



**Ganpat  
University**

॥ विद्यया समाजोत्कर्षः ॥

**Institute of  
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Technology**

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**Sub: EADC ( Enterprise Application Development for Cloud)**

**Branch: CBA**

**Batch:61**

## **PRACTICAL 05**

### **❖ Question :**

A multinational company, GlobalCom, is exploring the integration of Watson REST APIs into its customer service platform to enhance user experience and improve language support. As part of the testing phase, the development team is tasked with performing various tasks using the Watson APIs.

**Task 1:**

Imagine you are a developer at GlobalCom. Your first task is to synthesize US English input to audio using Watson's Text-to-Speech API.

**Task 2:**

Continuing with the development process, the team is required to synthesize the same US English input to audio, but this time using the voice en\_US\_AllisonV3Voice and explicitly requesting audio in the default Ogg format.

**Task 3:**

In further testing, the team needs to synthesize Spanish input to an audio file.

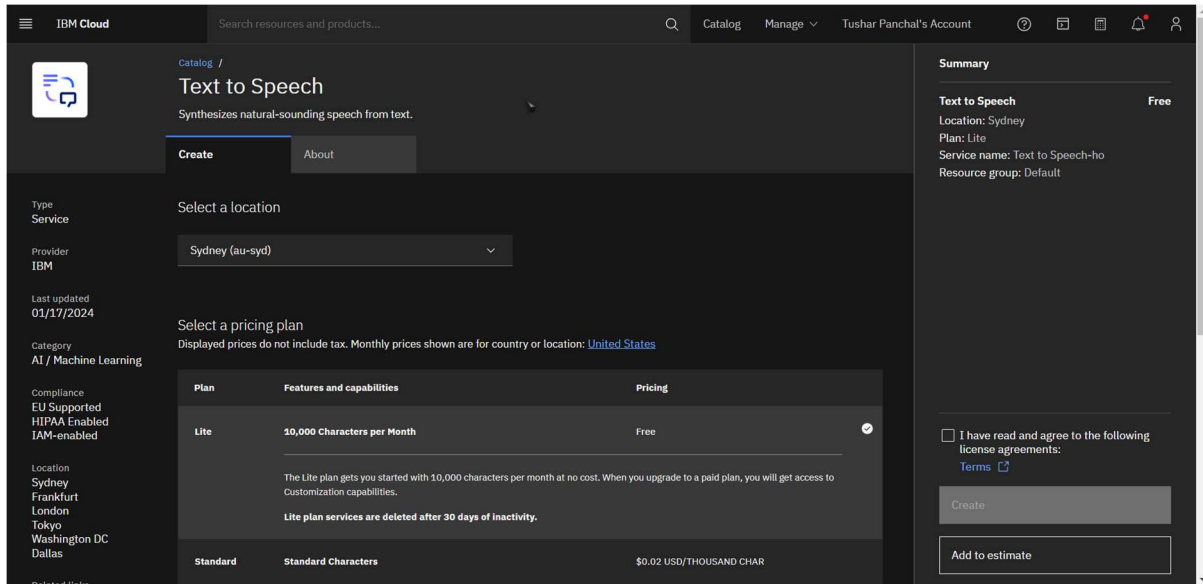
**Task 4:**

The team is now tasked with translating a phrase, "Hello, How are you?" from English to Hindi using Watson's Language Translator API.

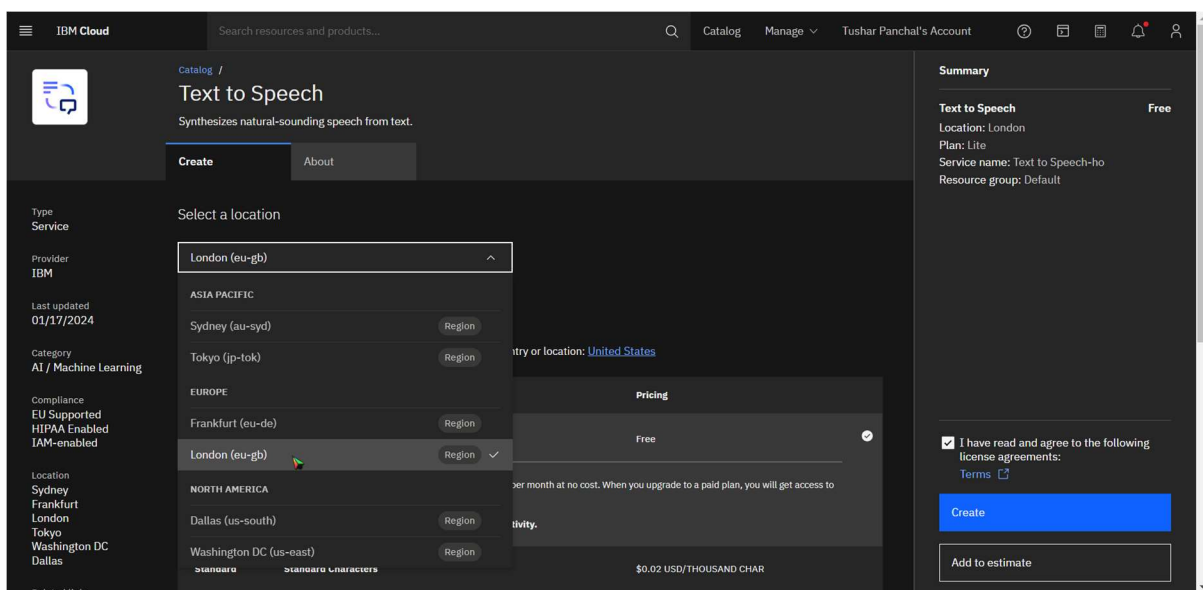
**Task 5:**

Continuing with language support, the team aims to demonstrate document translation capabilities. Develop a scenario where a user uploads a text file containing information in English, and the system translates the entire document into another language, excluding English.

- ➡ **First of all create a Text to speech service in IBM cloud :**
- ➡ **Search for the service text to speech in IBM cloud catalog & configure service name and then hit create :**



**Select location I selected London here as you can see :**



**Then I name it as you can see below :**

### Configure your resource

Service name

Select a resource group ⓘ

Tags ⓘ

Access management tags ⓘ

IBM Cloud
Search resources and products...
Catalog
Manage
Tushar Panchal's Account

Frankfurt
London
Tokyo
Washington DC
Dallas

Related links  
API docs  
Docs  
Terms

Customization capabilities.  
Lite plan services are deleted after 30 days of inactivity.

Standard	Standard Characters	\$0.02 USD/THOUSAND CHAR
Premium	<b>Everything in Standard plus...</b> Usage and Training Data is Private + Stored in an Isolated Environment High Availability and Service Level Uptime Guarantee Single Tenant Environment Mutual Authentication HIPAA Enabled in Washington DC (US-East) & Dallas (US-South) EU Supported available in Frankfurt (EU-DE)	\$5,000.00 USD/INSTANCE \$0.02 USD/THOUSAND CHAR

Configure your resource

Service name

Select a resource group ⓘ

Tags ⓘ

Access management tags ⓘ

Summary

**Text to Speech** **Free**  
Location: London  
Plan: Lite  
Service name: Practical\_5\_Text\_To\_Speech  
Resource group: Default

☒ I have read and agree to the following license agreements:  
[Terms](#)

**Then simply hit create button**  
**as you can see our service has been created**

IBM Cloud
Search resources and products...
Catalog
Manage
Tushar Panchal's Account

Resource list /  
**Practical\_5\_Text\_To\_Speech** Active [Add tags](#)

Details
Actions...

Manage
Getting started
Service credentials
Plan

### Getting started with Text to Speech

Last Updated: 2021-09-22

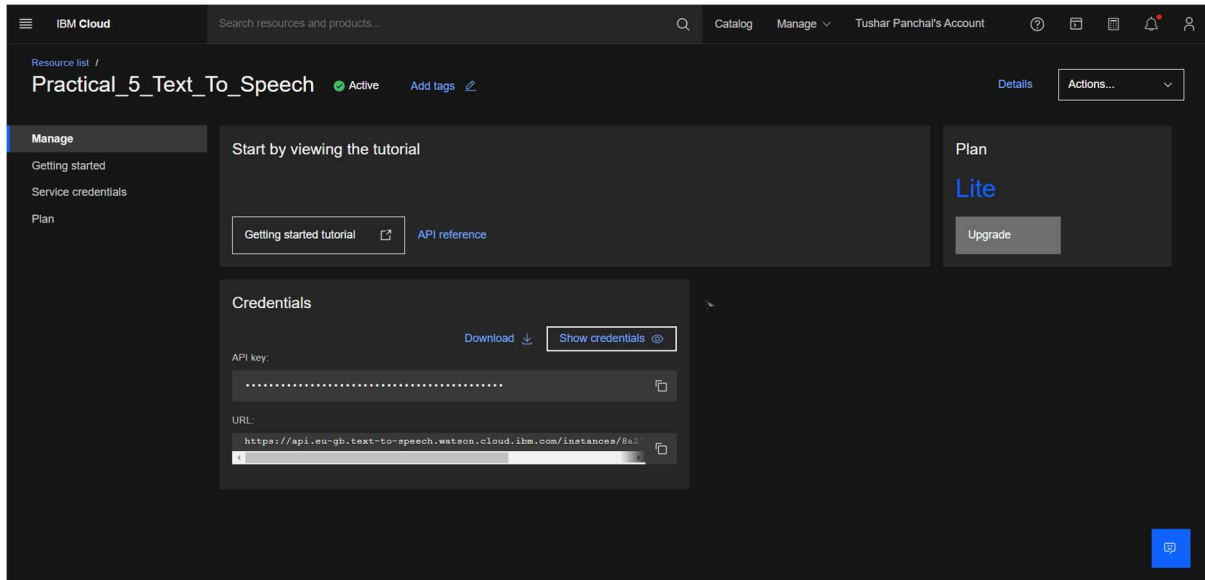
The IBM Watson™ Text to Speech service converts written text to natural-sounding speech to provide speech-synthesis capabilities for applications. This `curl`-based tutorial can help you get started quickly with the service. The examples show you how to call the service's `POST` and `GET /v1/synthesize` methods to request an audio stream.

IBM Cloud only **IBM Cloud® only.** Watch the following video for a visual summary of getting started with the Text to Speech service.

Get started with Watson Text to Speech

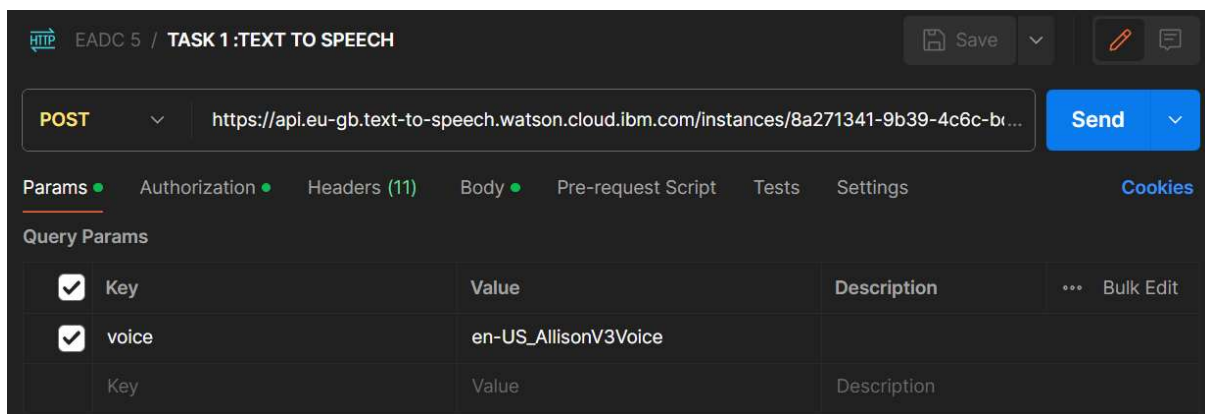
PRACTICAL 05 | -Tushar

» **TASK 1: Imagine you are a developer at GlobalCom. Your first task is to synthesize US English input to audio using Watson's Text-to-Speech API.**

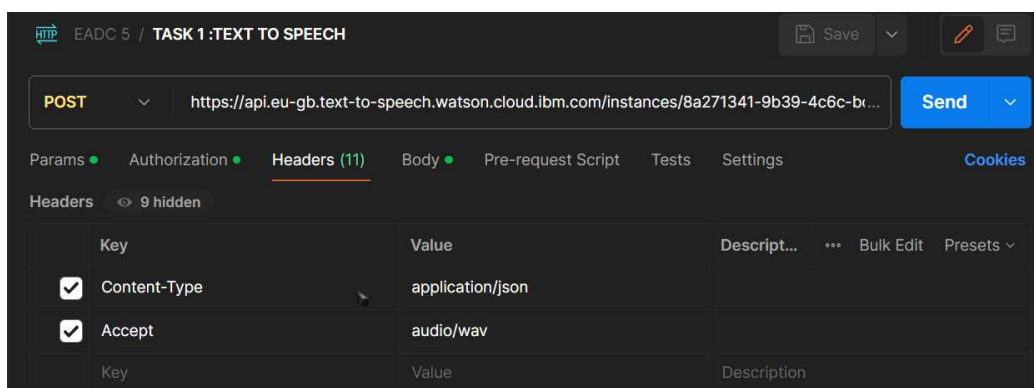


From this I used api key and url to postman

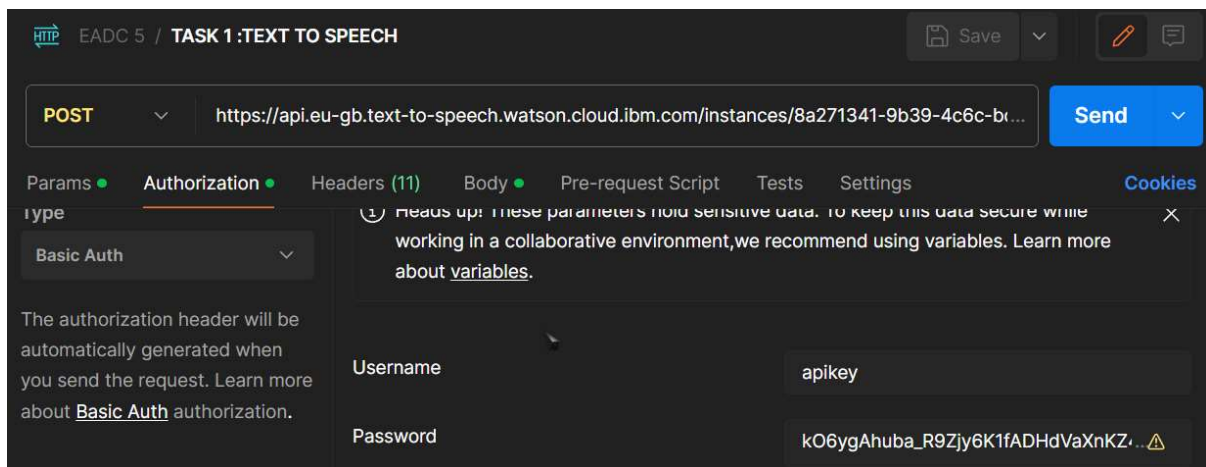
Go to postman interface and set parms as you can see below :



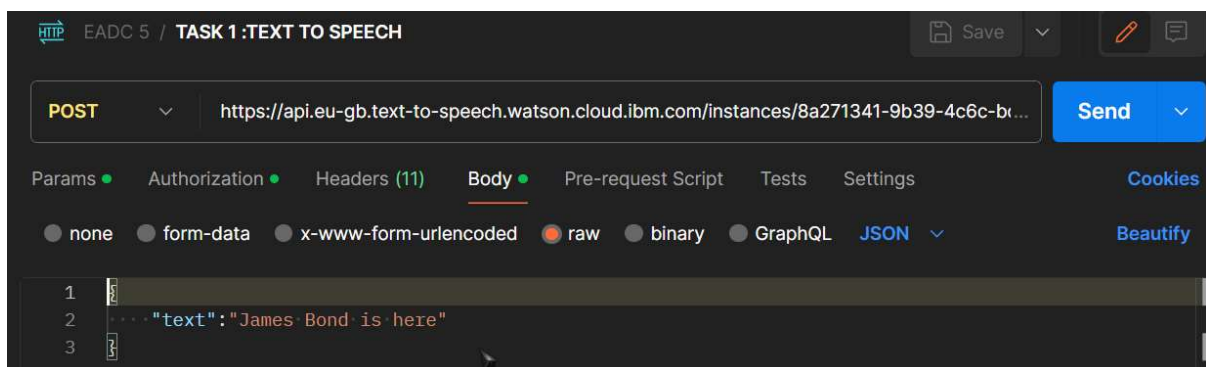
Then in headers set content-type and accept values :



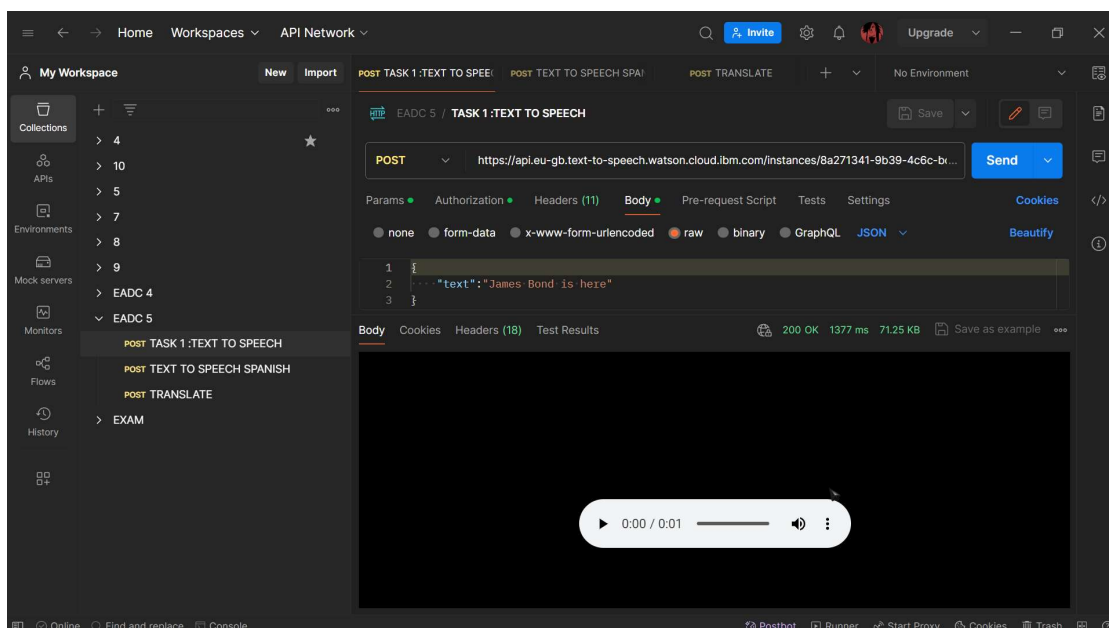
In authorization enter your api key that you have been get from IBM cloud text to speech service :



In body part select raw and json format and type your text to conver into audio :



Now send request and you will get an audio output :



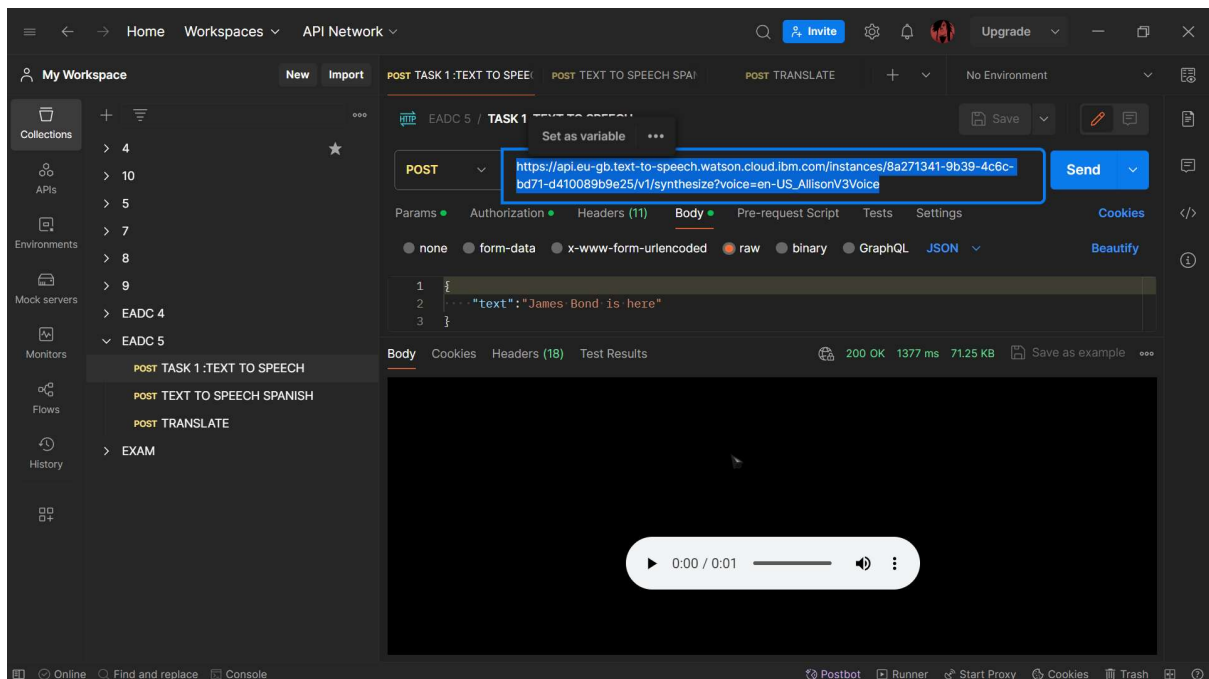
» **TASK 2 : Continuing with the development process, the team is required to synthesize the same US English input to audio, but this time using the voice en\_US\_AllisonV3Voice and explicitly requesting audio in the default Ogg format.**

Add this endpoint in your url to get US\_AllisonV3Voice female voice output :

[https://api.eu-gb.text-to-speech.watson.cloud.ibm.com/instances/8a271341-9b39-4c6c-bd71-d410089b9e25/v1/synthesize?voice=en-US\\_AllisonV3Voice](https://api.eu-gb.text-to-speech.watson.cloud.ibm.com/instances/8a271341-9b39-4c6c-bd71-d410089b9e25/v1/synthesize?voice=en-US_AllisonV3Voice)

as you can see here we get audio output in female voice

**US\_AllisonV3Voice :**





### » **TASK 3 : In further testing, the team needs to synthesize Spanish input to an audio file.**

Open text to speech service and then Go on text in spanish in ibm cloud pak for data then copy from url :

**Synthesize text in Spanish** @

The following command uses the `GET /v1/synthesize` method to synthesize Spanish input to an audio file. The `GET` method includes three query parameters: `accept` to specify the audio format, `text` to specify the input text for the audio, and `voice` to specify a Spanish voice. Because `accept` and `text` are passed as query parameters, the request is URL-encoded.

① Issue the following command to synthesize the string "hola mundo" and produce a WAV file that is named `hola_mundo.wav`.

IBM Cloud

```
$ curl -X GET -u "apikey:{apikey}" \
--output hola_mundo.wav \
"{url}/v1/synthesize?accept=audio%2Fwav&text=hola%20mundo&voice=es-ES_Enrique"
```

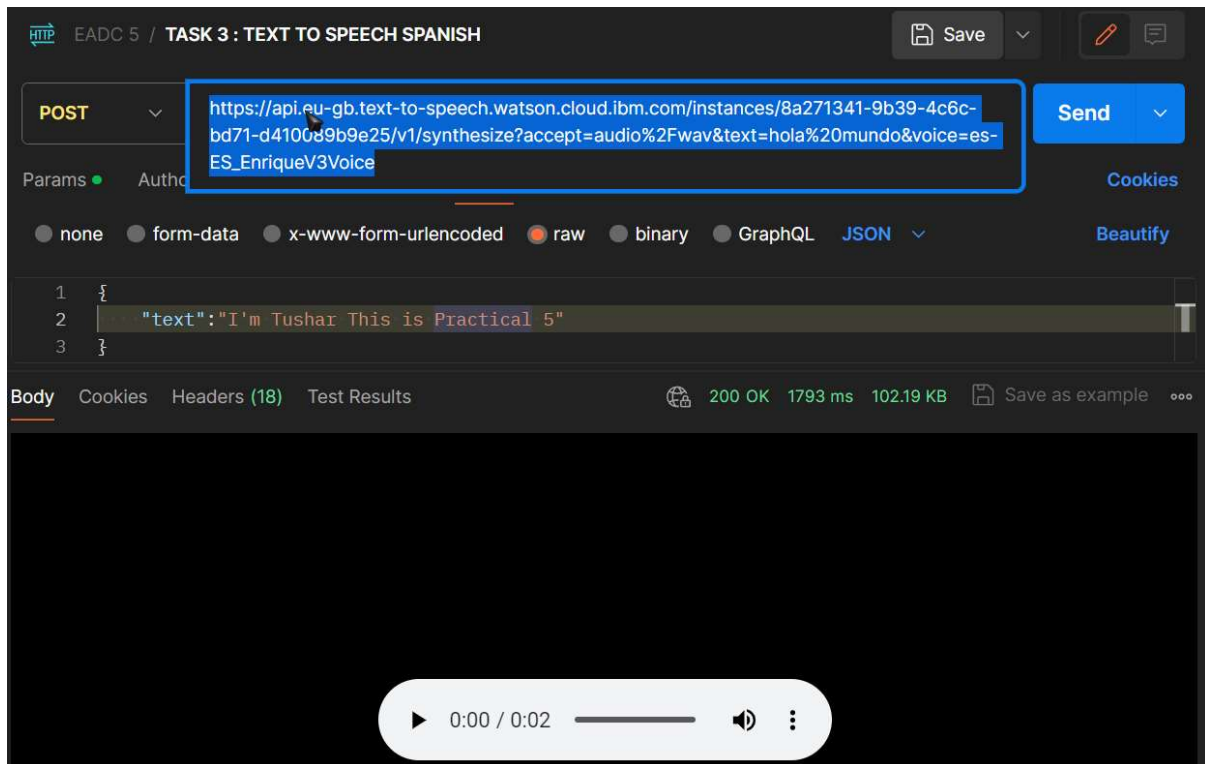
Then copy url from manage then after that select url to translate from spanish on above IBM cloud pak for data:

[https://api.eu-gb.text-to-speech.watson.cloud.ibm.com/instances/8a271341-9b39-4c6c-bd71-d410089b9e25/v1/synthesize?accept=audio%2Fwav&text=hola%20mundo&voice=es-ES\\_EnriqueV3Voice](https://api.eu-gb.text-to-speech.watson.cloud.ibm.com/instances/8a271341-9b39-4c6c-bd71-d410089b9e25/v1/synthesize?accept=audio%2Fwav&text=hola%20mundo&voice=es-ES_EnriqueV3Voice)

The screenshot shows a REST client interface with a POST request. The URL is `https://api.eu-gb.text-to-speech.watson.cloud.ibm.com/instances/8a271341-9b39-4c6c-bd71-d410089b9e25/v1/synthesize?accept=audio%2Fwav&text=hola%20mundo&voice=es-ES_EnriqueV3Voice`. The interface includes a 'Send' button and a 'Cookies' link.

then set parms , authorization & set Headers , body as raw (json) same as Question 1 .

send request & you will get a Spanish audio file of English text :



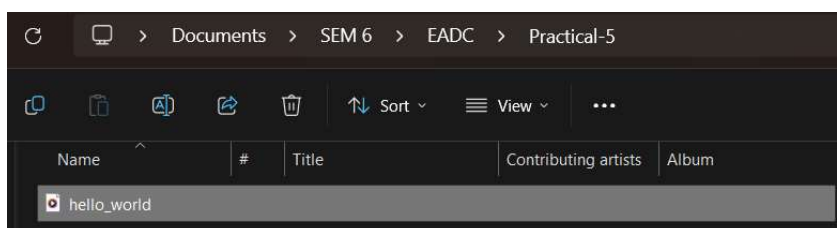
If you want to download audio file you need to run below command in your command prompt enter your api key and url as same in your service you get :

### **command:**

```
curl -X POST -u "apikey:k06ygAhuba_R9Zjy6K1fADHdVaXnKZ4E2PuUHybGVK0K" --header "Content-Type: application/json" --header "Accept: audio/wav" --data '{"text": "I am gonna be king of the pirates"}' --output hello_world.wav https://api.eu-gb.text-to-speech.watson.cloud.ibm.com/instances/8a271341-9b39-4c6c-bd71-d410089b9e25/v1/synthesize
```

```
C:\Users\Tushar\Documents\SEM 6\EADC\Practical-5>curl -X POST -u "apikey:k06ygAhuba_R9Zjy6K1fADHdVaXnKZ4E2PuUHybGVK0K" --header "Content-Type: application/json" --header "Accept: audio/wav" --data '{"text": "I am gonna be king of the pirates"}' --output hello_world.wav https://api.eu-gb.text-to-speech.watson.cloud.ibm.com/instances/8a271341-9b39-4c6c-bd71-d410089b9e25/v1/synthesize
% Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
           Dload  Upload  Total   Spent    Left   Speed
100 89278    0 89234  100    44 52304    25  0:00:01  0:00:01 --:--:-- 52362
```

As you can see here I get audio file :





## » **TASK 4 : The team is now tasked with translating a phrase, "Hello, How are you?" from English to Hindi using Watson's Language Translator API.**

» **Search for the service Language Translator in IBM cloud catalog & configure service name and then hit create :**

**Language Translator**

Translate text, documents, and websites from one language to another. Create industry or region-specific translations via the service's customization capability.

**Create** | About

Type: Service

Provider: IBM

Last updated: 08/29/2023

Category: AI / Machine Learning

Compliance: EU Supported, HIPAA Enabled, IAM-enabled

Location: Sydney, Frankfurt, London, Dallas, Tokyo, Washington DC

Select a location: Sydney (au-syd)

Select a pricing plan

Displayed prices do not include tax. Monthly prices shown are for country or location: [United States](#)

Plan	Features and capabilities	Pricing
Lite	<p>Translate up to <b>1,000,000 Characters per Month</b></p> <p>Identify up to 76 languages with Language Identification</p> <p>Document Translation supporting 23 file types - Maximum file size: 2 Mb</p>	Free

The Lite plan gets you started with 1,000,000 characters per month at no cost and includes the default translation models. When you upgrade to a Premium or Advanced plan, you can create custom models. Lite plan services are deleted after 30 days of inactivity.

**Summary**

**Language Translator** **Free**

Location: Sydney

Plan: Lite

Service name: Language Translator-4y

Resource group: Default

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**Create**

Add to estimate

**Terms**

First 250,000 characters are free  
Document Translation - Maximum file size: 20 Mb

Plan	Features and capabilities	Pricing
Advanced	<p>Everything in Standard plus...</p> <p>Build Domain Specific Custom Models (Pro-Rated Daily)</p> <p>Service Endpoints</p>	<p>\$0.02 USD/THOUSAND CHAR</p> <p>\$0.08 USD/THOUSAND CHAR</p> <p>\$15.00 USD/INSTANCE MONTH</p>
Premium	<p>Everything in Advanced plus...</p> <p>Usage and Training Data is Private + Stored in an Isolated Single Tenant Environment</p> <p>High Availability and Service Level Uptime Guarantee</p> <p>IBM Cloud Service Endpoints</p> <p>HIPAA Enabled in Washington DC (US-East) &amp; Dallas (US-South)</p> <p>EU Supported available in Frankfurt (EU-DE)</p>	

**Configure your resource**

Service name: Practical\_5\_Language\_Translatc

Select a resource group: Default

Tags: Examples: env:dev, version-1

Access management tags: Examples: access:dev, proj:version-1

**Summary**

**Language Translator** **Free**

Location: Sydney

Plan: Lite

Service name: Practical\_5\_Language\_Translator

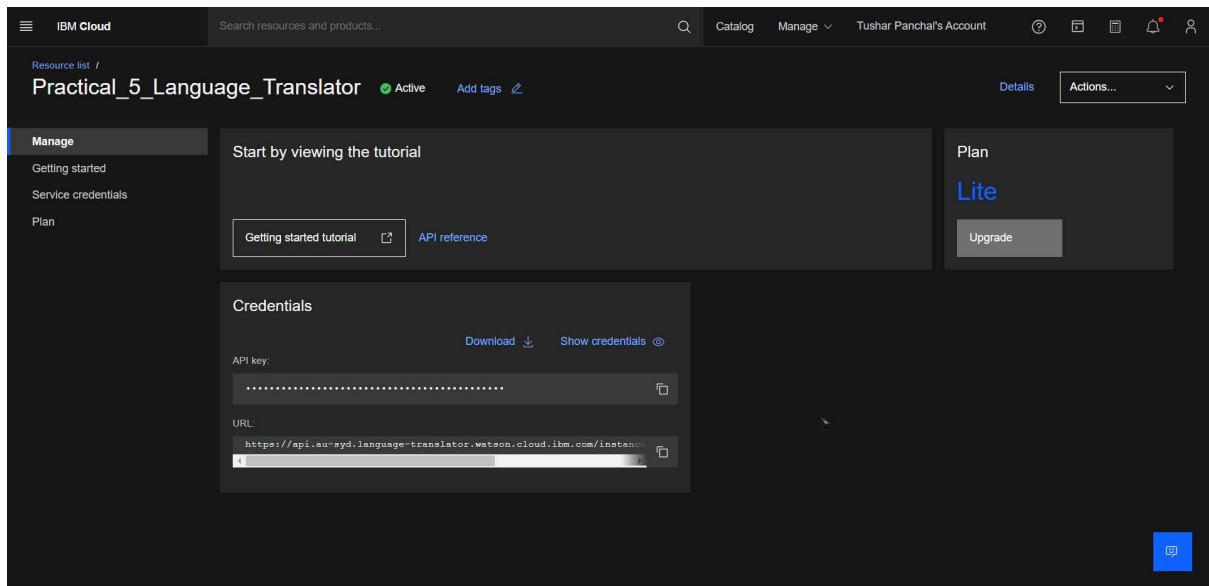
Resource group: Default

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**Create**

Add to estimate

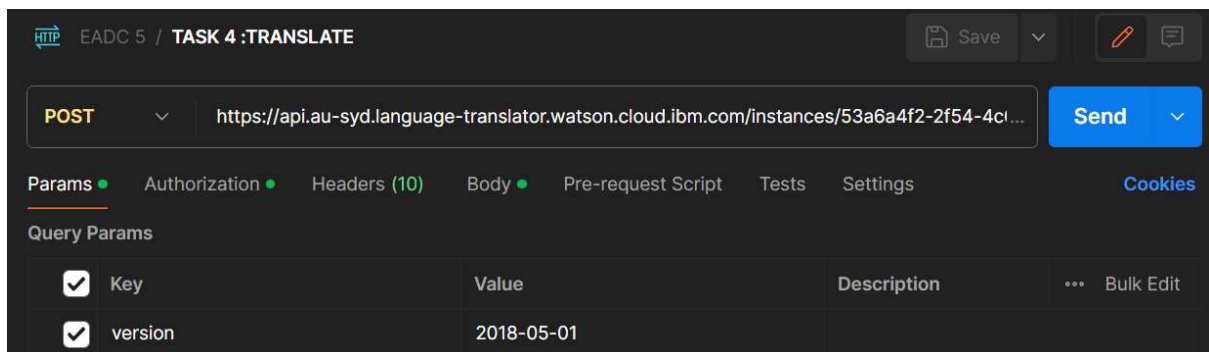
**Then simply hit create button as you can see our service has been created**



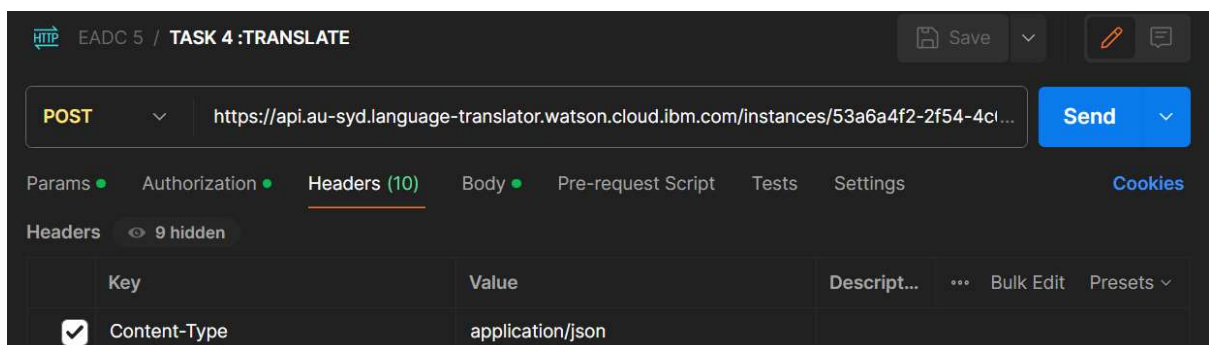
From this I used api key and url to postman.

<https://api.au-syd.language-translator.watson.cloud.ibm.com/instances/53a6a4f2-2f54-4c68-bd75-d265dee567c2/v3/translate?version=2018-05-01>

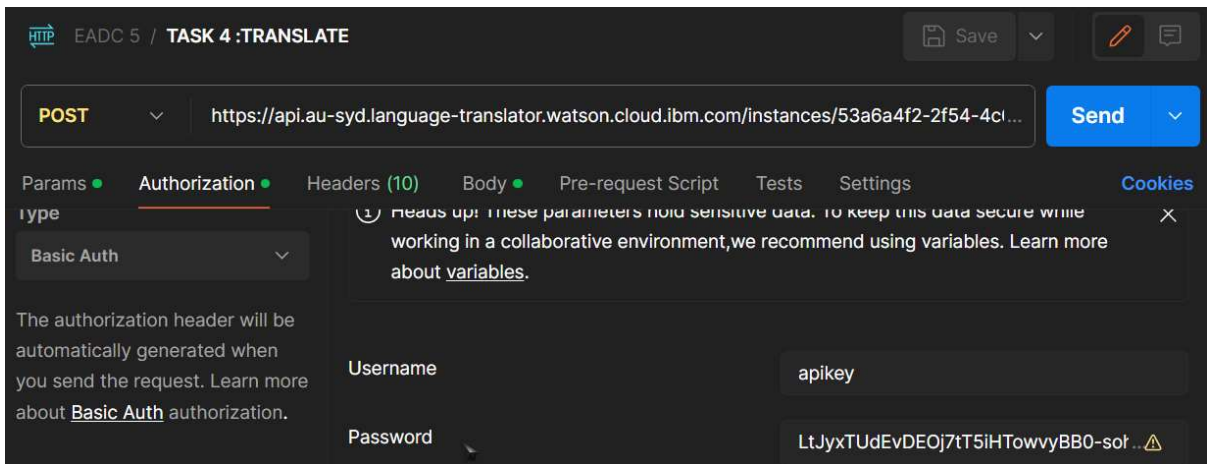
Go to postman interface and set parms as you can see below :



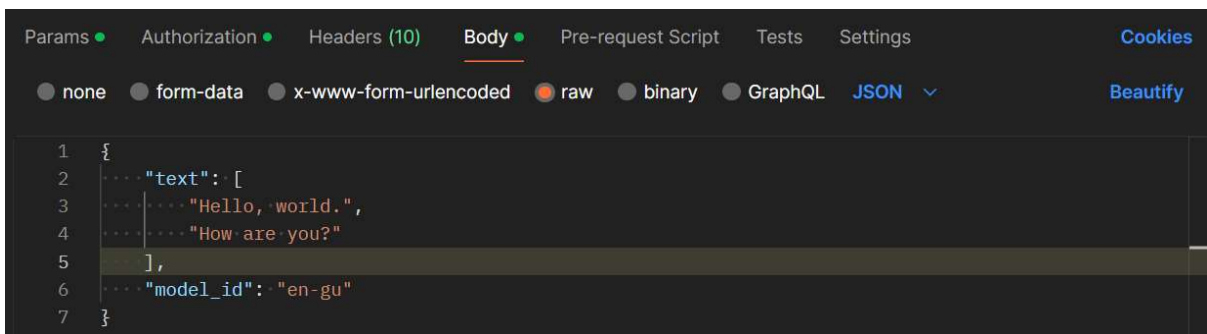
Then in headers set content-type and accept values :



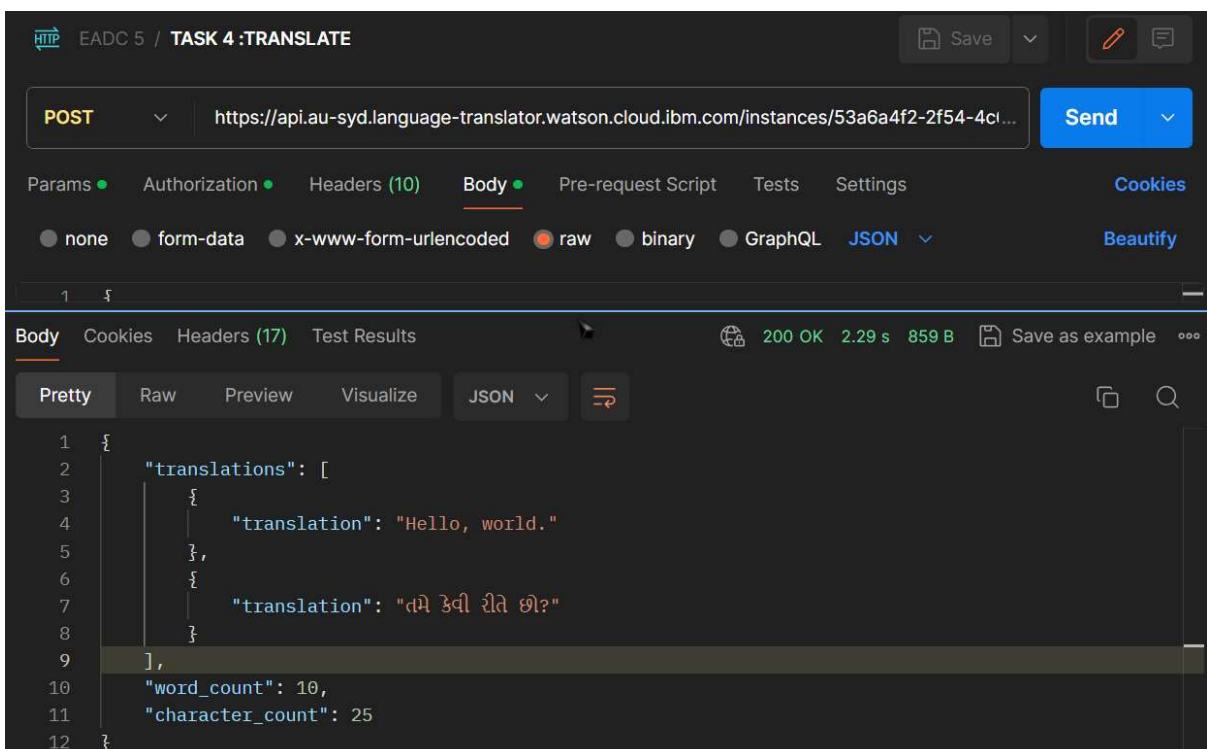
In authorization enter your api key that you have been get from IBM cloud text to speech service :



In body part select raw and json format and type your text & type wanted language in model id to translate it into audio :

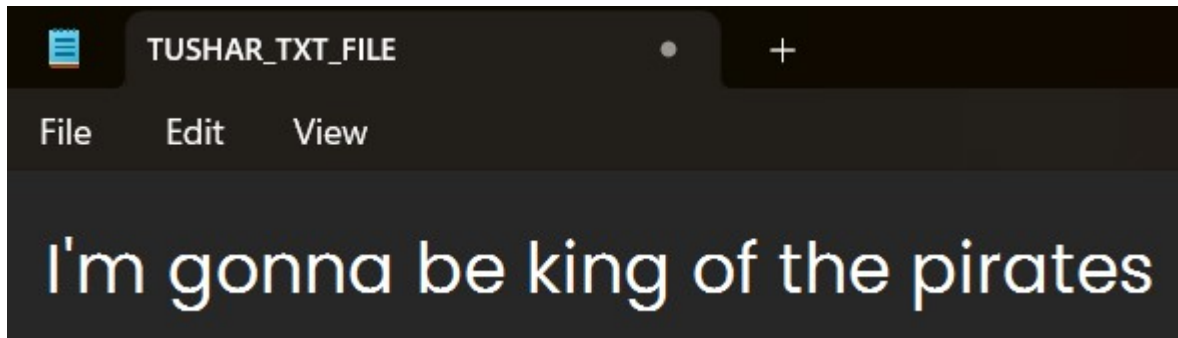


Now send request and you will get an audio output (Gujarati Language) :



» **TASK 5 : Continuing with language support, the team aims to demonstrate document translation capabilities. Develop a scenario where a user uploads a text file containing information in English, and the system translates the entire document into another language, excluding English.**

» **Make a simple text file :**



Open command prompt and run below command to translate our text file into our desired language set in command :

**command :**

```
curl -X POST --user "apikey:LtJyxTUdEvDE0j7tT5iHTowvyBB0-sohSASnT8sa8IQP" --form "file=@TUSHAR_TXT_FILE.txt" --form "source=en" --form "target=hi" https://api.au-syd.language-translator.watson.cloud.ibm.com/instances/53a6a4f2-2f54-4c68-bd75-d265dee567c2/v3/documents?version=2018-05-01
```

```
C:\Users\Tushar\Documents\SEM 6\EADC\Practical-5>curl -X POST --user "apikey:LtJyxTUdEvDE0j7tT5iHTowvyBB0-sohSASnT8sa8IQP" --form "file=@TUSHAR_TXT_FILE.txt" --form "source=en" --form "target=hi" https://api.au-syd.language-translator.watson.cloud.ibm.com/instances/53a6a4f2-2f54-4c68-bd75-d265dee567c2/v3/documents?version=2018-05-01
{
  "document_id" : "3d92acb3-458a-4142-b2c4-b106972142fe",
  "filename" : "TUSHAR_TXT_FILE.txt",
  "model_id" : "en-hi",
  "source" : "en",
  "target" : "hi",
  "status" : "processing",
  "created" : "2024-02-24T17:40:29Z"
}
C:\Users\Tushar\Documents\SEM 6\EADC\Practical-5>
```

After running above command change document id in new command that we have been get from previous command we run already :

**command:**

```
curl -X GET --user "apikey:LtJyxTUdEvDE0j7tT5iHTowvyBB0-sohSASnT8sa8IQP" --output "TUSHAR_NEW_TEXT_FILE.txt" "https://api.au-syd.language-translator.watson.cloud.ibm.com/instances/53a6a4f2-2f54-4c68-bd75-d265dee567c2/v3/documents/3d92acb3-458a-4142-b2c4-b106972142fe/translated_document?version=2018-05-01"
```

```
C:\Users\Tushar\Documents\SEM 6\EADC\Practical-5>curl -X GET --user "apikey:LtJyxTUdEvDE0j7tT5iHTowvyBB0-sohSASnT8sa8IQP" --output "TUSHAR_NEW_TEXT_FILE.txt" "https://api.au-syd.language-translator.watson.cloud.ibm.com/instances/53a6a4f2-2f54-4c68-bd75-d265dee567c2/v3/documents/3d92acb3-458a-4142-b2c4-b106972142fe/translated_document?version=2018-05-01"
% Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
           Dload  Upload   Total   Spent    Left   Speed
100  108  100  108    0    0   134      0 --:--:-- --:--:-- --:--:--  134
C:\Users\Tushar\Documents\SEM 6\EADC\Practical-5>
```

As you can see below we get our output in our desired Language that we have specified in command (hindi) :

