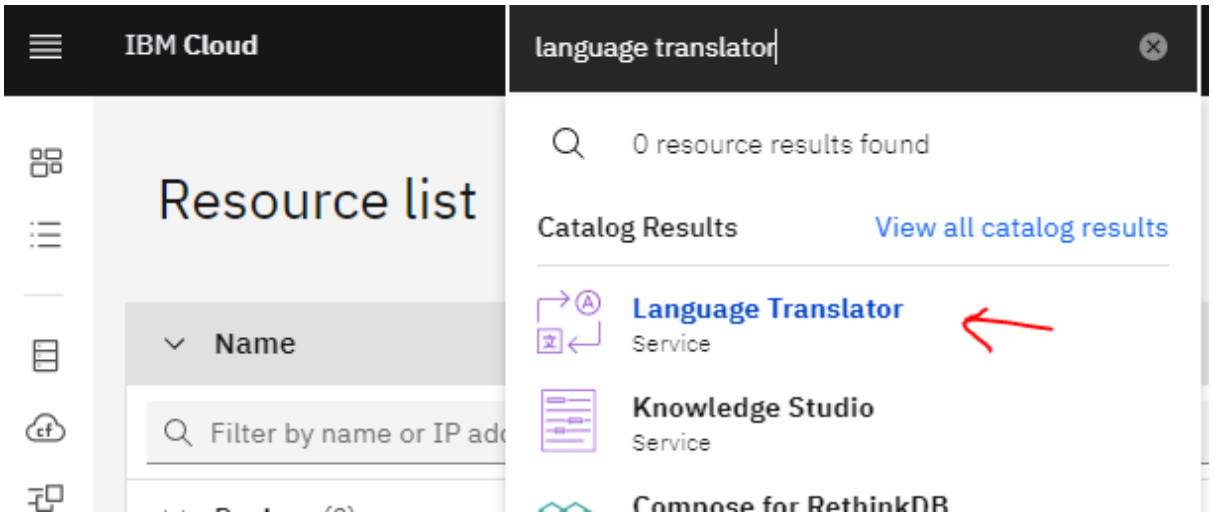
To display all the tone classifications:



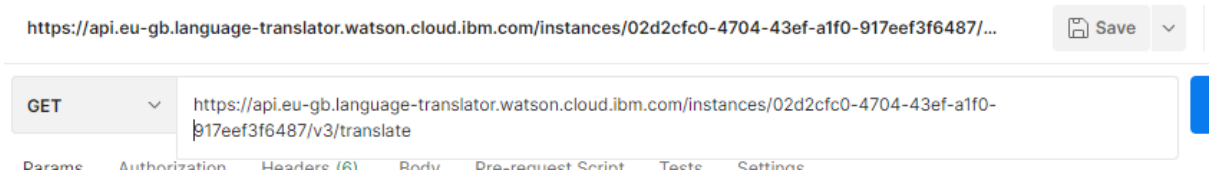
Task 2

Watson Language Translator Watson Language Translator translates text from one language to another. The service offers multiple IBM-provided translation models that you can customize based on your unique terminology and language. Use Watson Language Translator to take news from across the globe and present it in your language, communicate with your customers in their own language, and more.

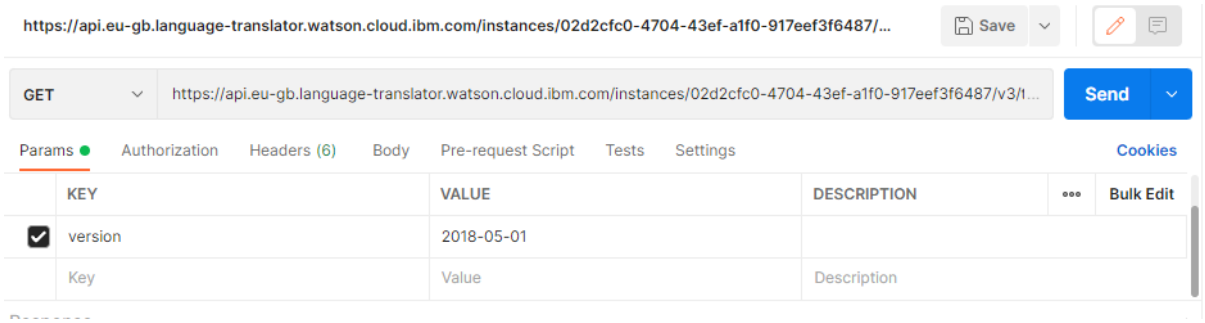
In IBM Cloud, search for Language Translator.



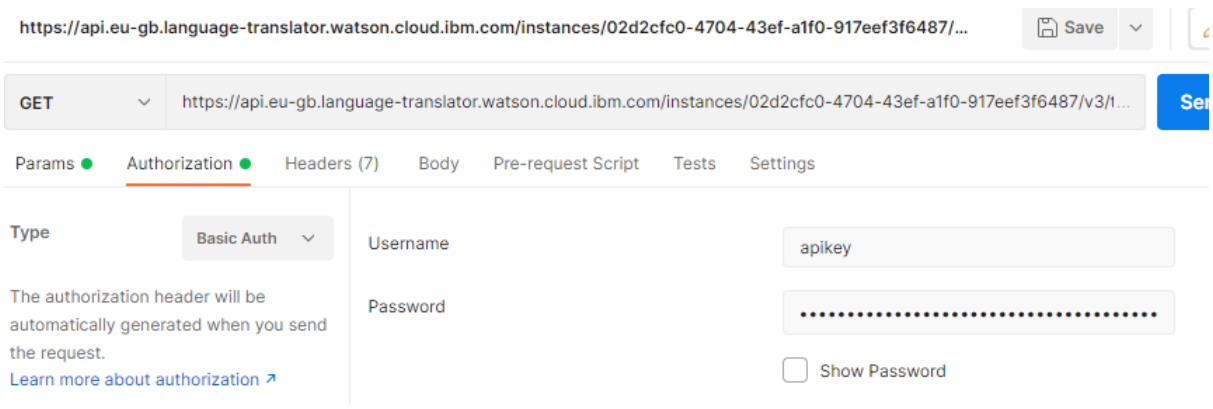
Copy URL and API key. Open Postman App. Add a new tab. Turn the mode to POST and paste the URL with /v3/translate



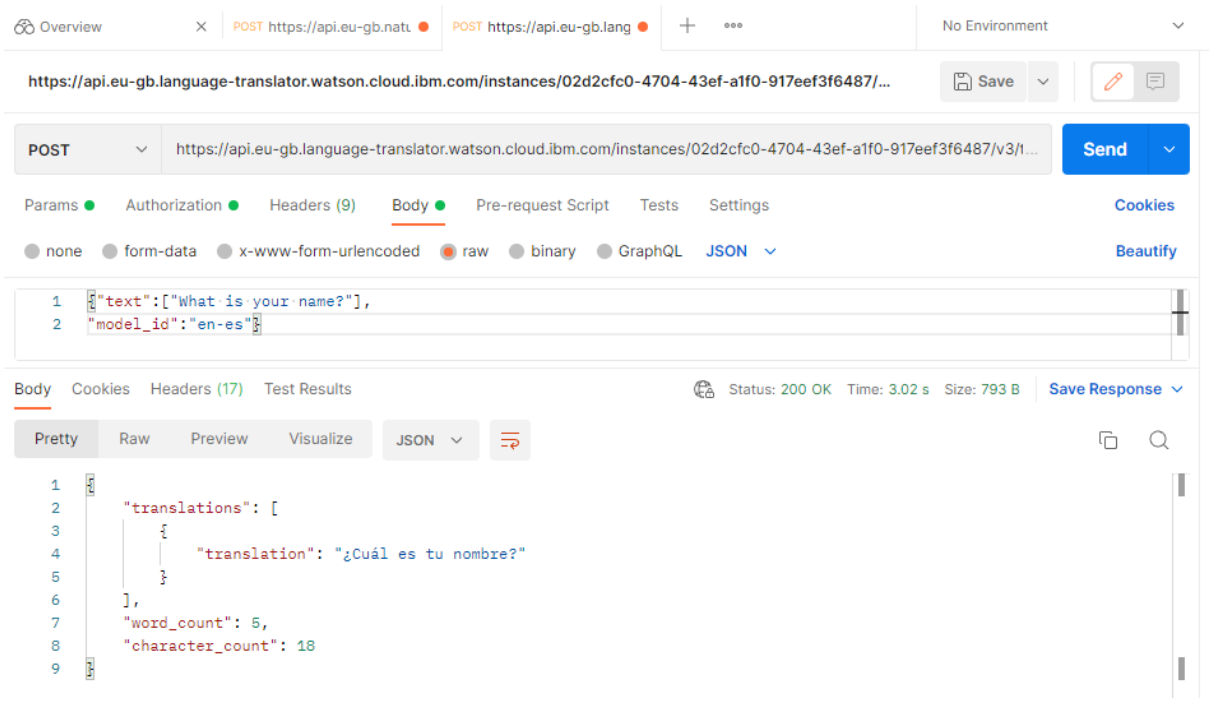
In Params, add the version.



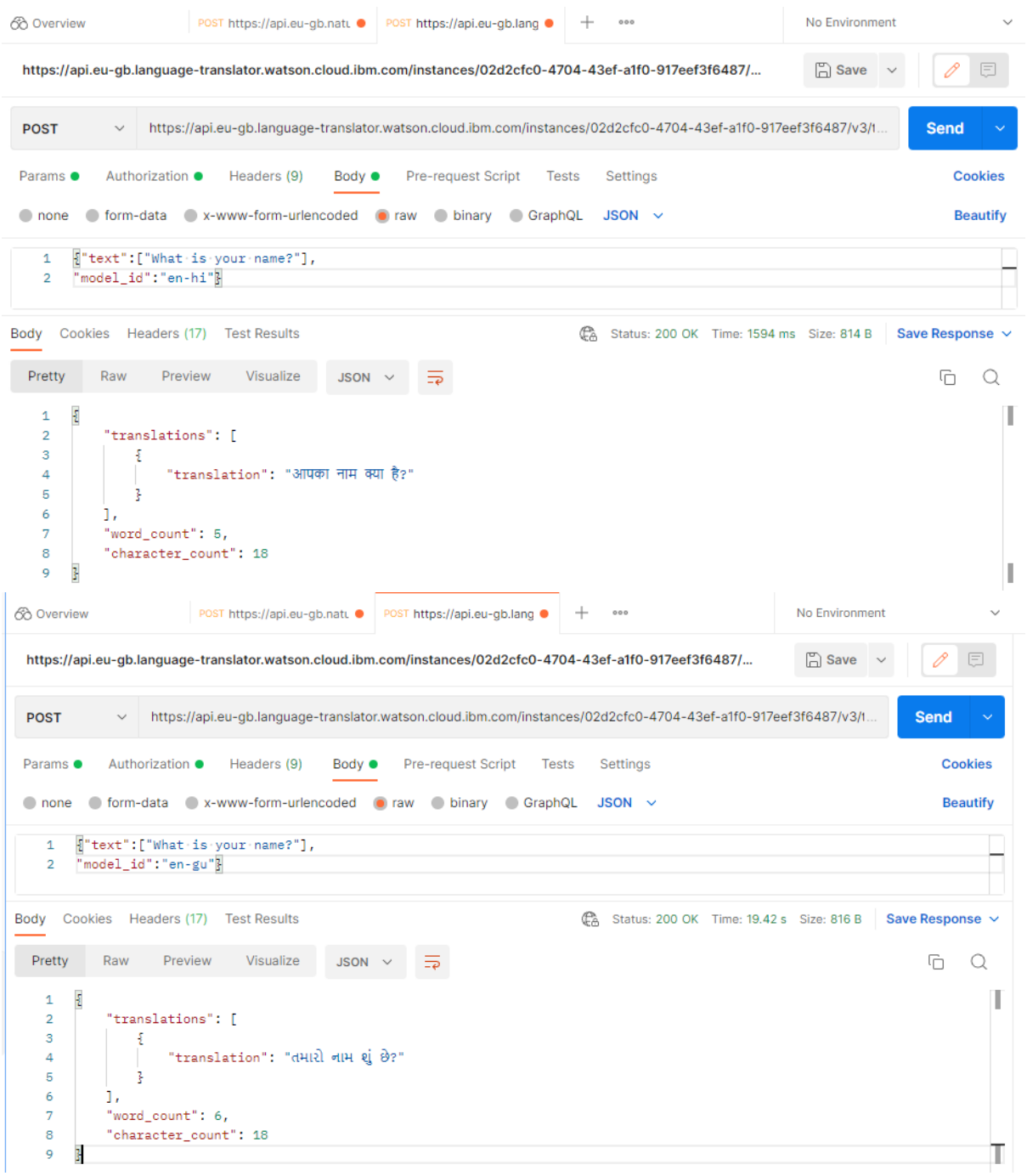
In Authorization, turn the type to Basic Auth and enter the username and password.

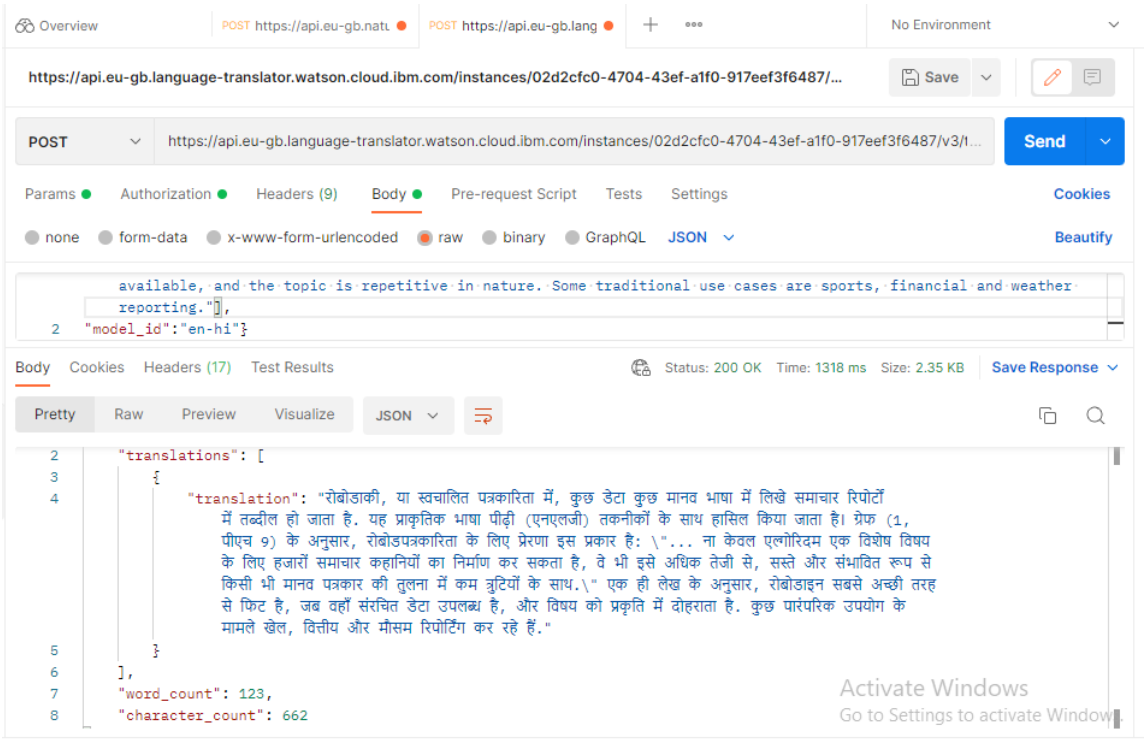


Nothing in Headers.
In Body, select 'raw' and JSON and type the code and click on Send.
Link for language codes:
https://cloud.ibm.com/docs/language-translator?topic=language-translator-identifiable-languages

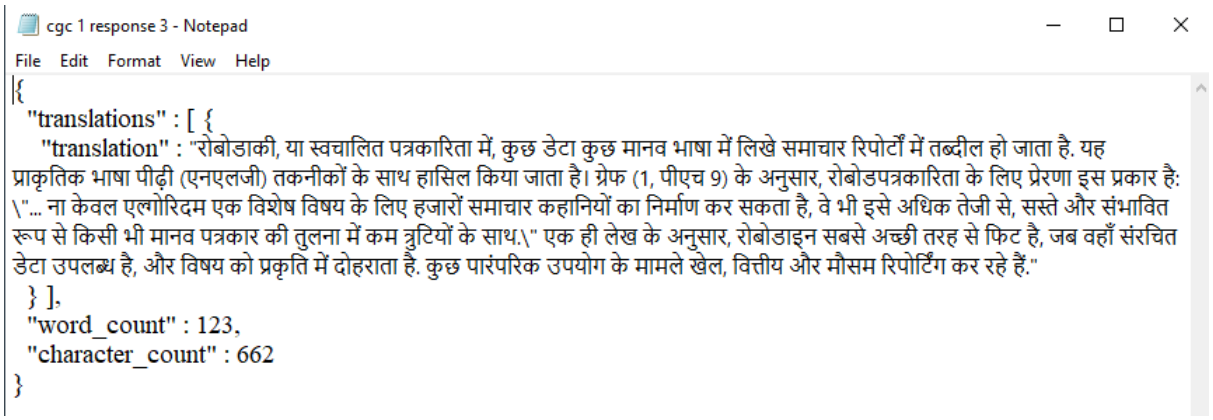


Try the same with different languages.


Overview
POST https://api.eu-gb.natl
POST https://api.eu-gb.lang
No Environment
https://api.eu-gb.language-translator.watson.cloud.ibm.com/instances/02d2cfc0-4704-43ef-a1f0-917eef3f6487/...
Save
POST
https://api.eu-gb.language-translator.watson.cloud.ibm.com/instances/02d2cfc0-4704-43ef-a1f0-917eef3f6487/v3/l...
Send
Params
Authorization
Headers (9)
Body
Pre-request Script
Tests
Settings
Cookies
none
form-data
x-www-form-urlencoded
raw
binary
GraphQL
JSON
Beautify
{"text":["What is your name?"],
"model_id":"en-hi"}
Body
Cookies
Headers (17)
Test Results
Status: 200 OK
Time: 1594 ms
Size: 814 B
Save Response
Pretty
Raw
Preview
Visualize
JSON
{
"translations": [
{
"translation": "आपका नाम क्या है?"
}
],
"word_count": 5,
"character_count": 18
}
Overview
POST https://api.eu-gb.natl
POST https://api.eu-gb.lang
No Environment
https://api.eu-gb.language-translator.watson.cloud.ibm.com/instances/02d2cfc0-4704-43ef-a1f0-917eef3f6487/...
Save
POST
https://api.eu-gb.language-translator.watson.cloud.ibm.com/instances/02d2cfc0-4704-43ef-a1f0-917eef3f6487/v3/l...
Send
Params
Authorization
Headers (9)
Body
Pre-request Script
Tests
Settings
Cookies
none
form-data
x-www-form-urlencoded
raw
binary
GraphQL
JSON
Beautify
{"text":["What is your name?"],
"model_id":"en-gu"}
Body
Cookies
Headers (17)
Test Results
Status: 200 OK
Time: 19.42 s
Size: 816 B
Save Response
Pretty
Raw
Preview
Visualize
JSON
{
"translations": [
{
"translation": "તમારો નામ શું છે?"
}
],
"word_count": 6,
"character_count": 18
}



Save the response as a file.



Output:

{
"translations" : [{
"translation" : "रोबोडाकी, या स्वचालित पत्रकारिता में, कुछ डेटा कुछ मानव भाषा में लिखे समाचार रिपोर्टों में तब्दील हो जाता है. यह प्राकृतिक भाषा पीढ़ी (एनएलजी) तकनीकों के साथ हासिल किया जाता है। ग्रेफ (1, पीएच 9) के अनुसार, रोबोडपत्रकारिता के लिए प्रेरणा इस प्रकार है: \"... ना केवल एल्गोरिदम एक विशेष विषय के लिए हजारों समाचार कहानियों का निर्माण कर सकता है, वे भी इसे अधिक तेजी से, सस्ते और संभावित रूप से किसी भी मानव पत्रकार की तुलना में कम त्रुटियों के साथ.\" एक ही लेख के अनुसार, रोबोडाइन सबसे अच्छी तरह से फिट है, जब वहाँ संरचित डेटा उपलब्ध है, और विषय को प्रकृति में दोहराता है. कुछ पारंपरिक उपयोग के मामले खेल, वित्तीय और मौसम रिपोर्टिंग कर रहे हैं."
}],
"word_count" : 123,
"character_count" : 662