**Intelligent Chatbot using Python with Speech**

**1K .Vishnu**

III B.Tech Department of ECE

Institute of Aeronautical Engineering, T.S , India

[19951a04m5@iare.ac.in](mailto:19951a04m5@iare.ac.in)

**2Vaibhav Karoshi**

III B.Tech Department of ECE

Institute of Aeronautical Engineering, T.S , India

[19951a04k4@iare.ac.in](mailto:19951a04k4@iare.ac.in)

**3PVS.Nishok Reddy**

III B.Tech Department of ECE

Institute of Aeronautical Engineering, T.S , India

[19951a04l8@iare.ac.in](mailto:19951a04l8@iare.ac.in)

**4D.Vamshi Krishna**

III B.Tech Department of ECE

Institute of Aeronautical Engineering, T.S , India

[19951a04l0@iare.ac.in](mailto:19951a04l0@iare.ac.in)

**5Dr.V Siva Nagaraju**

Professor of ECE

Institute of Aeronautical Engineering, T.S , India

[v.sivanagaraju@iare.ac.in](mailto:19951a04m5@iare.ac.in)

**6Dr.D Srikar**

Assistant Professor of ECE

Institute of Aeronautical Engineering, T.S , India

[d.srikar@iare.ac.in](mailto:d.srikar@iare.ac.in)

# Abstract:

A Chat-bot is a software application used to conduct an online chat conversation in the form of text or speech, instead of providing direct contact with a live human agent. Designed to convincingly simulate the way a human would behave as a conversational partner. With the chatbot, we don’t want to wait for customer helpline, they can easily clarity their doubts within seconds. A chatbot is used in many areas like WhatsApp, messenger, customer support, food order, personal finance assistance, Telegram, search and track flights, and many more. The main objective of this paper is to develop a Chatbot using Python in Jupyter notebook software and to develop an GUI interface using Tkinter library and trained Chatbot with text files containing information about some sample college to help the students to know about it. In this paper Chatbot will give response both in the form of text and Speech.

# Keywords:

Punkt model, WordNet Database, Artificial Intelligence (AI), Natural Language Processing (NLP), Graphical User Interface (GUI).

# Introduction:

Chat has become the center of focus in this current era, thus the bots are being utilized to deliver information engagingly and conveniently. Chatbot provides live interaction between human and machine. Natural Language Processing is used for developing Chatbot which is used for manipulating text or speech by any computer system. Chatbot is trained by some database. Creating Graphical user interface for the Chatbot and then testing Chatbot whether it is giving correct answers or not. Final step is to measure accuracy of the Chatbot.

**Training**

**Creating GUI**

**Testing**

**Measuring Accuracy**

We should download some python libraries in order to develop chatbot. Finally, Chatbot will respond to your questions asked. Chatbot can be described as an answering system where a system will be able to answer questions or statements submitted by users and allow users to control over the content to be displayed.

In the recent years Chatbots are increasing in number. Developing Chatbot is not a big deal and it is easy to deliver information through Chatbot. Most of them are using different algorithms and techniques for developing Chatbot effectively. This study is mainly dependent on expert personal’s results or any software or applications. Chat bots have huge demand on messaging apps and be more effective than humans. The aim of the present studies is to create a chat bot with different features and to respond both in the form of text and speech.

# Literature Survey:

Chatbots are known as conversational interfaces it’s the new way to interact with machines or systems. A Chatbot is develop for University related FAQs where they used Artificial Intelligence Markup Language (AIML) and Latent Semantic Analysis (LSA) and it gives response to people who wants to know about any University. It is majorly useful for the students who wants to join University for studies. Drawback of this paper is that they fail to give answers for some questions and there are still some problems in building data-driven system.[1] In next paper A Platform for Human- Chat bot Interaction Using Python [2] provided a better platform, web connectivity is also provided to evaluate the chatbot on a web-based platform which will help in analyzing Human- Chatbot interactions and its disadvantage is that they failed to provide an interactive Graphical User Interface and we create Chatbot using Python without using any Platform.

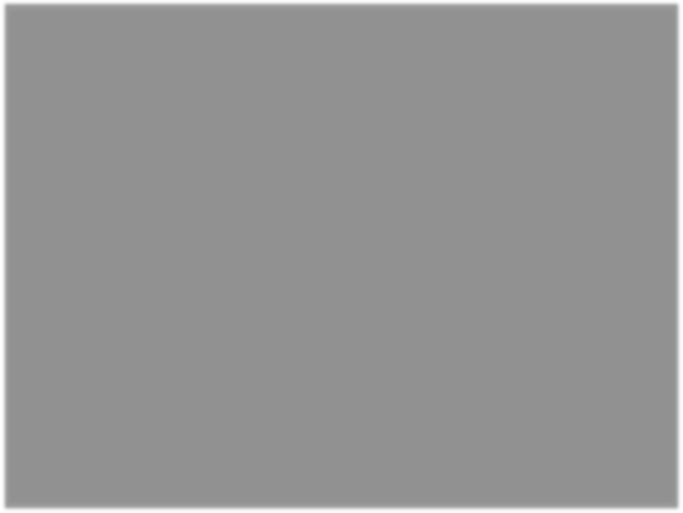
In Automatized Medical Chat bot (Medibot) paper [3] they built a diagnosis bot that engages patients in the conversation for any medical issue they provided a solution based on their profile but they used tags and Json files as their database and moreover results are not accurate. In next paper [4] for reducing stress or depression of students they built a Chatbot which includes API of Chatbot that will be developed with Cascading style sheet which covers all the styling part and the JavaScript is used for functioning the chatbot Back-end part will be done with Python programming language. It also contains various machine learning algorithms to learn the Chatbot by experiencing various user's responses and requests but without using Json files also we can create chatbots by using text files.

“Chat-Bot for College Management System Using A.I” [5] created the system which replies using an effective Graphical User Interface as if a real person is talking to the user. The user just has to register himself to the system and has to login to the system but we can make chatbot available to everyone even without any login details. The paper [6] uses Artificial Intelligence in order to help students to continue for higher Education in India but they failed to give response in the form of speech so that Chatbot can useful for blind people also. In paper[7] we learned how Chatbot works and its architecture and learned how to program Chatbot . In “Smart College Chatbot using ML and Python” paper we learned how to deal with college information, they totally gave information about their college and its disadvantage of Chatbot is that output is displayed only in the form text.

# In [9] “CHATBOT IN PYTHON” paper it is simple Chatbot and basic Chatbot which uses less libraries or modules and it also uses Natural Language Processing library to generate automatic response for the questions asked by the users. In [10] Bringing chatbots into education: Towards natural language negotiation of open learner models which is mainly focused on natural language processing and it provides information for students like to study in abroad and in top Universities and colleges . It is also useful for students who are preparing for competitive Exams like UPSC, GATE, JEE MAINS, TET exams but it displays output only in the form of text only, if we add voice it will also useful for blind people also. So, we developed a Chatbot which displays output in the form of speech and text.

# Existing Method:

The previous paper wants to develop Chatbot using Python using Json library they created file in which they used tags, patterns, responses we will get answers only if we ask questions which is in patterns. They used Tensorflow, numpy libraries to use to Artificial Intelligence concepts, Json, pickle, random, string libraries to train Chatbot and Tkinter Library for creating GUI in Python



# Working Algorithm

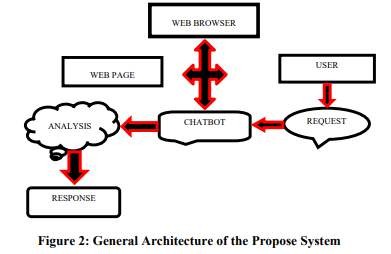
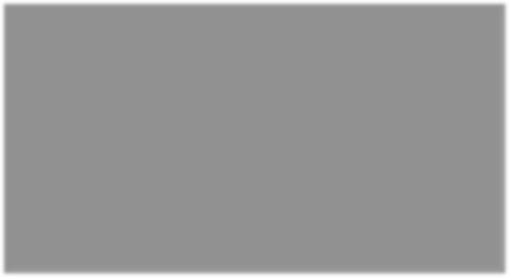
Step1) Start

Step 2) Prepare a data set to develop Chatbot.

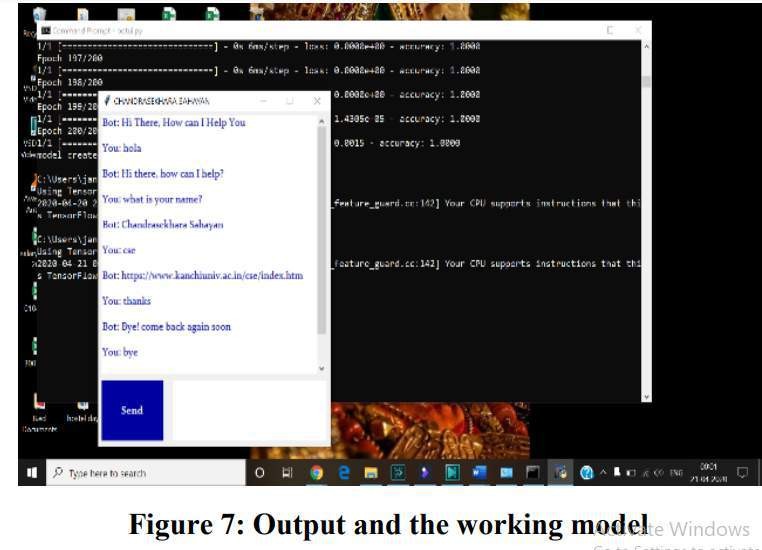
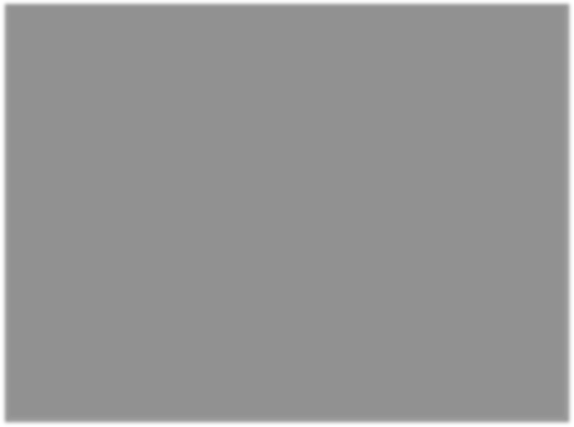
Step 3) Prepare the set of tags with the patterns and responses. Step 4) Install the required libraries for chatbot in Python.

Step 5) Train the Chatbot with predefined queries. Step 6) Create the GUI

Step 7) Execute the codes for the results. Step 8) Stop.



The Chatbot will provide you some links regarding admissions, applications etc. If Chatbot was not able to answer your it will display “sorry, can’t understand you, please give me more info” on GUI. The aim of the project is to decrease human-power and to give answer to the user query at faster rate and to access to Chatbot from any web browser.



# Problem Identification:

In the Existing method they used Json files but I will use text files for training Chatbot and in order to improve better visibility of Graphical User Interface (GUI), I added options for changing color of theme and for changing font styles in the Graphical User Interface which is suitable for us, using Tkinter library in python. In Existing method Chatbot will respond only in the form of text but I will develop Chatbot to respond both in the form of text and Speech using pyttsx3 library in Python.

# Proposed Method:

I want to develop Chatbot which can respond both in the form of text and speech. At first, we are going to train a Chatbot using text files with consist of information about some sample college with the help of Punkt model and WordNet Database. With the help of Tkinter library we will create Graphical User Interface and added options for changing color of theme and font styles. We are going to use nltk library in Python for Natural Language Processing. It is useful to generate automatic responses for User’s questions.

# Algorithm:

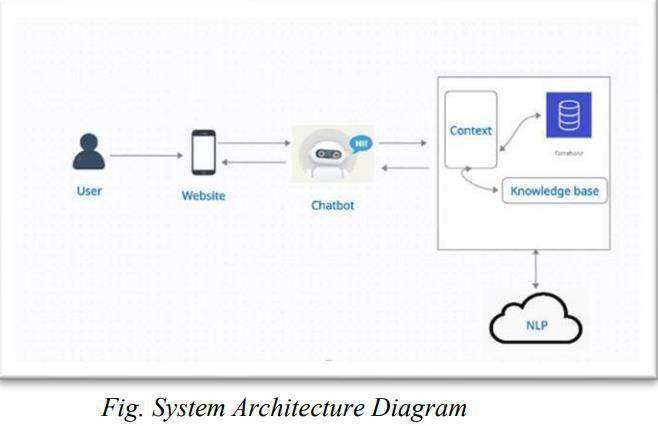
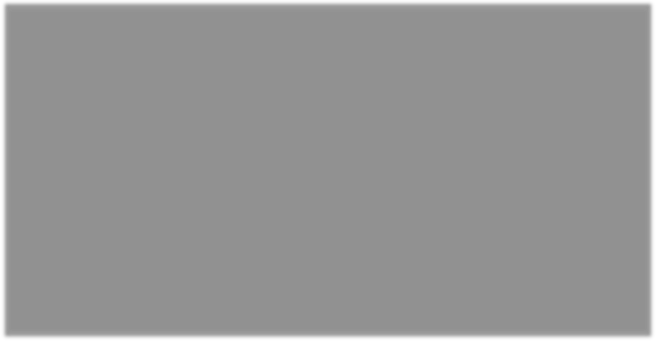
Step 1) Start

Step 2) Prepare data which is required to develop Chatbot

Step 3) Install all libraries required to develop Chatbot

Step 4) Train a Chatbot using text files with the help of Punkt model and WordNet Database. Step 5) create GUI and add speech to the Chatbot.

Step 6) Test the Chatbot by executing code Step 7) Stop



# Software Used:

Anaconda software. Jupyter notebook.

# Libraries Used:

* nltk, numpy, random, string, Tkinter, pyttsx3, time, threading, sklearn libraries used.

# Flowchart:



**Start**

**Input**

**checking for answer**



**output in text**

**output in speech**

**Any new input**

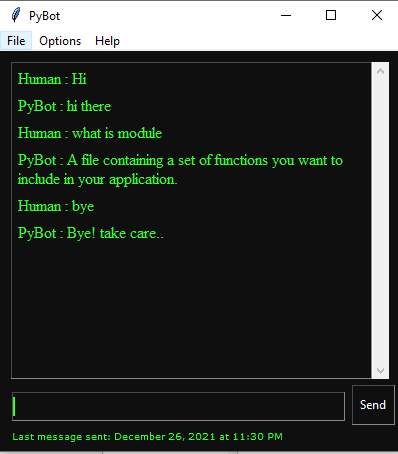
**end**

No

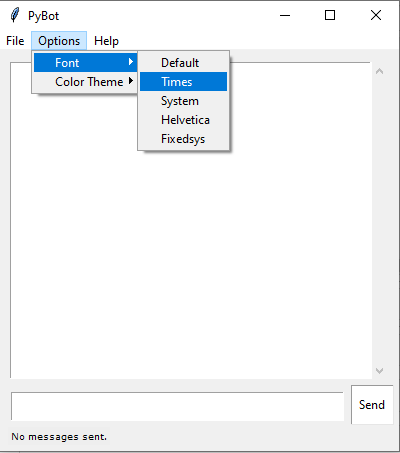
Yes

**Results and Discussions:**

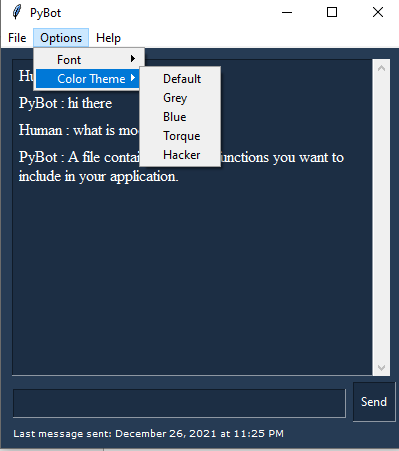
The Graphical User Interface of Chatbot



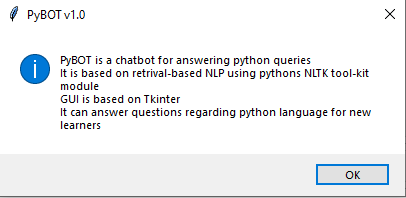
The options for changing font styles



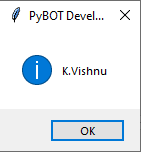
The options for changing color of theme of GUI and Last message sent time.



About Chatbot or Pybot



Developer



# Conclusion and Future Scope:

Human language can be transformed into the data transformation with the help of NLP. With the help of NLP, we can easily develop Chatbot. As Chatbot will respond both in the form of text and speech it will be more interactive for humans to communicate with it. Not only that Chatbot will increase the customer base by enhancing the customer support services, thereby helping to increase sales. Nowadays Chatbots are increasing day by day due to its various Applications in real world and Future Scope for this paper is that to develop self-learning Chatbots so that it should answer to any question that is asked and to add Speech recognition to it, in order to be more interactive with the people.

# References:

1. Bhavika R. Ranoliya , Nidhi Raghuwansh and Sanjay Singh, “Chatbot for University Related

FAQs”,IEEE, 2017.

1. Bhaumik Kohli, Tanupriya Choudhury, Shilpi Sharma, Praveen Kumar.,” A Platform for

Human- Chat bot Interaction Using Python”, IEEE, 2018.

1. Nitirajsingh Sandu, Ergun Gide, “Adoption of AI- Chat bots to Enhance Student Learning

Experience in Higher Education in India”, IEEE ,2019.

1. Prakhar Srivastava, Nishant Singh,” Automatized Medical Chat bot (Medibot)”, IEEE, 2020.
2. Falguni Patel, Riya Thakore,Ishita Nandwani, Santosh kumar Bharti, “Combating Depression

in Students using an Intelligent Chat Bot: A Cognitive Behavioral Therapy”, IEEE ,2019.

1. Prof.K.Bala,Mukesh Kumar, Sayali Hulawale, Sahil Pandita, “Chat-Bot For College Management System Using A.I”, International Research Journal of Engineering and Technology (IRJET).
2. How do Chatbot works? A guide to Chatbot Architecture.

<https://marutitech.com/chatbots-work-guide-chatbot-architecture/>

# [8] Smart College Chatbot using ML and Python.

# https://www.researchgate.net/publication/347423315\_Smart\_College\_Chatbot\_using\_ML\_and\_Python

# [9] CHATBOT IN PYTHON Akshay Kumar, Pankaj Kumar Meena, Debiprasanna Panda, Ms. Sangeetha

# [10] Bringing chatbots into education: Towards natural language negotiation of open learner models. Know.- Based Syst. 20, 2 (Mar. 2007), 177-185.