JIITNav

Minor Project 2

Submitted by:

G125

Aniket Kumar	**19803012**
Priyanshi Raman	**19803006**
Agnideep Mukherjee	**19803015**

Under the supervision of:

Dr. Apeksha Aggarwal

Department of CSE/IT

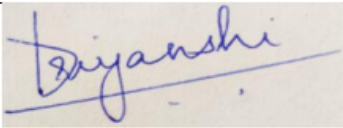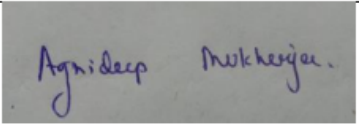**Jaypee Institute of Information Technology University, Noida**

MAY 2022

ACKNOWLEDGEMENT

Many people have aided us in accomplishing this job successfully. We'd like to express our gratitude to everyone involved in this endeavor.

First and foremost, we want to express our gratitude to our teachers for assisting us in achieving our goals. Then we'd like to express our gratitude to our mentor (Apeksha Aggarwal Ma'am) and our panel members (Amit Mishra Sir and Kapil Madan Sir), who guided us through this project and taught us a lot. We were able to complete this assignment thanks to their advice and directions.

We are thankful to and fortunate enough to get constant encouragement, support and guidance from our respected university and the CSE department helped us in successfully completing our project work. We hope you all like our endeavor.

Student ID	Student Name	Student signature
19803006	Priyanshi Raman	
19803012	Aniket Kumar	
19803015	Agnideep Mukherjee	

2

DECLARATION

We hereby declare that this submission is our own work and that, to the best of our knowledge and beliefs, it contains no material previously published or written by another person nor material which has been accepted for the award of any other degree or diploma from a university or other institute of higher learning, except where due acknowledgment has been made in the text.

Place: Jaypee Institute of Information Technology

Date: 15/05/2022

Name: Aniket Kumar

Enrolment No.:19803012

Name: Priyanshi Raman

Enrolment No.:19803006

Name: Agnideep Mukherjee

Enrolment No.:19803015

CERTIFICATE

This is to certify that the work titled "JIITNav" submitted by the aforementioned group of students of Jaypee Institute of Information Technology, Noida has been carried out under my supervision. This work has not been submitted partially or wholly to any other university or institute for the award of any other degree or diploma.

Digital Signature of Supervisor

Dr. Apeksha Aggarwal

Assistant Professor

May 12, 2021

ABSTRACT

A chatbot can converse using either audio or textual methods (Text-to-Speech or Speech-to-Text). Chatbots are "chat robots" that deliver extremely engaging, conversational experiences via voice and text and may be modified and used on mobile devices, web browsers, and popular chat platforms.

Chatbots are not intelligent in and of themselves. Chatbots are designed and educated with artificial intelligence or machine learning algorithms to provide a service to individuals or businesses who interact with them via instant messaging in order to gain intelligence. It functions similarly to other social networking platforms such as Facebook, Twitter, and Slack, in that users can communicate with one another. Chatbots can be used in businesses to answer consumer questions or by an individual user to perform tasks such as receiving the weather forecast, ordering a product online, or searching the internet for information. Chabot's intelligence will develop when it is exposed to new situations on a regular basis.

Students (mostly the new students who recently joined college) face a lot of problems in finding classrooms, labs, faculty details, etc. Sometimes we get late for our lectures just because we keep wandering here and there, looking for our classes and as a result we waste a lot of time.

With this project, we aim to build a chatbot web application which will help students and other JIIT members to find their desired locations in the campus. Other features will include information about different departments and their respective faculties like cabin number, email ids, phone number, etc.

TABLE OF CONTENTS

INTRODUCTION

A chatbot, at its most basic level, is a computer programme that simulates and processes human dialogue (written or spoken), allowing humans to communicate with digital devices as if they were speaking with a real person. Chatbots can be as simple as one-line programmes that respond to a simple query, or as sophisticated as digital assistants that learn and adapt as they gather and process data to give increasing levels of personalisation. Whether you realize it or not, you've undoubtedly engaged with a chatbot. For example, you're studying a product on your computer when a window appears on your screen asking if you need assistance. Maybe you're on your way to a concert and use your phone to seek a ride through chat. Alternatively, you may have used voice commands to purchase a coffee from your local café and received a response indicating when your order will be ready and how much it will cost. These are just a few circumstances in which you might come with a chatbot. Society is becoming more "mobile-first" as a result of digitization. Chatbots are becoming more crucial in this mobility-driven change as messaging applications become more prevalent. Intelligent conversational chatbots are frequently used as user interfaces for mobile applications, and they are transforming how organizations and customers communicate.

The origins of the chatbot can be traced back to Alan Turing's idea of sentient robots in the 1950s. Since then, artificial intelligence, which is the foundation for chatbots, has advanced to encompass superintelligent supercomputers like IBM Watson. The phone tree was the first chatbot, and it sent phone-in clients down a long and tedious route of selecting one choice after another to navigate an automated customer support paradigm. This paradigm evolved into pop-up, live, onscreen dialogues as technology improved and AI, ML, and NLP became more sophisticated. And thus the evolutionary process has gone on.

Chatbots are widely used to improve the IT service management experience, which focuses on self-service and automating internal operations. Common activities such as

password changes, system status, outage notifications, and knowledge management may be easily automated and made available 24 hours a day, seven days a week with an intelligent chatbot, while expanding access to commonly used voice and text-based conversational interfaces.

PROBLEM STATEMENT

- To build a chatbot for JIIT students which will help them to find different locations and contact information about faculties and administration.

A chatbot is a computer programme that simulates and processes human dialogue (written or spoken), allowing humans to communicate with digital devices as if they were speaking with a real person. Chatbots can be as simple as one-line programmes that respond to a simple query, or as sophisticated as digital assistants that learn and adapt as they gather and process data to give increasing levels of personalisation.

How do chatbots work?

Chatbots process data to respond to a variety of requests, using AI, automated rules, natural-language processing (NLP), and machine learning (ML).

There are two main types of chatbots.

- **Task-oriented (declarative) chatbots** are single-purpose programmes that do only one task. They provide automated yet conversational responses to user enquiries using rules, NLP, and very little machine learning. These chatbots' interactions are highly detailed and structured, and they're best suited to support and service functions—think comprehensive, interactive FAQs. Common questions, such as inquiries about business hours or simple transactions with few variables, can be handled by task-oriented chatbots. Though they use natural language processing (NLP) to give end users a conversational experience, their capabilities are very limited. These are the most popular chatbots right now.

- **Data-driven and predictive (conversational) chatbots** are virtual assistants, sometimes known as digital assistants, that are far more complex, interactive, and individualized than task-oriented chatbots. These chatbots are context-aware and use natural-language understanding (NLU), natural-language processing (NLP), and machine learning (ML) to learn as they go. They employ analytics and predictive intelligence to provide personalisation based on user profiles and previous activity. Over time, digital assistants can learn a user's preferences,

provide recommendations, and even foresee needs. They can initiate dialogues in addition to monitoring data and intent. Consumer-oriented, data-driven, predictive chatbots include Apple's Siri and Amazon's Alexa.

Why chatbots can revolutionize your business.

Chatbots are a one-time investment that can provide fast self-service, deflect a large number of enquiries, and scale as your needs change. So, if you're considering using chatbots to improve your customer service, here are a few reasons to get started.

Through frictionless help, chatbots can improve customer satisfaction. It can provide exact responses to questions and lead clients to the appropriate resources. Furthermore, intelligent chatbots can provide contextual guidance and, if necessary, escalate discussions to a real agent.

- **SAVE RESPONDING TIME:** Common questions like "What's your refund policy?" shouldn't need a support agent to intervene. Chatbots can understand the intent of the questions and give a direct answer. It can also help customers with troubleshooting workflows to solve their queries themselves.

- **AVAILABLE ANYTIME AND ANYWHERE:** The most crucial advantage of using a chatbot is that it can provide service around the clock. Also, because chatbots are available on every screen and in message programmes like Facebook Messenger, WhatsApp, and Apple Business Chat, they offer a low-friction option.

- **IMPROVE CUSTOMER ENGAGEMENT:** Your company should be able to communicate with clients at each stage of their journey. By encouraging customers to participate in talks that can help them create a relationship with your company, chatbots can help customize conversations, nurture leads better, and enhance engagement across your funnel.

- **PERSONALIZE CONVERSATIONS EVERY TIME:** Chatbots let you swiftly create brand loyalty by sharing updates and notifications. It's tough for your company to engage with clients on a human basis at scale. Chatbots, on the other hand, may

grasp your customer's intent, order history, and personalize outreach to improve the quality of engagement.

- **NUDGE TOWARDS ACTIONS:** Chatbots let you keep in touch with your consumers. They can initiate actions and processes such as scheduling appointments, making payments, and gathering feedback. As a result, the visitor will not be forced to depart without making a purchase.

The Chatbots work based on three classification methods:

1. Pattern Matches:

Bots utilize pattern matches to group the text and it produces   an appropriate response from the clients. Artificial Intelligence Markup Language (AIML), is a standard structured model of these Patterns.

A simple example of Pattern matching is;

```
<aiml version="1.0"encoding="UTF-8"?>
        <category>
                <pattern> WHO INVENTED EMAIL</pattern>
                <template>according to google Ray Tomlinson invented email.</template>
        <category>

        <category>
                <pattern> DO YOU KNOW WHO * IS</pattern>
                <template>
                        <srai>WHO IS <stat/></srai>
                <template>
        </category>
</aiml>
```

Then the machine gives the following output:

Human: Who invented the email?

Robot: According to Google, Ray Tomlinson invented email.

The Chatbot knows the appropriate answer because her or his name is in the related pattern. Similarly, the chatbots react to anything relating it to the correlated patterns. But it can't go past the related pattern. To take it to a progressive stage, algorithms can help.

For every sort of question, a remarkable pattern must be accessible in the database to give a reasonable response. With a number of pattern combinations, it makes a hierarchical structure. We utilize algorithms to lessen the classifiers and produce a more reasonable structure.

2. Natural Language Understanding (NLU)
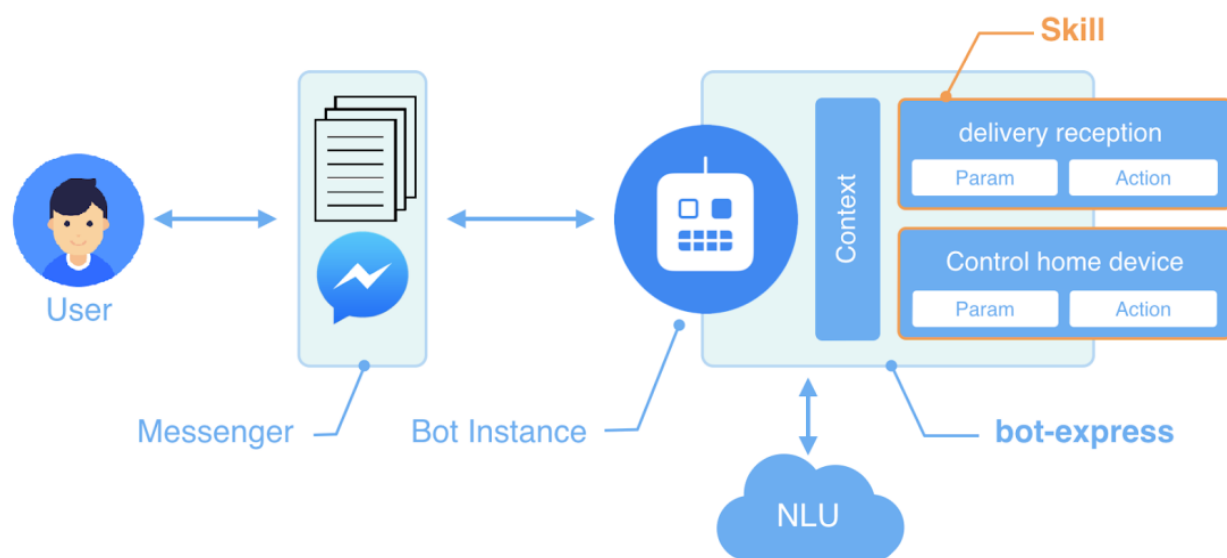
This NLU has 3 specific concepts as follows:

Entities: This essentially represents an idea to your chatbot. For example, it may be a payment system in your Ecommerce chatbot.

Context: When a natural language understanding algorithm examines a sentence, it doesn't have the historical backdrop of the user's text conversation. This implies that, if it gets a response to a question it has been recently asked, it won't recall the inquiry. So, the phases during the conversation of chat are separately stored. It can either be banners like "Ordering Pizza". Or could include other parameters like "Domino's: Restaurant". With context, you can easily relate expectations with the necessity of comprehending the last question.

Expectations: This is what a chatbot must fulfill when the customer sends an inquiry. Which can be the same for different inquiries. For example, the goal triggered for, "I want to purchase a white pair of shoes", and "Do you have white shoes? I want to purchase them" or "show me a white pair of shoes", is the same: a list of shops selling white shoes. Hence, all user typing text shows a single command which is the identifying tag; white shoes.

3. Natural Language Processing (NLP)

Natural language processing (NLP) is an Artificial Intelligence (AI) subfield (AI). This is a frequently used technology for personal assistants in a variety of disciplines and industries. This technology analyses the user's speech, breaks it down for proper comprehension, and processes it accordingly. This is a relatively new and effective strategy, as a result of which it is in high demand in today's market. Natural Language Processing is a new subject that has already seen significant advancements, such as compatibility with smart gadgets and interactive human conversations.

AI applications in NLP focused on knowledge representation, logical reasoning, and constraint satisfaction. It was first applied to semantics and then to grammar in this case. The increasing use of statistical methodologies such as machine learning and data mining on a vast scale has resulted from a dramatic transformation in NLP research over the previous decade. Because of the amount of labor that needs to be done these days,

the necessity for automation is never-ending. When it comes to automated applications, NLP is a very beneficial component. NLP's applicability has made it one of the most in-demand methods for applying machine learning.

Natural Language Processing (NLP) is a field that studies how computers and humans communicate in natural language by combining computer science, linguistics, and machine learning. The goal of natural language processing (NLP) is for computers to be able to understand and generate human language. This not only increases the efficiency of human work, but also facilitates human-machine interaction. NLP is a method of bridging the gap between humans and electronic technologies. NLP consists of speech recognition (the translation of spoken language into text), Natural Language Understanding (the ability of the computer to understand what we are saying) and Natural Language Generation (the generation of a natural language by a computer).

METHODOLOGY

Chatbot or bot – is a computer program that simulates a natural human conversation. Users communicate with a chatbot via the chat interface or by voice, like how they would talk to a real person.

The framework of this project is shown in Figure 1. First the user gives an input in some form of greeting then the chatbot replies with a predefined response to that input. Then the user interacts with the chatbot with various questions.Chatbots powered by AI understand natural language, but they also follow a predetermined path to ensure that they solve consumers' problems. They can recall the conversation's context as well as the user's preferences. When necessary, these chatbots can bounce from one point of discussion situation to another and respond to random customer demands.
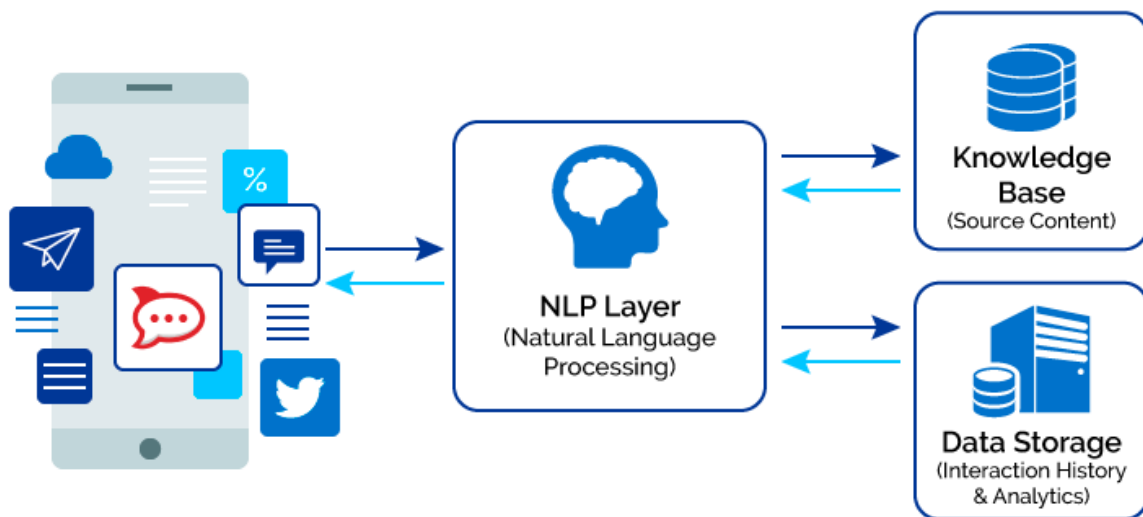
.

Figure 1. Framework for the chatbot

1. Tokenization: The NLP separates a series of words into tokens or pieces that are linguistically representative, with a different value in the application.
2. Sentiment Analysis: It will study and learn the user's experience, and transfer the inquiry to a human when necessary
3. Normalization: This program model processes the text to find out the typographical errors and common spelling mistakes that might alter the intended meaning of the user's request.
4. Named Entity Recognition: The program model of chatbot looks for different categories of words, similar to the name of the particular product, the user's address or name, whichever information is required.
5. Dependency Parsing: The Chatbot searches for the subjects, verbs, objects, common phrases and nouns in the user's text to discover related phrases that what users want to convey.

The dataset we are using are of different locations like classrooms, lab locations, etc in the JIIT Sec-62 campus. We can further extend our dataset by adding faculty details like cabin no., phone no., department, etc.

IMPLEMENTATION

Technicalities:

We have used Visual Studio Code, Python version 3.10.4. For the implementation of our code we have used the user's input and dataset containing various information such as classroom and lab locations, etc.

Libraries Used:

- Numpy:- NumPy may be used to conduct a wide range of array-based mathematical operations. It provides a vast library of high-level mathematical functions that work on these arrays and matrices, as well as powerful data structures that guarantee efficient calculations with arrays and matrices.
- NLTK:- NLTK is a Python toolbox for working with natural language processing. It supplies us with a variety of text processing libraries as well as a large number of test datasets.
- PyTorch:- Torch is a scientific computing platform, an open-source machine learning library, and a scripting language based on the Lua computer language. It leverages the scripting language LuaJIT and an underlying C implementation to deliver a wide range of deep learning techniques.
- Flask:- Flask is a web framework, it's a Python module that lets you develop web applications easily. It has a small and easy-to-extend core: it's a microframework that doesn't include an ORM (Object Relational Manager) or such features.
- Flask_Cors:- A Flask extension for handling Cross Origin Resource Sharing (CORS), making cross-origin AJAX possible. This package has a simple philosophy: when you want to enable CORS, you wish to enable it for all use cases on a domain. This means no mucking around with different allowed headers, methods, etc.

The goal of a chatbot is to increase customer-facing team efficiency while reducing the effort generated by live chat. This can be accomplished by teaching an AI-enabled chatbot to recognise patterns, understand language intent, and respond appropriately without the need for human intervention.

Working of JIITNav:

1. When the chatbot is being set up, we can teach it about various topics. First, training data is created using various information gathered about locations of different classrooms, labs and other rooms in the JIIT campus. For example, if a common query is, "Where can I find Computer Lab-3?", we can program the chatbot to understand this question and similar rephrased questions like: "Tell me the location of Computer Lab-3?" or "I want to go to CL3" or as simple as "CL3". This helps the bot address the same concern, in whichever phrasing is used by the customer, and offer the relevant information.

```json
{} intents.json > [ ] intents > {} 70 > [ ] patterns > abc 2
  1  v {
  2  v      "intents": [{
  3               "tag": "greeting",
  4  v           "patterns": [
  5                   "Hi", "Hii",
  6                   "Hey",
  7                   "How are you",
  8                   "Is anyone there?",
  9                   "Hello",
 10                   "Good day"
 11               ],
 12  v           "responses": [
 13                   "Hi there, what can I do for you? I can help you with classrooms, labs and different locations in JIIT campus.",
 14                   "Hi there, I can help you with the classrooms, labs and different locations in the JIIT campus."
 15               ]
 16           },
 17  v       {
 18               "tag": "room",
 19               "patterns": ["Classroom", "Labs", "Rooms", "I want to know classroom location"],
 20  v           "responses": [
 21                   "Enter the classroom/lab name or no."
 22               ]
 23           },
```

2. A PyTorch model is created and the dataset is trained.

```python
import torch
import torch.nn as nn
from torch.utils.data import Dataset, DataLoader

from nltk_utils import bag_of_words, tokenize, stem
from model import NeuralNet

with open('intents.json', 'r') as f:
    intents = json.load(f)

all_words = []
tags = []
xy = []
# loop through each sentence in our intents patterns
for intent in intents['intents']:
    tag = intent['tag']
    # add to tag list
    tags.append(tag)
    for pattern in intent['patterns']:
        # tokenize each word in the sentence
        w = tokenize(pattern)
        # add to our words list
```

```
Enter the classroom/lab name or no.
You: quit
(env) PS C:\Users\NIGHTKING\OneDrive\Desktop\JIITNAV> python train.py
409 patterns
108 tags: ['Advanced Communication Lab', 'Auditorium', 'BASIC ELECTRONIC LAB-1', 'BASIC ELECTRONIC LAB-2', 'Biochemistry Lab', 'Bioinformatics Lab', 'Biotech Lab-I', '
b-II', 'Biotech Lab-III ', 'Biotech Lab-IV', 'CS-1', 'CS-10', 'CS-11', 'CS-12', 'CS-2', 'CS-3', 'CS-4', 'CS-5', 'CS-6', 'CS-7', 'CS-8', 'CS-9', 'Centre for Performance
 of computing', 'Communication System Lab', 'Computer Lab-1', 'Computer Lab-2', 'Computer Lab-3', 'Computer Lab-4', 'EC Design and simulation lab', 'EXECUTIVE ROOM-1',
E ROOM-2', 'Electrical Machines Lab', 'Engineering Drawing and Design', 'Engineering workshop', 'English as Second Language Lab', 'F1', 'F10', 'F2', 'F3', 'F4', 'F5',
, 'F8', 'F9', 'FF1', 'FF2', 'FF3', 'FF4', 'FF5', 'FF6', 'FF7', 'FF8', 'FF9', 'G1', 'G10', 'G11', 'G12', 'G13', 'G2', 'G3', 'G4', 'G5', 'G6', 'G7', 'G8', 'G9', 'Informa
ity Lab', 'Internet of Things Lab', 'JBS PROJECT LAB', 'LT-1', 'LT-2', 'LT-3', 'LT-4', 'LT-5', 'Material Science and Engineering Lab', 'Multimedia Lab', 'Physics Lab-1
s Lab-2', 'Plant Tissue Culture Lab', 'Signal Processing Lab', 'T&P Cell', 'TS-1', 'TS-10', 'TS-11', 'TS-12', 'TS-13', 'TS-14', 'TS-15', 'TS-16', 'TS-17', 'TS-18', 'TS
2', 'TS-20', 'TS-3', 'TS-4', 'TS-5', 'TS-6', 'TS-7', 'TS-8', 'TS-9', 'VLSI Design Lab', 'VLSI Design and Simulation lab', 'goodbye', 'greeting', 'room', 'thanks']
232 unique stemmed words: ['&', "'s", 'a', 'acl', 'advanc', 'and', 'anyon', 'are', 'as', 'auditorium', 'basic', 'bcl', 'bel1', 'bel2', 'biochemistri', 'bioinfo', 'bioi
'biotech', 'bt1', 'bt2', 'bt3', 'bt4', 'bye', 'can', 'cell', 'cl-4', 'cl1', 'cl2', 'cl3', 'cl4', 'classroom', 'cml', 'commun', 'comput', 'cpmc', 'cs-1', 'cs-10', 'cs-1
', 'cs-2', 'cs-3', 'cs-4', 'cs-5', 'cs-6', 'cs-7', 'cs-8', 'cs-9', 'cs1', 'cs10', 'cs11', 'cs12', 'cs2', 'cs3', 'cs4', 'cs5', 'cs6', 'cs7', 'cs8', 'cs9', 'cultur', 'da
n', 'draw', 'ec', 'edd', 'electr', 'electron', 'eml', 'engin', 'english', 'esl', 'ew', 'execut', 'f1', 'f10', 'f2', 'f3', 'f4', 'f5', 'f6', 'f7', 'f8', 'f9', 'ff1', 'f
, 'ff4', 'ff5', 'ff6', 'ff7', 'ff8', 'ff9', 'find', 'g1', 'g10', 'g11', 'g12', 'g13', 'g2', 'g3', 'g4', 'g5', 'g6', 'g7', 'g8', 'g9', 'go', 'good', 'goodby', 'hello',
ey', 'hi', 'hii', 'how', 'i', 'in', 'inform', 'internet', 'iot', 'is', 'jb', 'jbspl', 'know', 'lab', 'lab-1', 'lab-2', 'lab-3', 'lab-4', 'lab-i', 'lab-ii', 'lab-iii',
'languag', 'later', 'locat', 'lot', 'lt-1', 'lt-2', 'lt-3', 'lt-4', 'lt-5', 'lt1', 'lt2', 'lt3', 'lt4', 'lt5', 'machin', 'materi', 'me', 'mml', 'msel', 'multimedia',
'pgl1', 'pgl2', 'physic', 'pl1', 'pl2', 'plant', 'process', 'project', 'ptcl', 'room', 'room-1', 'room-2', 'room1', 'room2', 'scienc', 'second', 'secur', 'see', 'signa
, 'ts-19', 'ts-2', 'ts-20', 'ts-3', 'ts-4', 'ts-5', 'ts-6', 'ts-7', 'ts-8', 'ts-9', 'ts1', 'ts10', 'ts11', 'ts12', 'ts13', 'ts14', 'ts15', 'ts16', 'ts17', 'ts18', 'ts1
'ts20', 'ts3', 'ts4', 'ts5', 'ts6', 'ts7', 'ts8', 'ts9', 'vhdl', 'vlsi', 'want', 'where', 'workshop', 'you']
232 108
Epoch [100/1000], Loss: 0.0109
Epoch [200/1000], Loss: 0.0010
Epoch [300/1000], Loss: 0.0021
Epoch [400/1000], Loss: 0.0000
Epoch [500/1000], Loss: 0.0000
Epoch [700/1000], Loss: 0.0000
```

3. The chatbot learns from chats and your knowledge base to understand intent every time a visitor asks a question. From the example above, if the visitor asks, "Where is LT-3?" the chatbot will recognize the intent, based on the information available in its database, and provide the appropriate response.

4. Once the chatbot knows what the customer's goal is, it'll prompt them into taking the next step. If the previous response of the visitor was "I want to know about Labs." then the chatbot will reply with "Enter the Classroom/Lab name or no.".

5. User Input: For taking input from various users, a web application named "**JIITNav**" using html, css and javascript has been created which appears as a pop-up chat window when clicked.
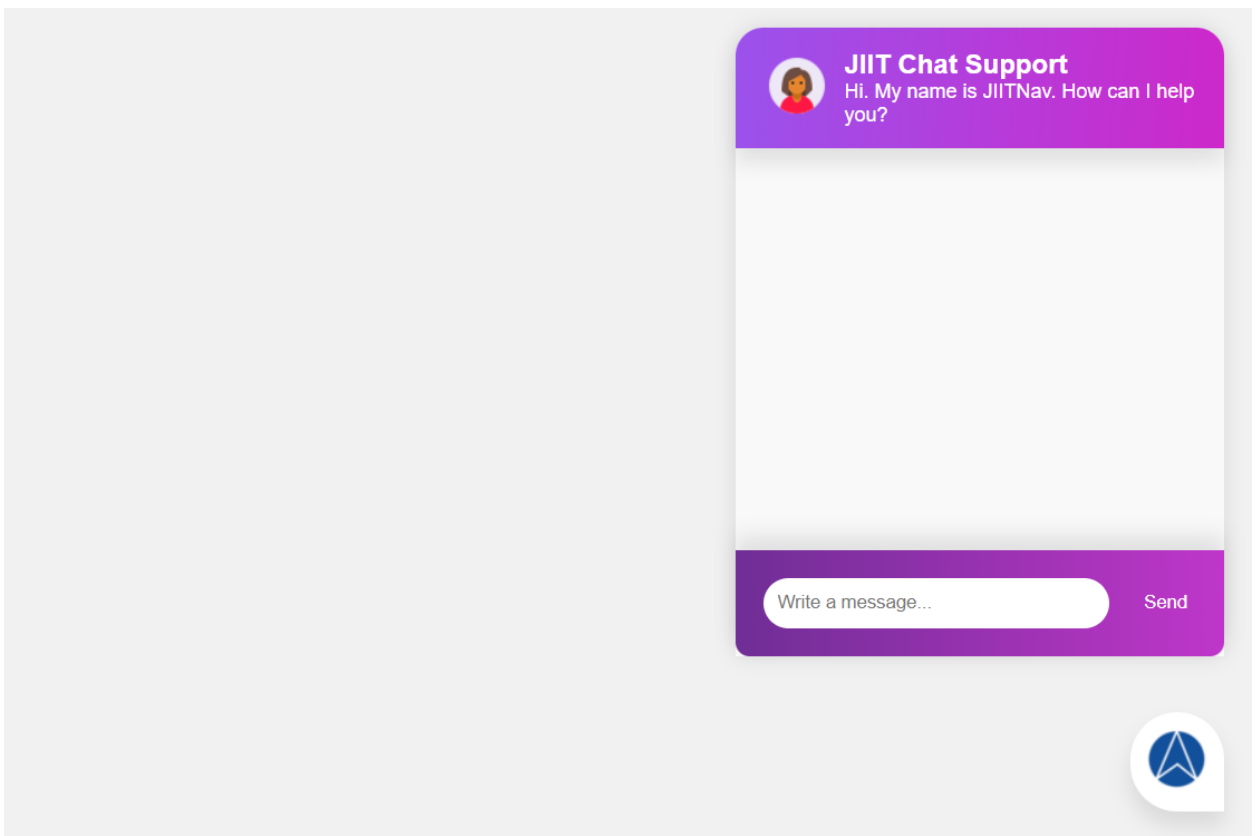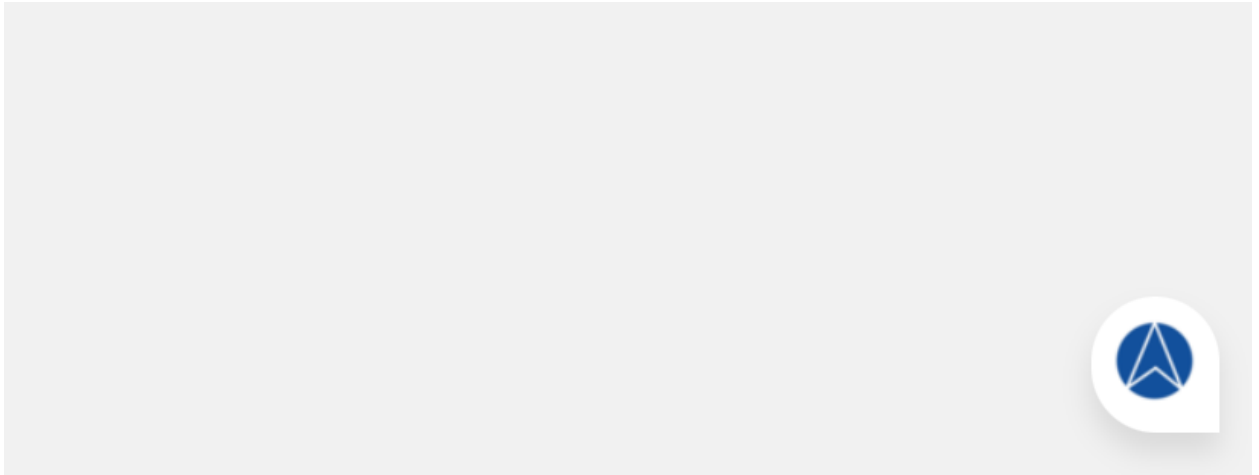
## RESULTS

We have two methods to run the project:

- It can be deployed using Flask within the template or,
- We can deploy it separately without the template using the cross origin resource sharing with the help of Flask_Cors.

Here, we have used the Flask_Cors library to deploy the chatbot:

- On clicking the chat button a pop-up window will appear with the name JIIT chat support.
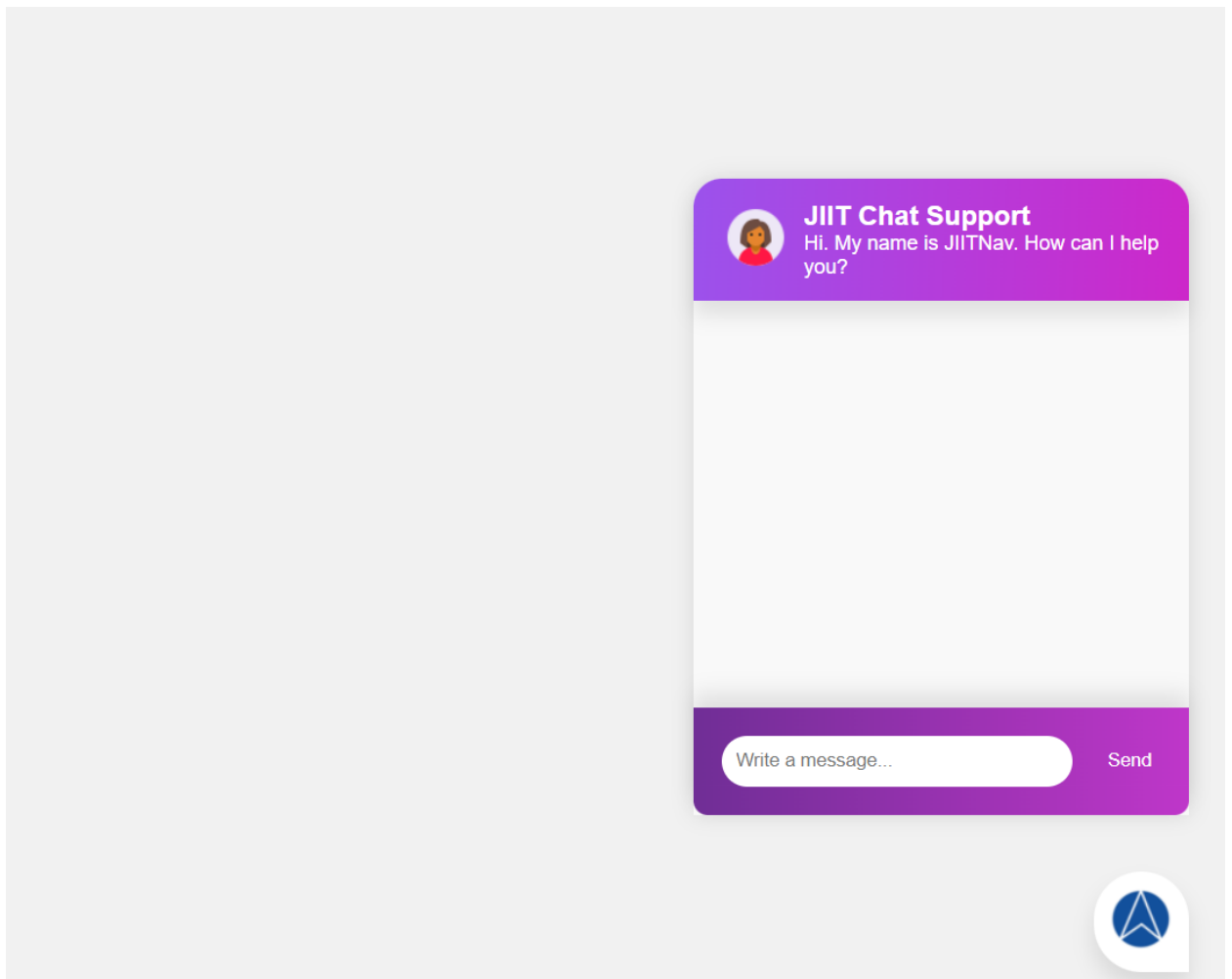
- We can start by writing a greeting message, For example: "Hii". Then the chatbot will automatically respond with a greeting message.
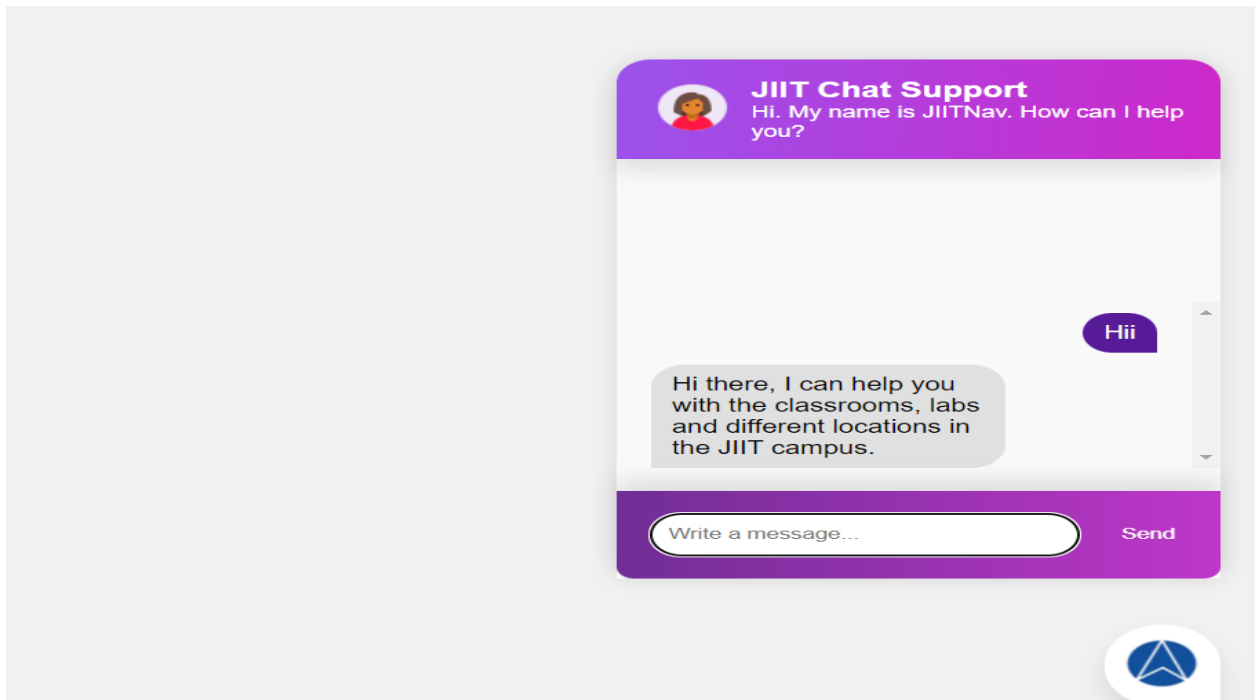

- Suppose the user wants to know about the location of a classroom. Then the chatbot will give the following response:
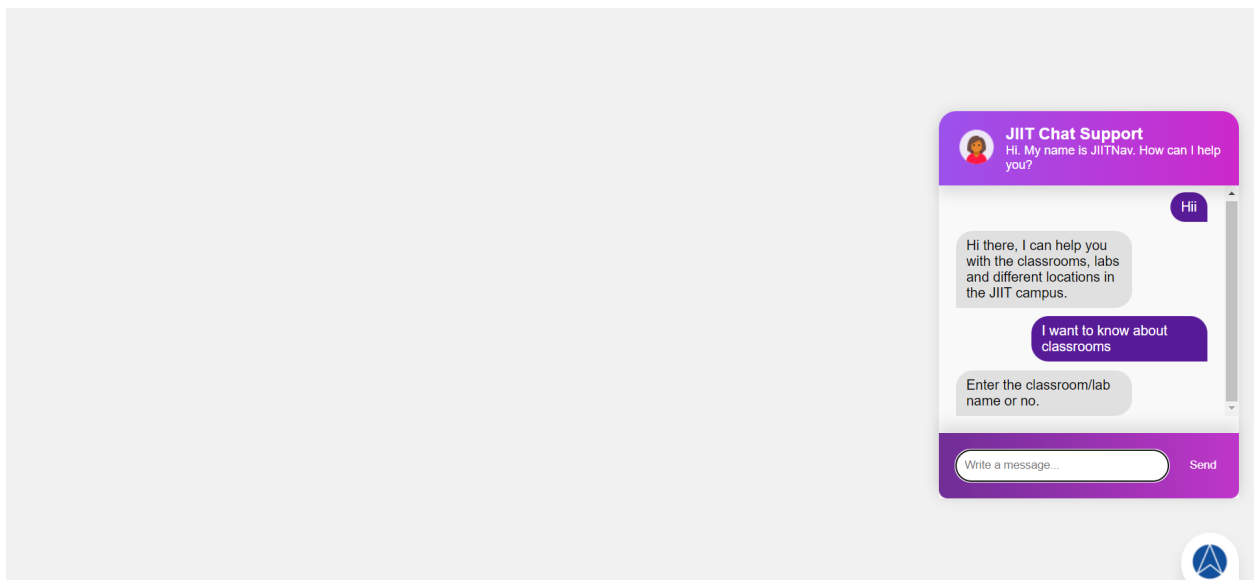
- Now the user will enter a classroom name, say "G3". The chatbot will automatically respond with the location of the desired classroom.
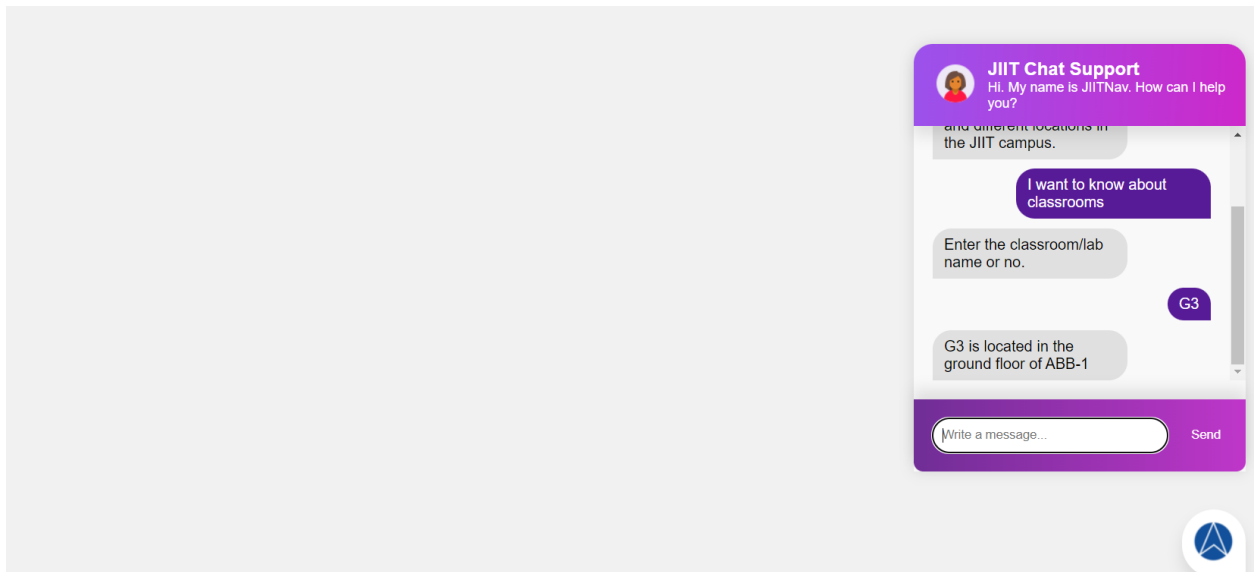
- The chatbot is designed and trained in such a way that it takes input from the user in any form whether it is in uppercase or lowercase or it can be the same question asked in a different form and it will detect the intent of the question and reply with the appropriate response.
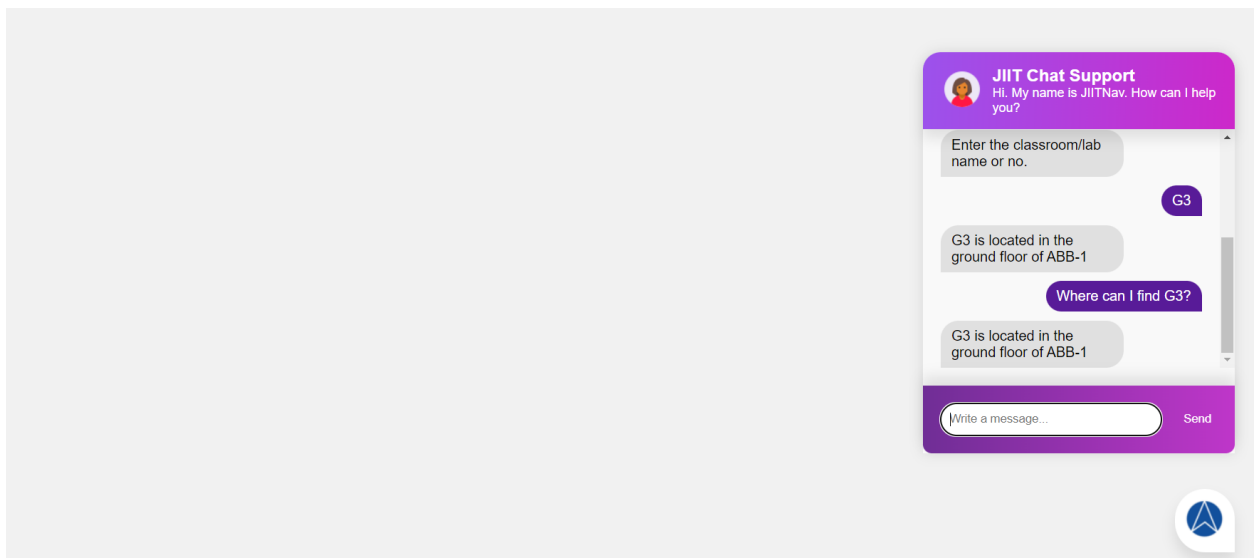
LIMITATIONS

Understanding the flaws of chatbots is critical because they are directly tied to businesses. Users and company owners have expressed dissatisfaction with a number of constraints. Furthermore, the limits of chatbots have deterred a number of companies from incorporating them into their apps and websites.

1. Chatbots Don't Understand Human Context.

One of the major drawbacks of chatbots is this. These chatbots have been trained to only know what they have been taught. They are unable to comprehend human context, which is a significant gap that can result in an irate customer.

Although AI-powered smart-bots can comprehend the broad context, 40 out of 100 incidents are unrelated to it.

2. They Don't Do Customer Retention.

Customer retention is critical to any company's success. It's more essential than getting new customers. A chatbot is far less capable of keeping customers because it just tries to the amount that it has been programmed to.

Because they can empathize with their consumers' feelings, human CEOs have been demonstrated to be better at client retention than chatbots.

3. They Can't Make Decisions.

Another disadvantage of chatbots is that they are incapable of making decisions. They lack the necessary expertise to distinguish between the excellent and the bad. Microsoft's chatbot Tay sparked a lot of controversy on March 23, 2016, when it was released. Microsoft was in big trouble after the chatbot sent out obscene Tweets. As a result, the chatbot will be temporarily disabled.

Chatbots, on the other hand, have caused a lot of damage to a number of brands due to their poor decision-making abilities.

4. They Have Zero Research Skills

Chatbots have no research skills, which is a sad fact. These bots can only answer existing queries; they can't look up new topics on the internet.

A chatbot's memorizing power is also greatly reduced; they cannot remember anything unless they are constantly given fresh samples and trained, which is both costly and time-consuming.

5. Chatbots Have No Emotions

Finally, chatbots lack emotions and are unable to relate to any negative scenario. A chatbot with no emotions will never be able to form a connection with a consumer, which is critical for any business's growth.

Without sentiment analysis information, chatbots will interact with customers in a specific way, regardless of the chat flow. As a result, some customers would rather end the conversation!

CONCLUSION

With improved communication and the ability to offer colleges major financial savings, chatbots may soon be the future of how universities communicate with students. Using the artificially intelligent Chatbot, it will serve aspiring students with the instant answers to their queries related to various details about classrooms, administration and faculties. Continuously training the bot with more questions can help to make the bot reply efficiently.

.FUTURE WORK

In this Project, we have implemented Short-Text Conversations where the goal is to create a single response to a single input. By applying advanced Machine-Learning Techniques, like the Generative model, the Chatbot will become smarter and it can plausibly engage the user in certain conversations. This technique has a feedback loop which helps the bot to learn new things when engaging with the user. We can expand our data with information like faculty details (cabin no., department name, phone no., etc) which will be of great help to various users.

Businesses, employees, and consumers are likely to benefit from enhanced chatbot features such as faster recommendations and predictions, as well as easy access to high-definition video conferencing from within a conversation, in the near future, when AI is combined with the development of 5G technology. These and other possibilities are still being researched, and they will evolve swiftly as internet connectivity, AI, NLP, and machine learning progress. Every person will eventually have a fully capable personal assistant in their pocket, making our world more efficient and connected to live and work in.

REFERENCES

- "Natural Language Processing - Overview," *GeeksforGeeks*, Jul. 14, 2021. https://www.geeksforgeeks.org/natural-language-processing-overview/ (accessed Dec. 10, 2021).

- Lokman, A. S., & Ameedeen, M. A. (2018, November). Modern chatbot systems: A technical review. In *Proceedings of the future technologies conference* (pp. 1012-1023). Springer, Cham.

- "Chat Bot in Python with ChatterBot Module"

  https://www.geeksforgeeks.org/chat-bot-in-python-with-chatterbot-module/

- Chowdhary, KR1442. "Natural language processing." *Fundamentals of artificial intelligence* (2020): 603-649.

- Chowdhary, KR1442. "Natural language processing." *Fundamentals of artificial intelligence* (2020): 603-649.

- "What is a chatbot?

  "https://www.freshworks.com/live-chat-software/chatbots/what-is-a-chatbot/