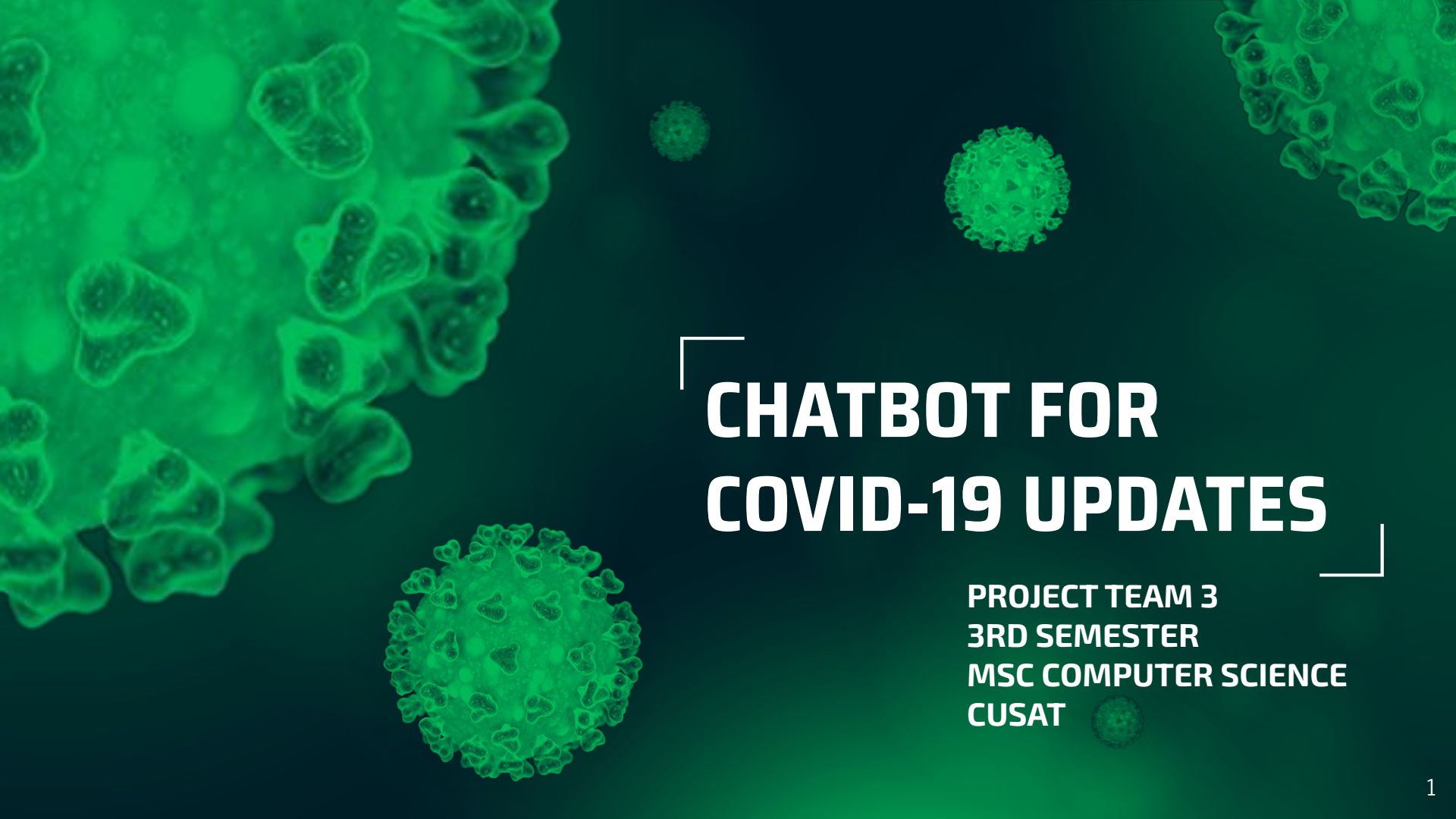

CHATBOT FOR COVID-19 UPDATES

PROJECT TEAM 3
3RD SEMESTER
MSC COMPUTER SCIENCE
CUSAT

PROJECT TEAM

Project Guide : Archana Krishnan

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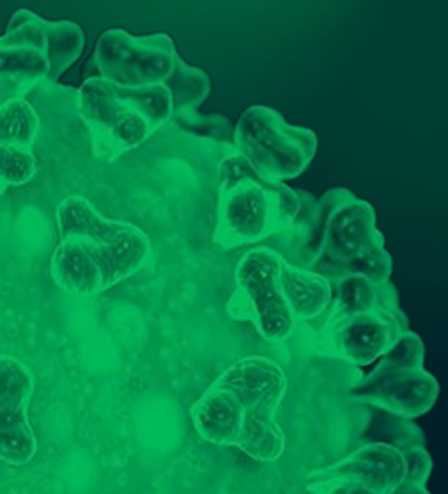

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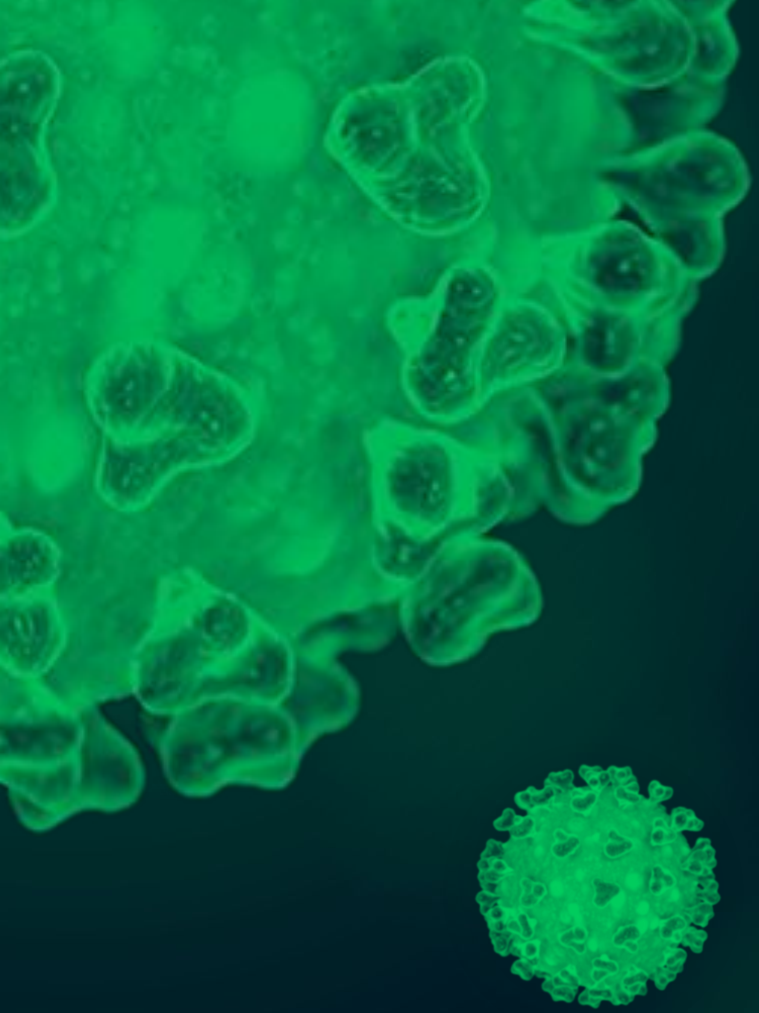
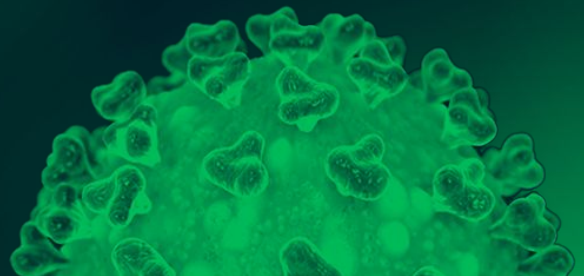


01.
INTRODUCTION

COVID-19

- On 11 March 2020, WHO declared Novel Coronavirus Disease (COVID-19) outbreak as a pandemic.
- As more people are getting affected by this pandemic, the need for accurate and relevant information regarding Covid-19 and its update has also increased.
- Everyone depended on Govt websites, news channels & press meets.

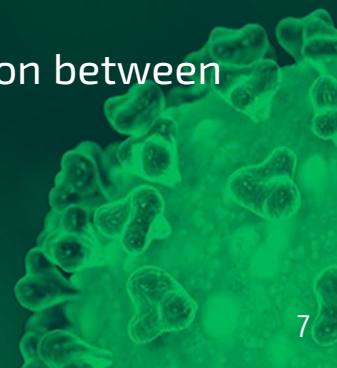


PROJECT OVERVIEW & FEATURES

1. The bot would answer all the queries/FAQ related to Covid-19
2. The bot would show the statistics worldwide, Country-wise, Indian State, District as well as cases on Google Map using 3rd Party API
3. Able to send Report to User Email with Prevention Measure Attachments.
4. Able to show Help Desk, Live News, Govt Announcements, Images and Videos related to Covid-19.
5. Able to Save User-Bot conversation on Database.

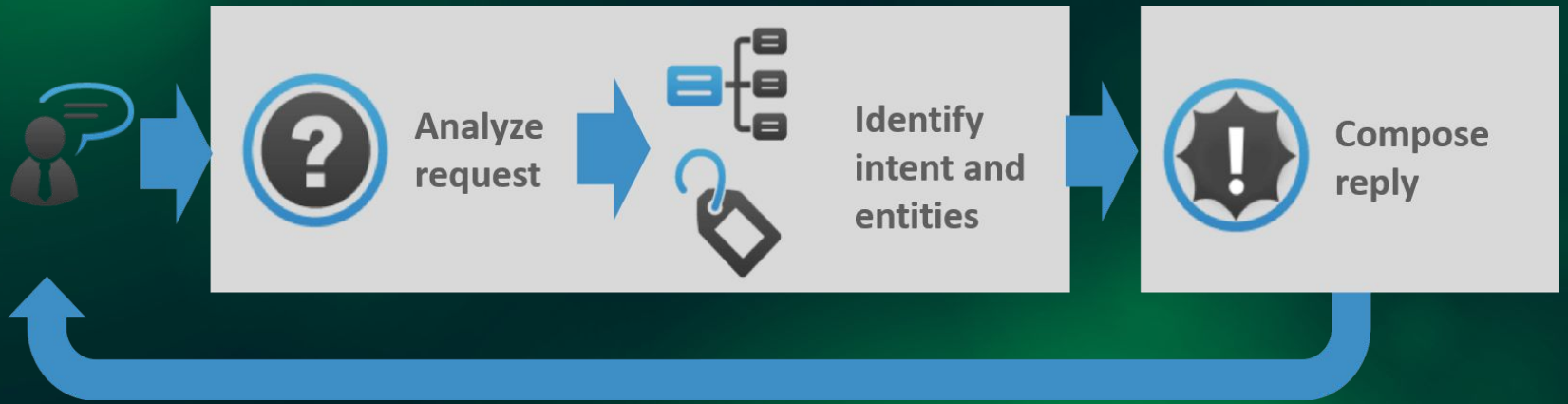
WHAT IS A CHATBOT ?

- A chatbot is a Artificial Intelligence Software that can simulate a conversation (or a chat) with a user in natural language through messaging applications, website, mobile apps or through telephone.
- A chatbot is often described as one of the most advanced and promising expressions of interaction between humans and machines.
- It only represents the natural evolution of question answering leveraging Natural Language Processing(NLP)
- A chatbot is the industry's newest tool designed to simplify the interaction between humans and computers



HOW CHATBOT WORKS ?

A chatbot returns a response based on input from a user. This process may look simple; in practice, things are quite complex. It analyzes the user's request to identify the user intent and to extract relevant entities. Once the user's intent has been identified, the chatbot must provide the most appropriate response for the user's request



WHY CHATBOTS ARE IMPORTANT ?

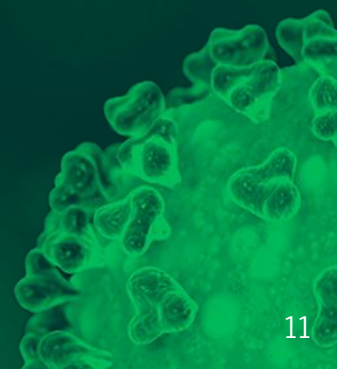
- Chatbot applications streamline interactions between people and services, enhancing user experience.
- At the same time, they offer companies new opportunities to improve the customer engagement process and operational efficiency by reducing the typical cost of customer service
- Chatbots can be used to assist users or customers for a specific task, whenever they want.
- And as chatbots do not get tired or bored, hence can be employed to provide customer service round the clock.

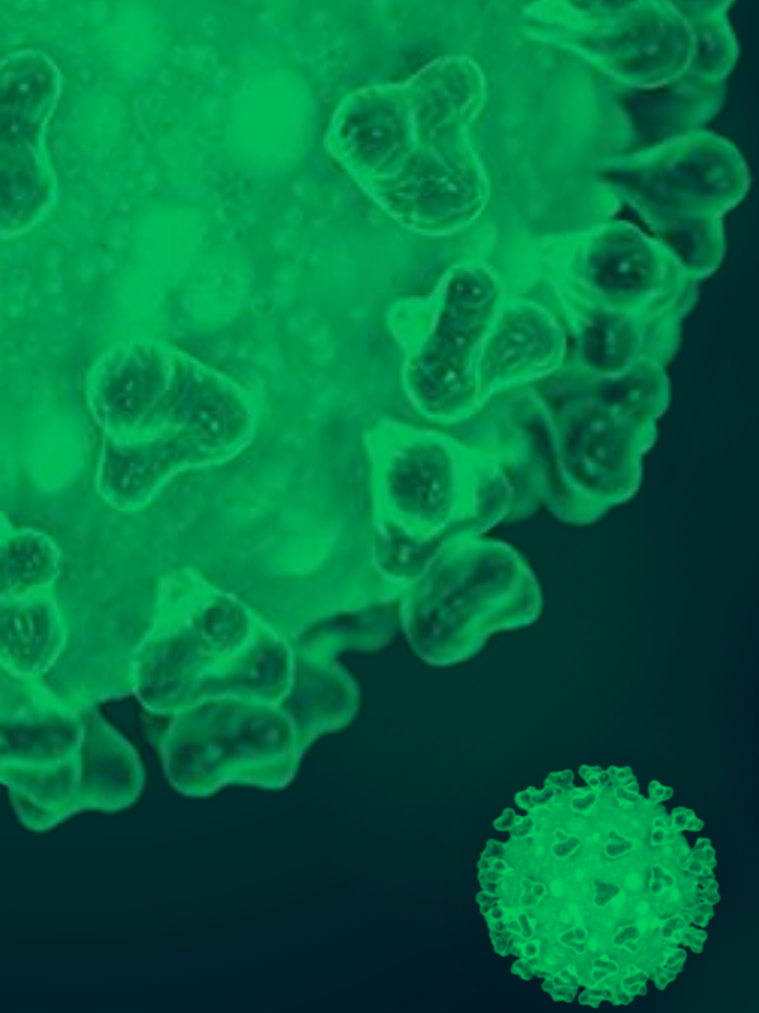
Targeted Audience

Chatbot can be used by anyone who uses social media platforms like facebook, telegram, whatsapp, slack etc.

STAGES

- Design : What to build ?
- Develop : How to build ?
- Testing : Checking whether works fine
- Deploy : How to deliver ?





02.
GOOGLE
DialogFlow

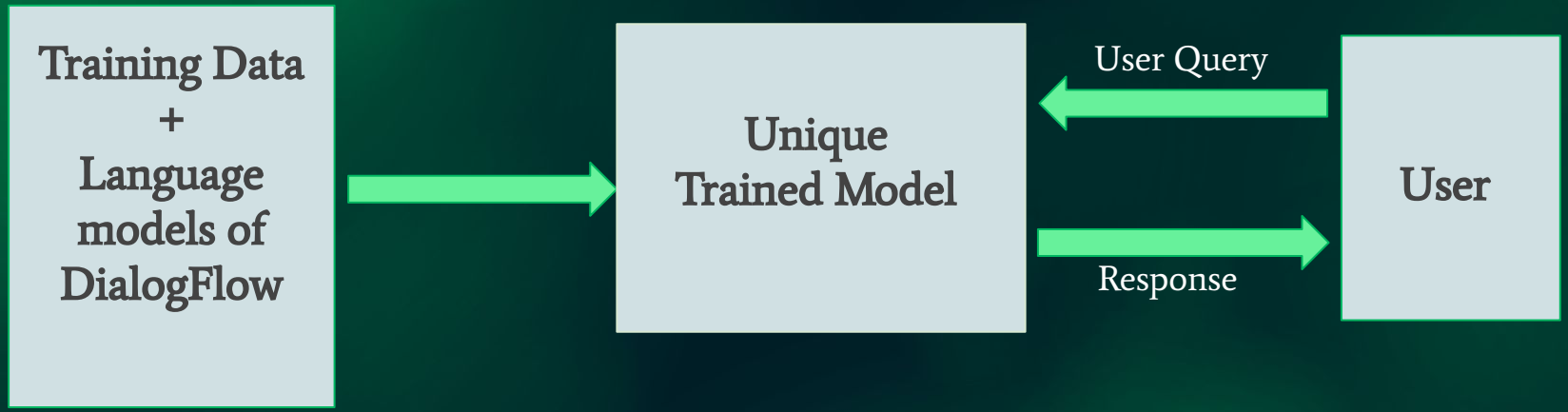
WHAT IS GOOGLE Dialog Flow ?

- A natural language understanding platform that makes it easy to design and integrate a conversational user interface into your mobile app, web application, device, bot, interactive voice response system, and so on.

- It is an end to end developer platform for building natural and rich conversational experiences.

- DialogFlow can analyze multiple types of input from customers including, text or audio input(like from a phone or voice recording)

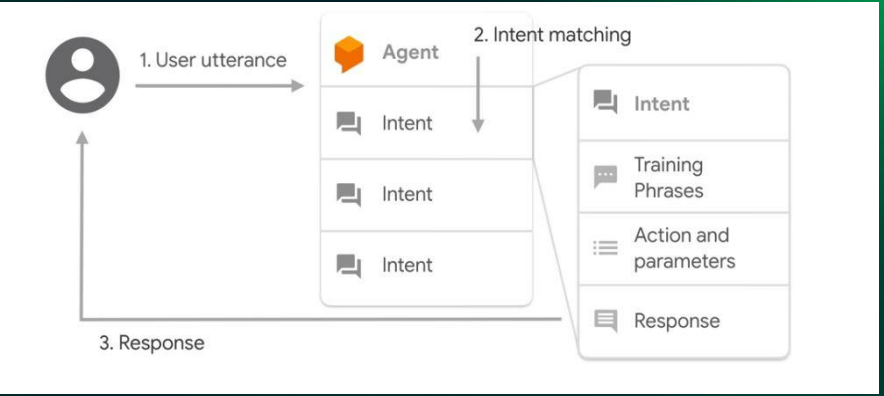
WORKING OF Dialog Flow



AGENTS

- Virtual agent that handles conversations with your end-user.
- Design and build a Dialog flow agent to handle the types of conversations required for your system.
- A Dialog flow agent is similar to a human call center agent. You train them both to handle expected conversation scenarios, and your training does not need to be overly explicit.

INTENTS



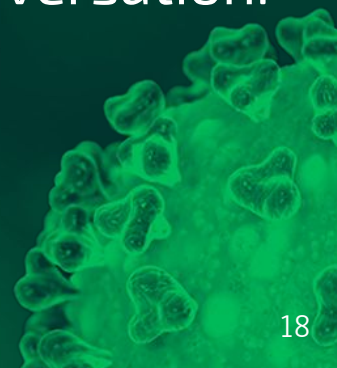
- Intents are the actions your user want to execute.
- It determines where conversation will go and what an agent should do.
- Intents are more like root verbs in the dialogue.
- We need to train the agents to recognize the intents from the phrases or conversations.
- We need to add training phrases, then train it and test it.
- There are fall-back intents and follow up intents.

ENTITY

- Entities are used to extract useful facts from users.
- Entities helps to identify who, what, when, where.
- We need to create entities and give synonyms.
- We also want to map entities with the intent.
- There are many system entities like time, date, country etc.

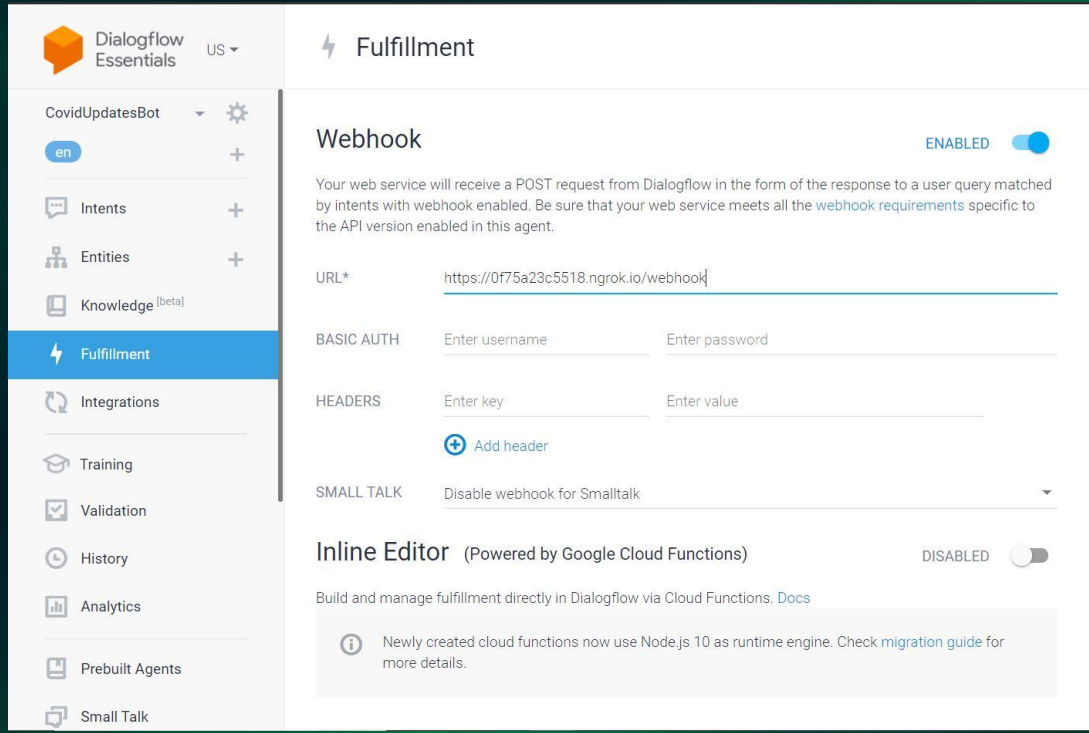
CONTEXT

- Context allows the agent to avoid repetition in a conversation.
- Store informations.
- There is input context and output context.
- Context gives a follow up conversation.



FULFILLMENT

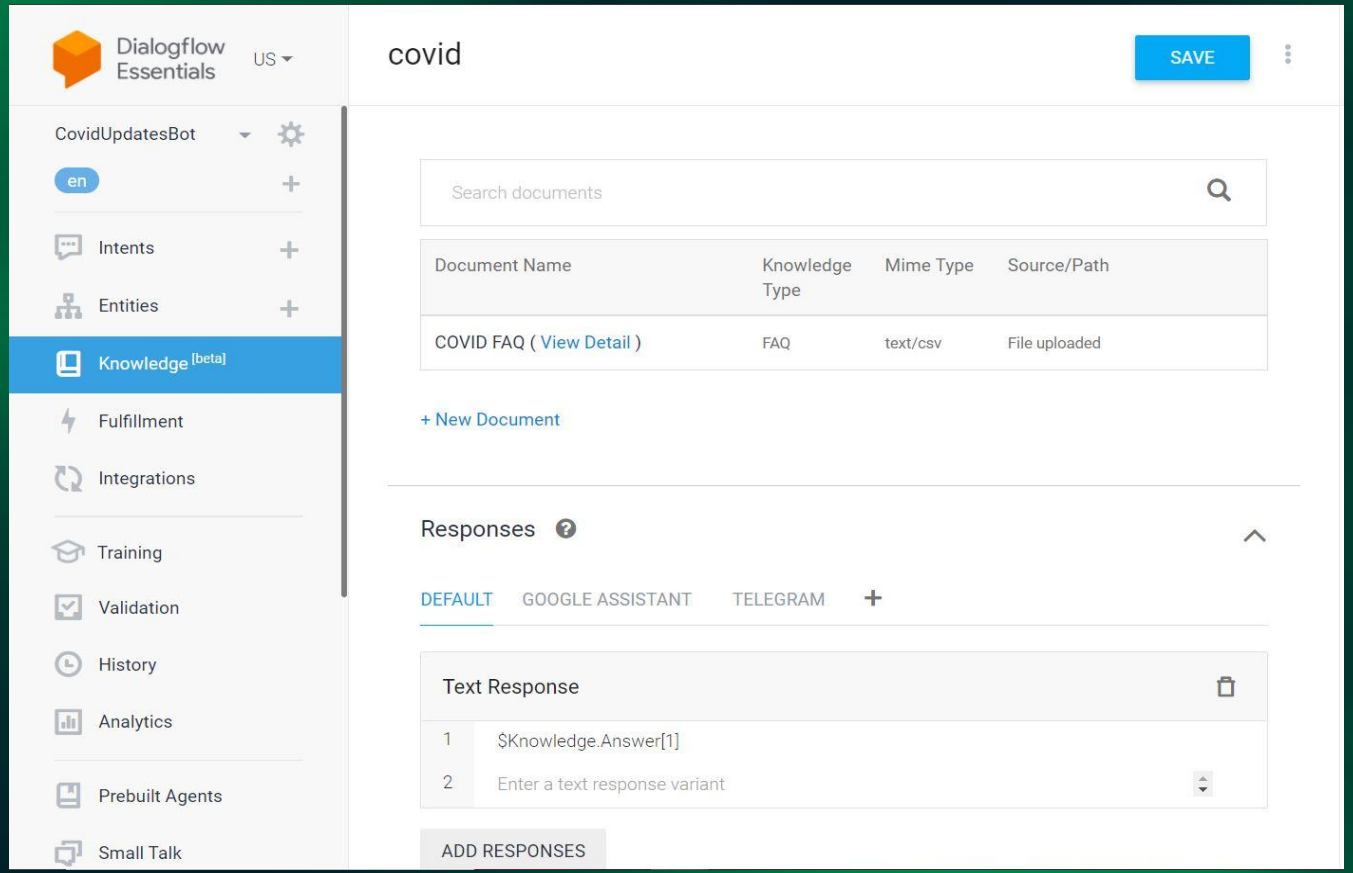
- Actions are mapped.
- Helps agent to access external system or data stores.
- We can write code in the fulfillment section.



KNOWLEDGE BASE

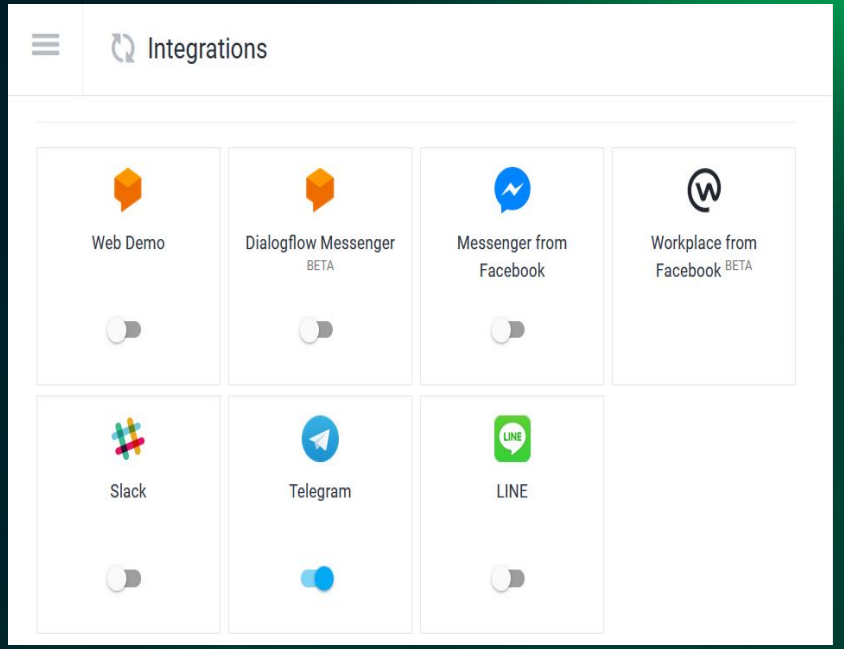
- A knowledge base is configured with a default text response populated with the best matching knowledge answer.
- You can change this response and add rich response messages.
- Knowledge responses may contain multiple answers, and you can reference these answers in your configured responses.
- Stored in as csv file
- Which should be updated based on latest news.

KNOWLEDGE BASE

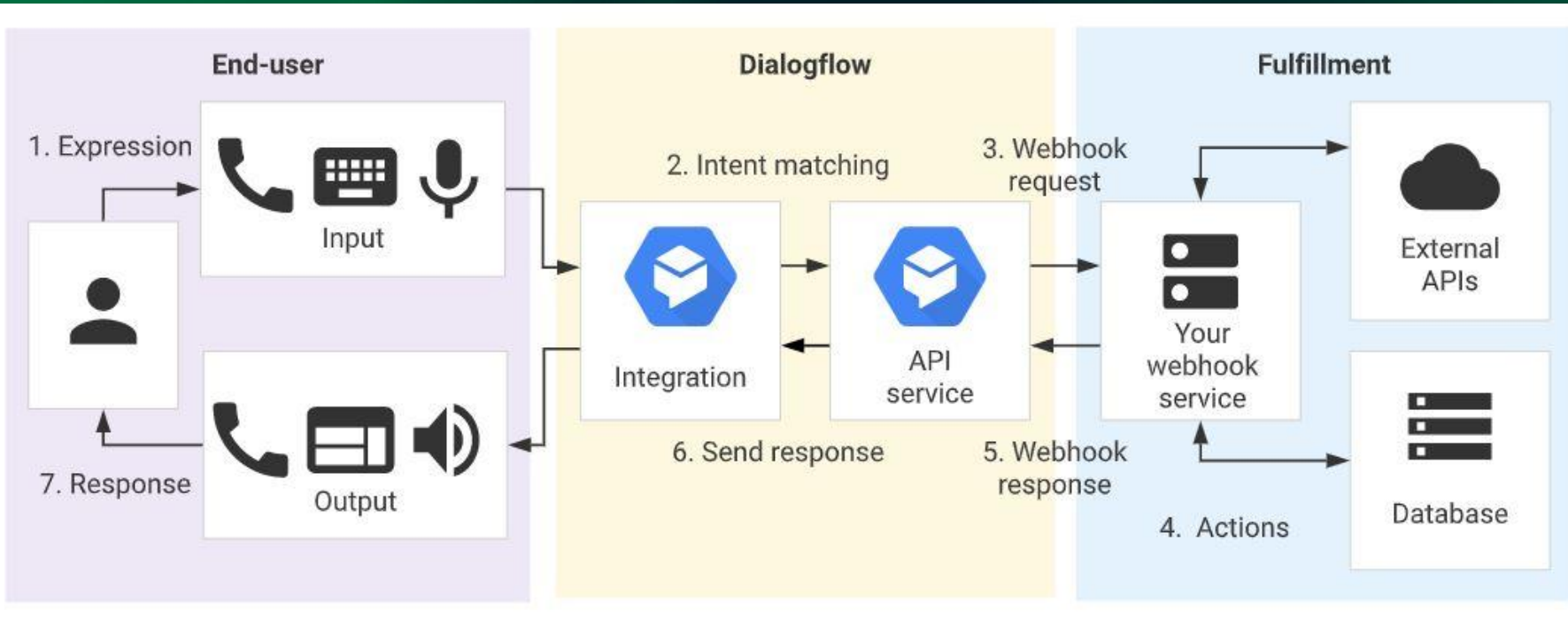


INTEGRATION

- We can integrate the chatbot with:
  - Telegram
  - Facebook messenger
  - Slack
  - Website
  - Whatsapp
- We can also integrate with whatsapp using twilio sandbox.

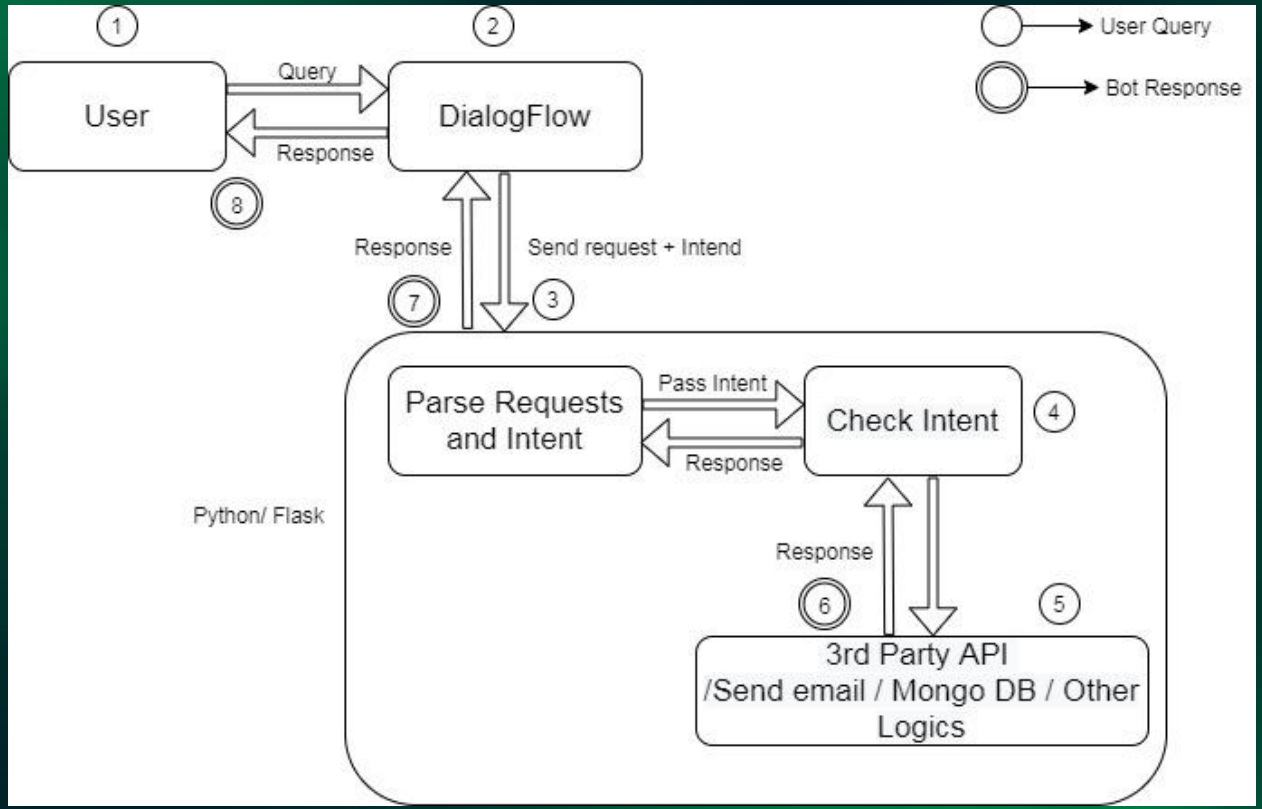


Working of Dialog Flow

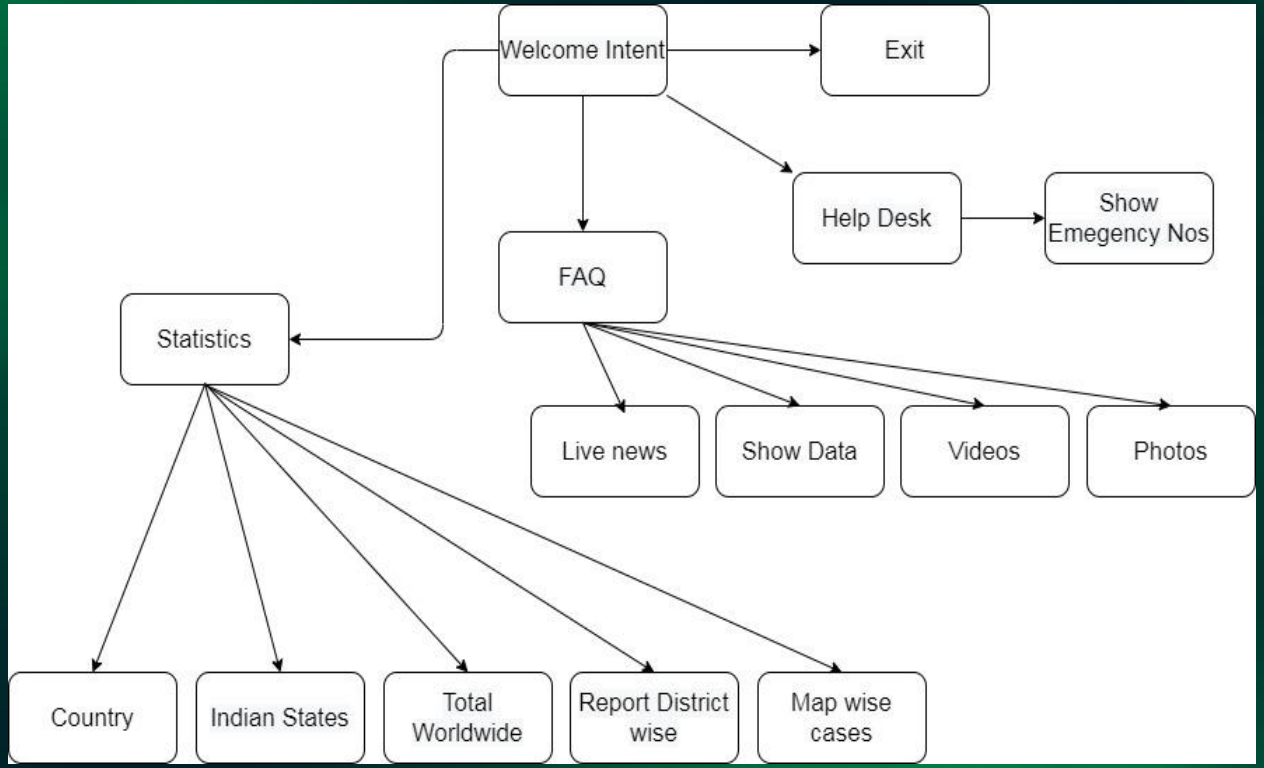


03.
DESIGN OF COVID-19 UPDATES BOT

PROJECT FLOW



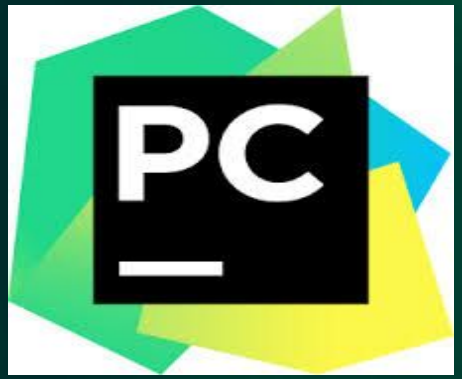
INTENT FLOW IN GOOGLE Dialog Flow



04.
COMPONENTS IN BUILDING COVID-19 BOT

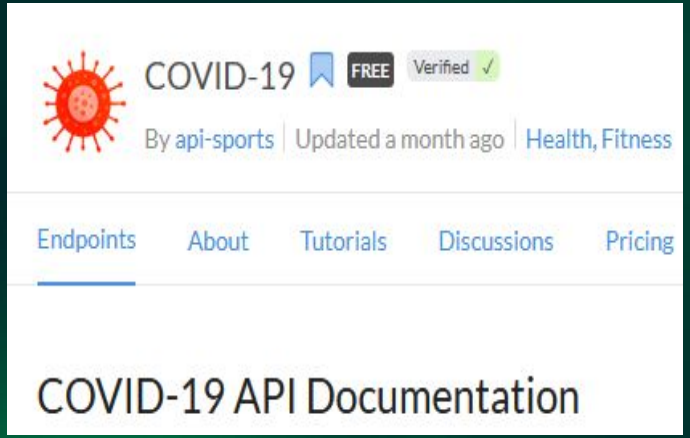
PYTHON CHARM

- PyCharm is an integrated development environment (IDE)
- It provides a wide range of essential tools for Python developers, tightly integrated to create a convenient environment for productive Python, web, and data science development.
- It provides code analysis, a graphical debugger, an integrated unit tester, integration with version control systems (VCSes), and supports web development with Django as well as data science with Anaconda.
- PyCharm is cross-platform, with Windows, macOS and Linux versions.



RAPID API

- RapidAPI is the world's largest API Marketplace — used by over one million developers to discover and connect to thousands of APIs.
- Using RapidAPI, developers can search and test the APIs, subscribe, and connect to the APIs — all with a single account, single API key and single SDK.
- Find the APIs that you need for your project, embed the API into your app, and track usage of all your APIs through a single dashboard.
- If you have an API you've created, use RapidAPI to make it available to over 1 million developers already utilizing APIs through RapidAPI.

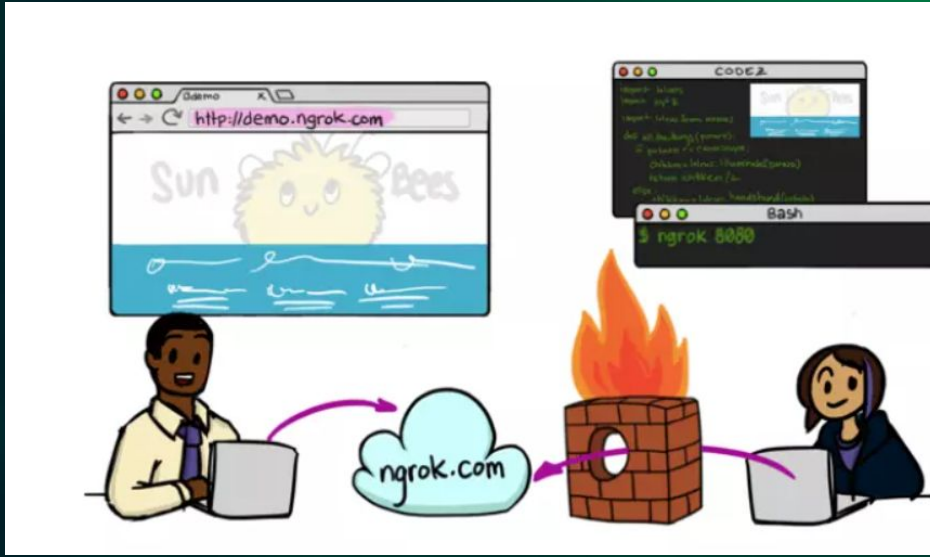


PYTHON FLASK

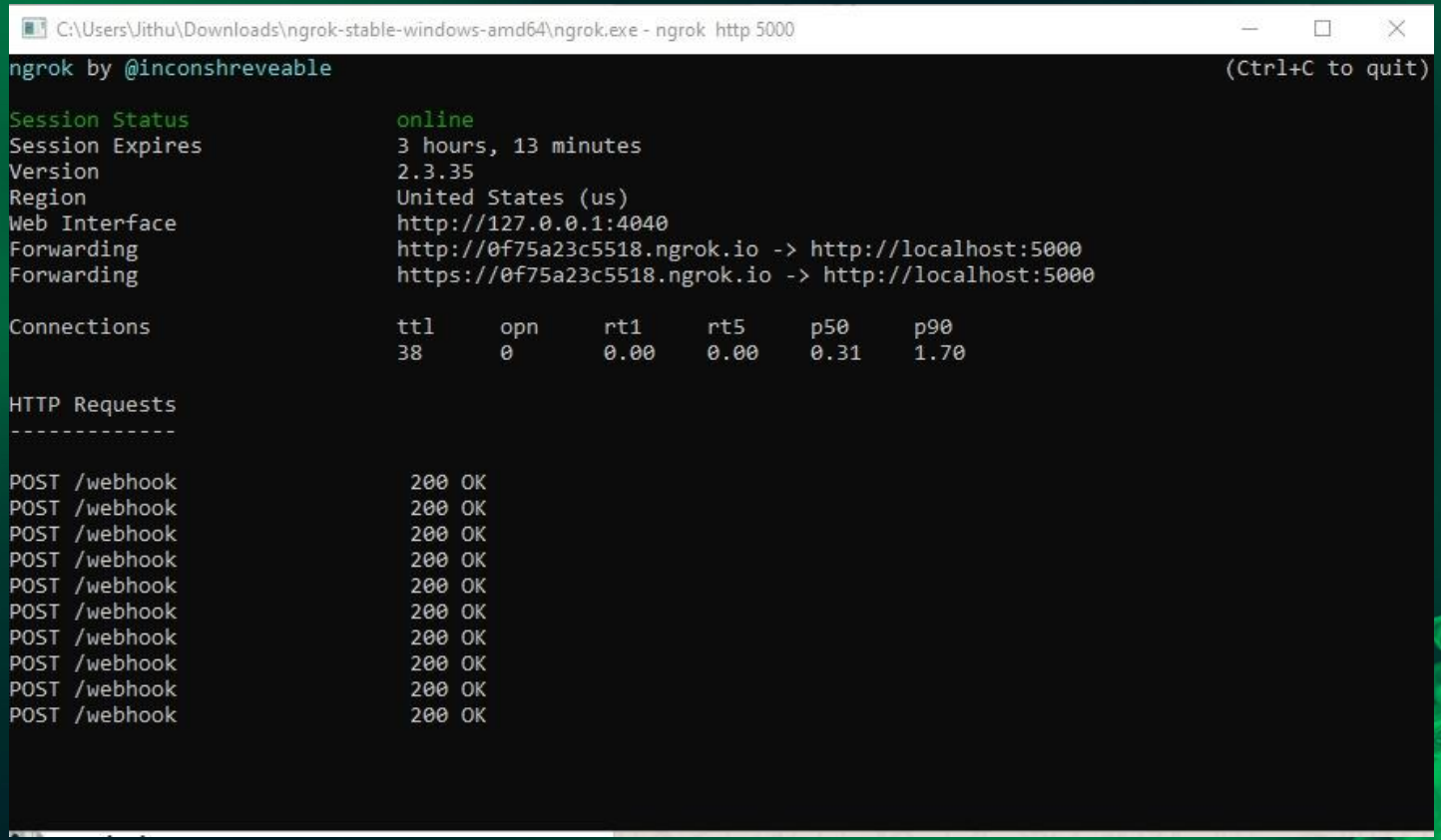
- Flask is a micro web framework written in Python.
- Does not require particular tools or libraries.
- A third-party Python library used for developing web applications
- No database abstraction layer, form validation, or any other components where pre-existing third-party libraries provide common functions.
- Supports extensions that can add application features as if they were implemented in Flask itself.

NGROK

- ngrok is a cross-platform application.
- Enables developers to expose a local development server to the Internet with minimal effort.
- A free and lightweight tool that creates a secure tunnel on local machine along with a public URL that can use for browsing your local site.
- When ngrok is running, it listens on the same port that our local web server is running on and proxies external requests to the local machine.



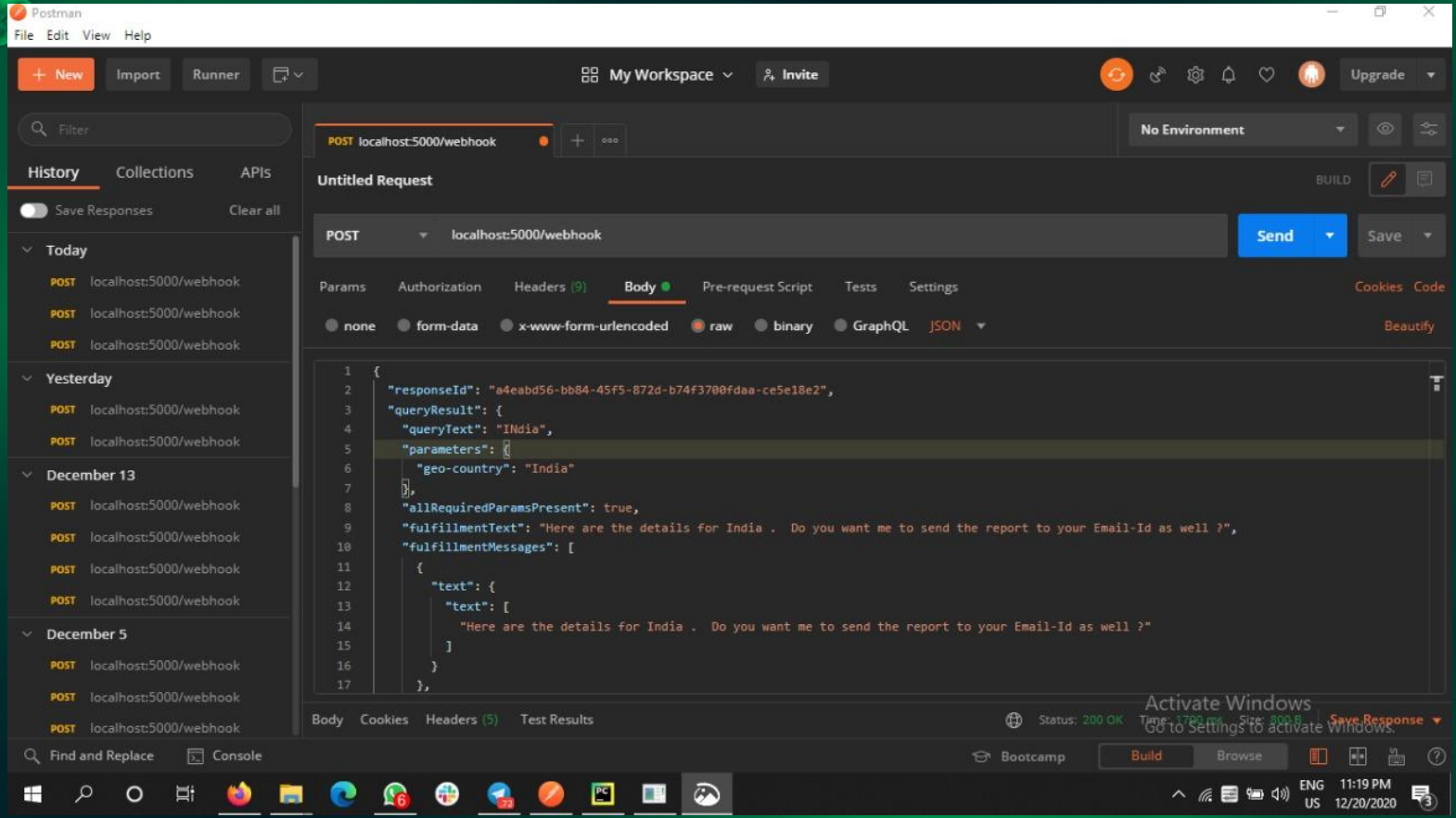
HOSTING ON NGROK



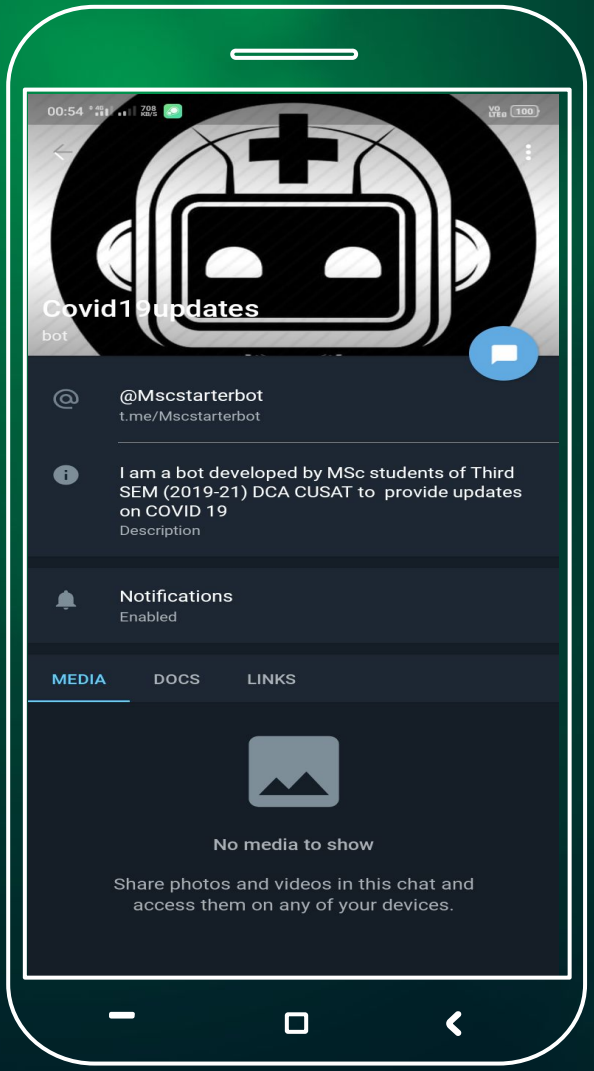
POSTMAN

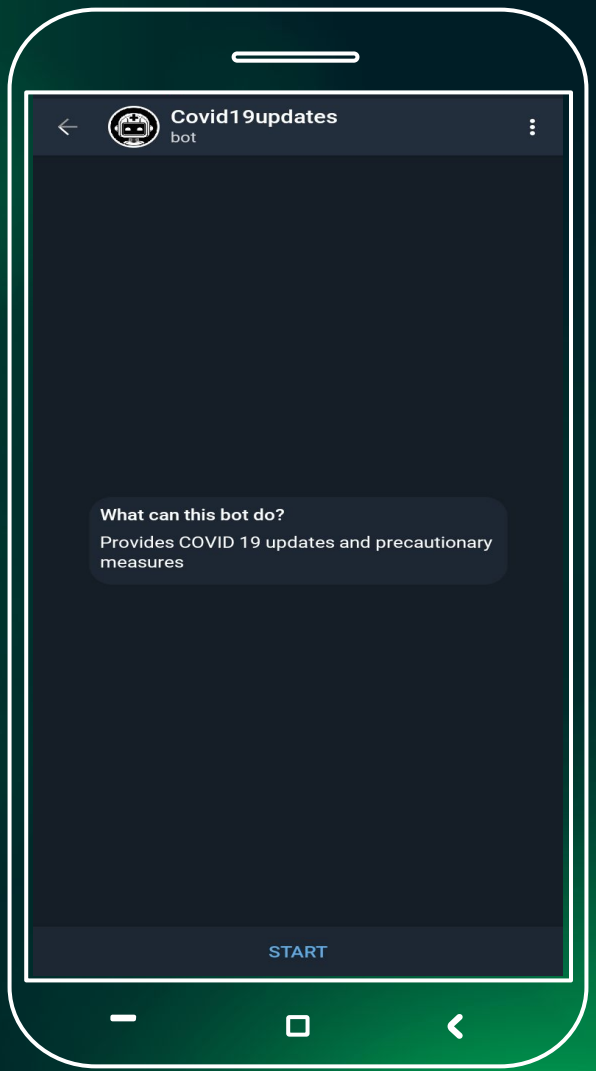
- A collaboration platform for API development.
- Simplifies each step of building an API and streamline collaboration for creating better APIs—faster.
- Allows to create, share, test and document APIs. This is done by allowing users to create and save simple and complex HTTP/s requests, as well as read their responses.
- Interactive and automatic tool for verifying the APIs of your project.
- It presents you with a friendly GUI for constructing requests and reading responses.
- It works on the backend, and makes sure that each API is working as intended.
- It has the ability to make various types of HTTP requests(GET, POST, PUT, PATCH), saving environments for later use, converting the API to code for various languages(like JavaScript, Python).
- Has the feature of accessibility, automatic testing, debugging, continuous integration etc.

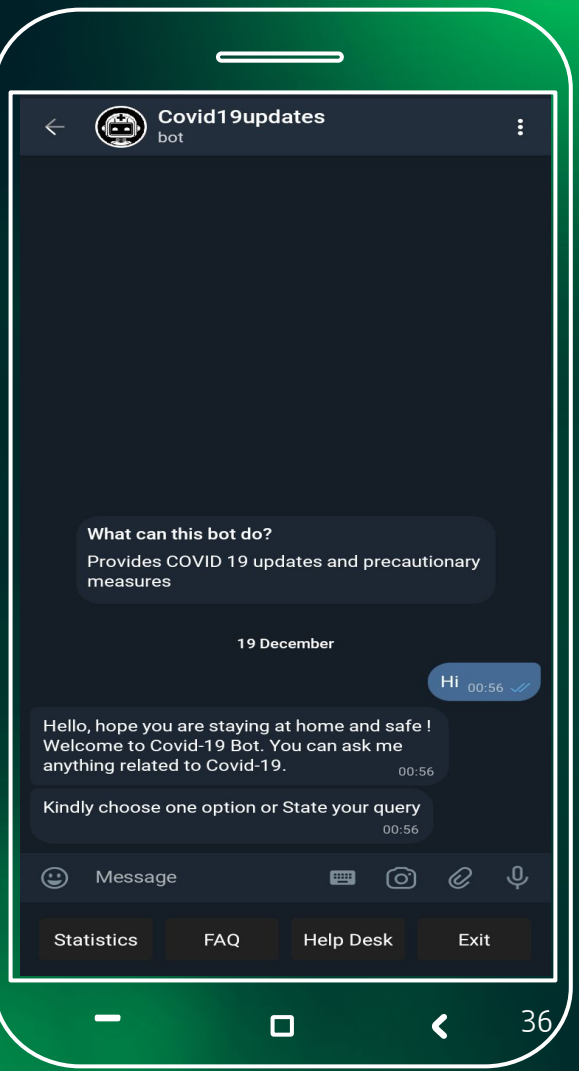
TESTING WITH POSTMAN

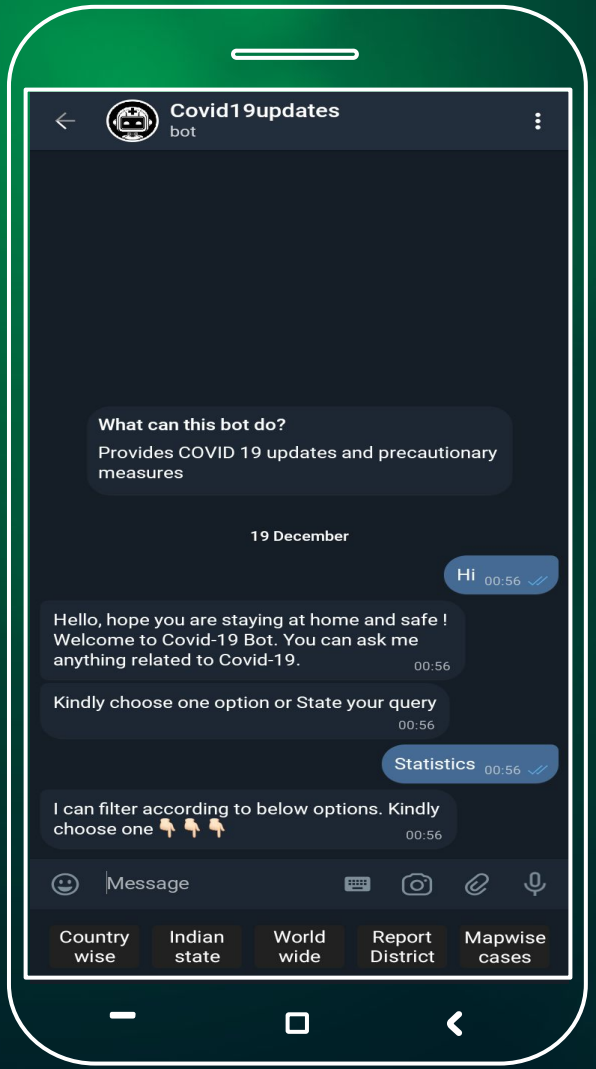


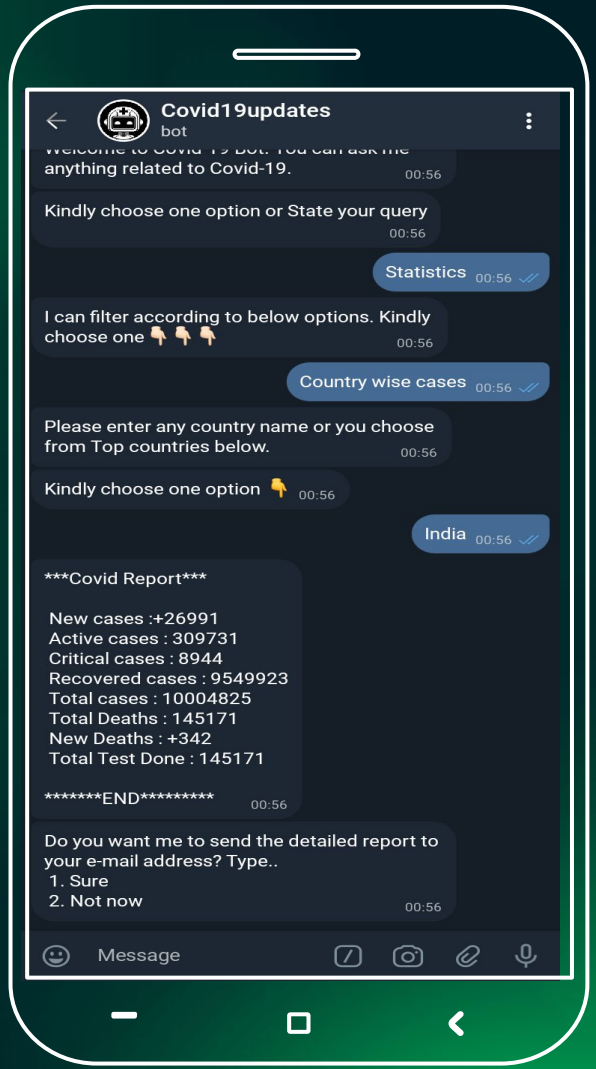
05.
COVID-19 UPDATES BOT -TELEGRAM

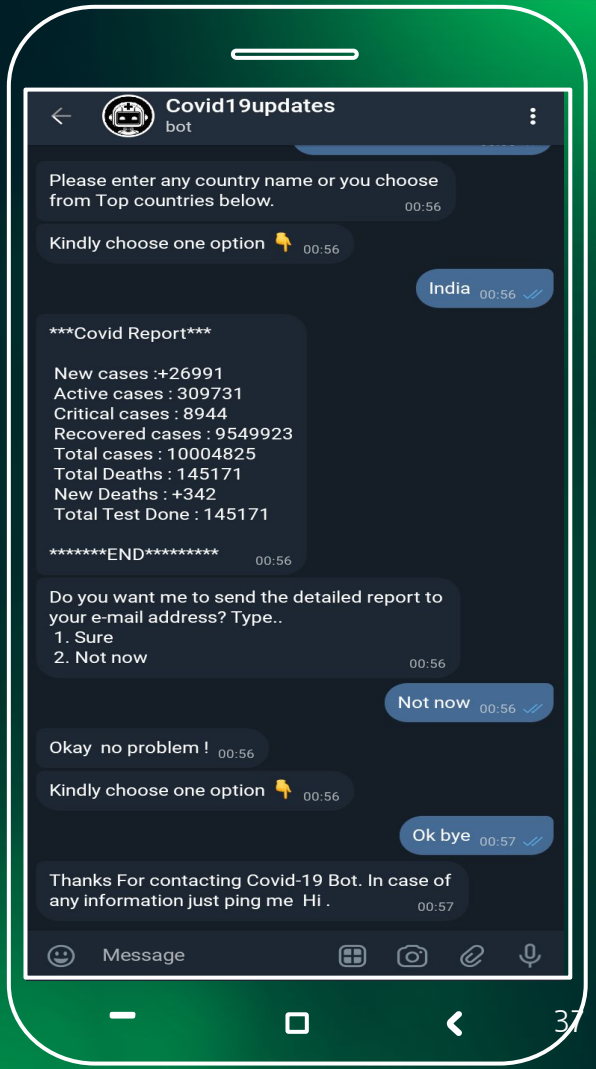

Covid19updates
bot
@Mscstarterbot
t.me/Mscstarterbot
I am a bot developed by MSc students of Third SEM (2019-21) DCA CUSAT to provide updates on COVID 19
Description
Notifications
Enabled
MEDIA
DOCS
LINKS
No media to show
Share photos and videos in this chat and access them on any of your devices.

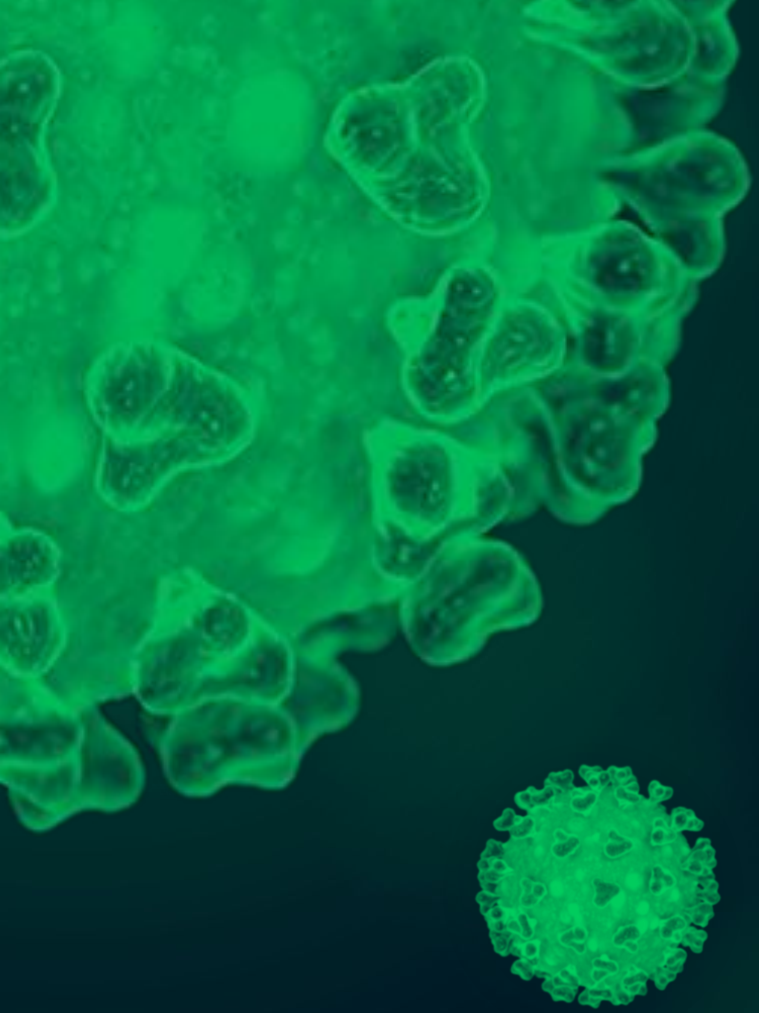

Covid19updates
bot
What can this bot do?
Provides COVID 19 updates and precautionary measures
START


Covid19updates
bot
What can this bot do?
Provides COVID 19 updates and precautionary measures
19 December
Hi 00:56
Hello, hope you are staying at home and safe ! Welcome to Covid-19 Bot. You can ask me anything related to Covid-19. 00:56
Kindly choose one option or State your query 00:56
Message
Statistics
FAQ
Help Desk
Exit


Covid19updates
bot
What can this bot do?
Provides COVID 19 updates and precautionary measures
19 December
Hi 00:56
Hello, hope you are staying at home and safe ! Welcome to Covid-19 Bot. You can ask me anything related to Covid-19. 00:56
Kindly choose one option or State your query 00:56
Statistics 00:56
I can filter according to below options. Kindly choose one 👇👇👇 00:56
Message
Country wise
Indian state
World wide
Report District
Mapwise cases


Covid19updates
bot
anything related to Covid-19. 00:56
Kindly choose one option or State your query 00:56
Statistics 00:56
I can filter according to below options. Kindly choose one 👇👇👇 00:56
Country wise cases 00:56
Please enter any country name or you choose from Top countries below. 00:56
Kindly choose one option 👇 00:56
India 00:56
Covid Report
New cases :+26991
Active cases : 309731
Critical cases : 8944
Recovered cases : 9549923
Total cases : 10004825
Total Deaths : 145171
New Deaths : +342
Total Test Done : 145171
*******END********* 00:56
Do you want me to send the detailed report to your e-mail address? Type..
1. Sure
2. Not now 00:56
Message


Covid19updates
bot
Please enter any country name or you choose from Top countries below. 00:56
Kindly choose one option 👇 00:56
India 00:56
Covid Report
New cases :+26991
Active cases : 309731
Critical cases : 8944
Recovered cases : 9549923
Total cases : 10004825
Total Deaths : 145171
New Deaths : +342
Total Test Done : 145171
*******END********* 00:56
Do you want me to send the detailed report to your e-mail address? Type..
1. Sure
2. Not now 00:56
Not now 00:56
Okay no problem ! 00:56
Kindly choose one option 👇 00:56
Ok bye 00:57
Thanks For contacting Covid-19 Bot. In case of any information just ping me Hi . 00:57
Message



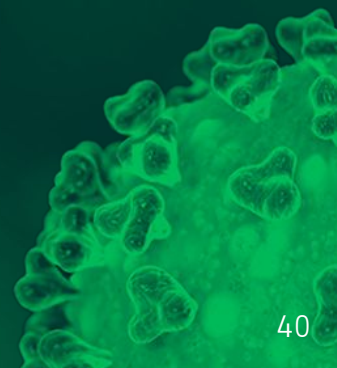
06.
CONCLUSION

RESULT

- In this project, we have created a chatbot that can give the covid updates, precautions and safety measures through telegram.
- It is embedded with Natural Language Processing (NLP) and Natural Language Understanding (NLU) to understand the user's query and return respective responses.
- Users can have a pleasant conversation with our chatbot in a casual way and can ask about the covid statistics.
- Users can even request for getting the details into their mail.
- Users need not have to search for the details into various websites or dependent on news , instead of this they can get the details through a simple chat. Users can also ask for government announcements regarding covid -19, live news etc.
- Chatbot : https://t.me/Mscstarterbot

FUTURE SCOPE

- Currently, we have integrated our chatbot with telegram only.
- It can also be integrated with whatsapp.
- Also this project can be further extended with functionalities like giving details of healthcare facilities nearby their location, asking for symptoms and giving personalized health care instructions to the covid patients based on the symptoms.
- Can be extended to many other natural languages
- Audio queries



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THANK
YOU