Chatbot

# Introduction

* We will be using the python (using Jupyter notebook) language specifically Keras(it is a library written in python) to make the chatbot.
* Ever felt lonely? ever felt that you can't share something with others? A chatbot is a piece of software which can communicate with us just like “Siri” and “google” and can make your loneliness disappear
* Technically chatbots are used in [dialog systems](https://en.wikipedia.org/wiki/Dialog_system) for various purposes including customer service, request routing, or for information gathering.
* Chatbots are typically classified into usage categories that include: [commerce](https://en.wikipedia.org/wiki/Conversational_commerce), [education](https://en.wikipedia.org/wiki/Education), [entertainment](https://en.wikipedia.org/wiki/Entertainment), [finance](https://en.wikipedia.org/wiki/Finance), [health](https://en.wikipedia.org/wiki/Health), [news](https://en.wikipedia.org/wiki/News), and [productivity](https://en.wikipedia.org/wiki/Productivity).
* Our chatbot will focus on the **health** domain i.e it will help the doctors and also other users in cases of hospitality and medication.
* It will remind the users when to take medicine and also clear doubts related to their health problems. Like when they need to visit the doctor and also suggest remedies at home.
* Well for pharmacists it will help him to know more about the medicine.and for the doctor, it will help him to provide medication and other facilities for his patient.
* Basically there are 2 types of chatbots namely

1. Retrieval based

Uses predefined patterns and responses.then it uses the heuristics approach to select the appropriate response. This is basically for the goal-oriented chatbots to drive our customers with the best experiences. Simply scan for general keywords and generate responses using common phrases obtained from an associated library or database.

1. Generative based

Not based on predefined responses. Based on the sequence to sequence neural networks. This requires a lot of data and deep learning concepts. Chatbot applications use extensive word-classification processes, Natural Language processors, and sophisticated [AI](https://en.wikipedia.org/wiki/Artificial_intelligence).

* Smart devices can be worn to track the patient’s health and send data to individual physicians. In turn, chatbots can collect the data from each report the doctor encounters for providing future assistance required. Besides that, chatbots can instruct users on how to use the devices to make them work correctly.
* So in this project, we will be working for **the generative based** chatbot.

# Building idea of the chatbot

* Firstly we need to train the chatbot using the datasets
* We should have a user-friendly environment like that of the gif mentioned in the reference links(1) which we will be doing with the GUI interface
* Later we have to write the script to build and train the chatbot which involves preprocessing the data and loading the data as well (Tensorflow-Keras ).
* So after building and training the model we can test it by using the GUI.

# The dataset

* In this project of making the chatbot, we are going to use 2 datasets

1. The first dataset named diseases link given in the reference(6)

* In this data set, we have columns describing the name of the disease, symptoms, the link to describe more about the disease, causes, risk factor, treatment, medication and home remedies of that disease if there
* This is a csv() file

1. The second named intents link in the reference(7)

* This is a json(javascript object notation) file
* It is a text dataset and requires a lot of preprocessing the data
* This contains the patterns that we need to find and return the response to the user
* This dataset is divided by the categories (tag, pattern, response, context)

# Notebook link

We are using the colab notebooks as it has many advantages like:

1. It enables GPU acceleration
2. Open existing jupyter files
3. We can share in platforms like GitHub and also work in collab

[COLAB link](https://colab.research.google.com/drive/1y7uIfisdY5YTWZ5AWkQoo4QCOk8RwBR4)

# Skills used in the project

1. Python specifically libraries like

* Pandas
* Numpy
* Keras(TensorFlow)
* Nltk library
* …….

1. Deep learning

* NLP(Natural Language Processing)

1. GUI
2. Jupyter notebooks

# Blog link :

# Github links:

Balaji D:

Hridhi sethi:

# Reference links :

1. [GIF](https://d2h0cx97tjks2p.cloudfront.net/blogs/wp-content/uploads/sites/2/2019/12/Python-chatbot-project.gif)

This is just the gif of how the chatbot works

1. [Python Chatbot Project - Learn to build your first chatbot using NLTK & Keras](https://data-flair.training/blogs/python-chatbot-project/)

This is the link to actually make the chatbot

1. [ABOUT CHATBOT](https://en.wikipedia.org/wiki/Chatbot)
2. Making chatbot requirements - [How To Develop a Chatbot From Scratch](https://chatbotsmagazine.com/how-to-develop-a-chatbot-from-scratch-62bed1adab8c)
3. Benefits - [How Chatbots are Improving Healthcare](https://chatbotslife.com/how-chatbots-are-improving-healthcare-ec21e2d11acc)
4. The dataset related for doctors to detect the diseases [Diseases dataset](https://www.kaggle.com/priya1207/diseases-dataset)
5. Dataset for interaction [python-project-chatbot-codes.zi](https://drive.google.com/file/d/1763Y5zy7HmRYsOoBLQgUxQRGY6xCgQiN/view)p
6. [Get Started: 3 Ways to Load CSV files into Colab](https://towardsdatascience.com/3-ways-to-load-csv-files-into-colab-7c14fcbdcb92)
7. [How to Convert a JSON String to CSV using Python](https://datatofish.com/json-string-to-csv-python/)
8. [Category: nltk - Python Tutorial](https://pythonspot.com/category/nltk/) this tells the usage of the nltk library
9. [Convert JSON to CSV in Python](https://www.geeksforgeeks.org/convert-json-to-csv-in-python/)
10. [Running Jupyter Notebook on Colab - Margaret Maynard-Reid](https://medium.com/@margaretmz/running-jupyter-notebook-with-colab-f4a29a9c7156) about the jupyter colab notebook
11. [ABT CHATTERBOT](https://chatterbot.readthedocs.io/en/stable/)
12. [Where can I find a tutorial for building chatbots using python?](https://www.quora.com/Where-can-I-find-a-tutorial-for-building-chatbots-using-python)
13. [Building a Simple Chatbot from Scratch in Python (using NLTK)](https://medium.com/analytics-vidhya/building-a-simple-chatbot-in-python-using-nltk-7c8c8215ac6e)
14. [Removing stop words with NLTK in Python](https://www.geeksforgeeks.org/removing-stop-words-nltk-python/)
15. [Python - Remove Stopwords](https://www.tutorialspoint.com/python_text_processing/python_remove_stopwords.htm)
16. [Python for NLP: Creating Bag of Words Model from Scratch](https://stackabuse.com/python-for-nlp-creating-bag-of-words-model-from-scratch/)
17. [Bag of words (BoW) model in NLP](https://www.geeksforgeeks.org/bag-of-words-bow-model-in-nlp/)
18. [How to sort a Python dict (dictionary) by keys or values](https://www.saltycrane.com/blog/2007/09/how-to-sort-python-dictionary-by-keys/)
19. [Word Bags vs Word Sequences for Text Classification](https://towardsdatascience.com/word-bags-vs-word-sequences-for-text-classification-e0222c21d2ec)
20. <https://github.com/tensorlayer/seq2seq-chatbot>

## 

## Tasks

* Task1-writing up the doc and getting a picture of our chatbot
* Task2 - get our dataset ready
* Task3 - preprocessing the data
* Task3 -train our model
* Task4-build our model
* Task5-build GUI interface
* Task6-test our model
* Task7-Improve our model if needed
* Task8-deploy our project
* Task9-finalise project
* Task10-share in Github
* Task11-make a blog
* Task12-enjoy your success the way you want.
* Task13 -Think of a new project to do

Program

To change to csv file from json

#preprocessing the data and turning the json file to csv for convinience

import json

import csv

# Opening JSON file and loading the data

# into the variable data

with open('intents.json') as json\_file:

data = json.load(json\_file)

intents\_data = data['intents']

# now we will open a file for writing

data\_file = open('intent.csv', 'w')

# create the csv writer object

csv\_writer = csv.writer(data\_file)

# Counter variable used for writing

# headers to the CSV file

count = 0

for inte in intents\_data:

if count == 0:

# Writing headers of CSV file

header = inte.keys()

csv\_writer.writerow(header)

count += 1

# Writing data of CSV file

csv\_writer.writerow(inte.values())

data\_file.close()