# Under graduate

# Raspberry pi based Project

# Query Bot

**Under Guidance of:**
**Dr. Arun Kumar Sinha**
**(Associate Professor)**
**School of Electronics Engineering**
**VITAP, University**



**Team Members (Semester-III, 2019):**

1. 18BCD7009 - Rishabh Singh Bais
2. 18BCN7057 - Paduchuru Abhishek
3. 18BCE7091 - Pulkit Joshi
4. 18BCE7116 - Rakesh Ranjan
5. 18MIS7152 - Kota V. V. L  Naga Datta Manoj
6. 18BCE7280 - Pooly Vinay Kumar Reddy

# CONTENTS

# 1. INTRODUCTION

Today, Alexa lets us control our lights with voice, Google assistant suggests places we would want to go when we are discussing dinner plans with our friends and Tesla can drive for us.Siri and Cortana live inside our phones and take commands. Screen less conversations are expected to dominate. Today, due to the penetration of social media and internet along with the progress in artificial intelligence, not only are bots coming up as a way to reach out to the users but also, they are making way for conversational interfaces such as Alexa to be omnipresent and go screen-less. In the case of chat bots, with the launch of messenger bots and platforms such as slack, bots have gotten a boost. Facebook bots have grown from 34000 bots in November 2016 to 100,000 bots in April 2017 . As social media widens its penetration, companies will shift their focus to bots for reaching and serving users [3].

# MOTIVATION

We sometimes need professors help for various projects, assignments or any academic related help. But there are many professors and we don't know at what time they are available, what is their cabin no. So making a query bot is indeed an interesting idea as we can save students time also. We also have thought of integrating it with chat bot features.

# 2. LITERATURE REVIEW

The ones that are rule based or fetch responses from a predetermined set of responses.Retrieval Based models can be used when the data is limited and the conversation domain is constricted to a few conversation scenarios. Hence, if all the possible conversations for a use case with the bot are imaginable, a retrieval based model works well. Also, when the bot is not expected to display intelligence in all scenarios but can afford to deny knowing the answer, such retrieval based models work well. Booking systems, FAQ systems or any other systems that fetch information could work well even with a retrieval based bot [2] .

# 3. COMPONENTS REQUIRED

1. Raspberry pi
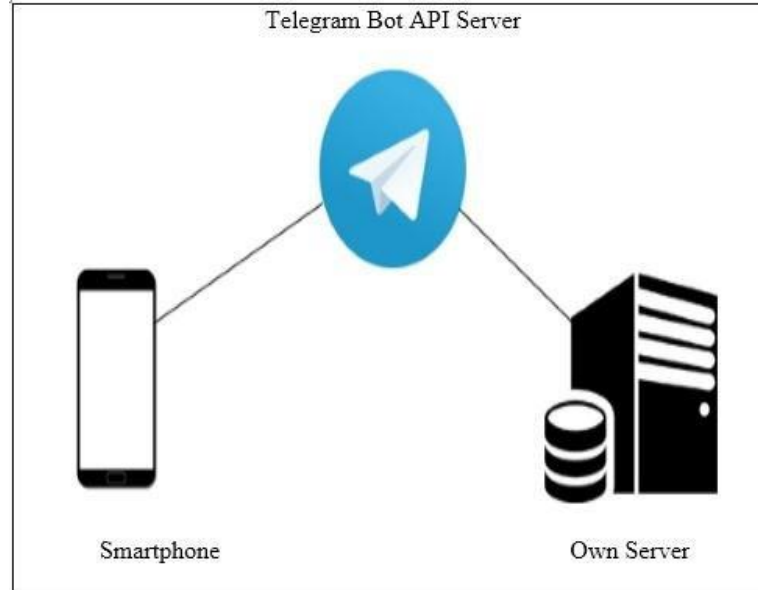
2. Android Device

# 4. TELEGRAM BOT ARCHITECTURE



Figure 1: Telegrambot architecture [2]

# 5. SOFTWARE AND HARDWARE

## 5.1 Hardware:

Raspberry Pi: The raspberry pi is a low cost, credit-card sized computer that plugs into a computer monitor or TV, and uses a standard keyboard and mouse. It is a capable little device that enables people of all ages to explore computing, and to learn how to program in languages like Scratch and Python [2].

## 5.2 Software:

Python: Python is a multi-paradigm programming language. Object-oriented programming and structured programming are fully supported, and many of its features support functional programming and aspect-oriented programming. Many other paradigms are supported via extensions, including design by contract and logic programming. Python uses dynamic typing, and a combination of reference counting and a cycle-detecting garbage collector for memory management [1].

# 6. CONSTRUCTION AND TESTING

**6.1 Assembly Instructions**

Collecting the faculty information.

Integrating the weather API with Telegram bot code.

Reading news headlines using python web scrapping.

Integrating Wikipedia library with bot.

Uploading the code in raspberry pi using python programming language.

Uploading faculty information in Telegram bot.

## 6.2 Testing

Testing and debugging the code.

Integrating with Telegram bot.

Testing bot in Telegram bot.

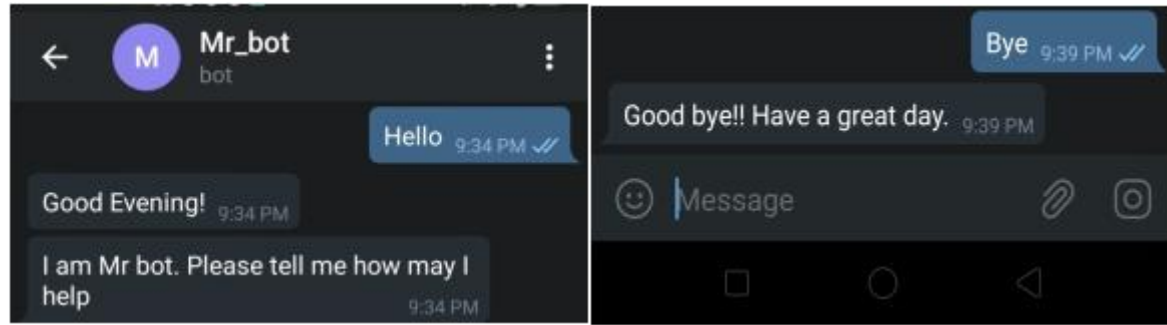Testing bot for various queries.

Bot is ready to use.
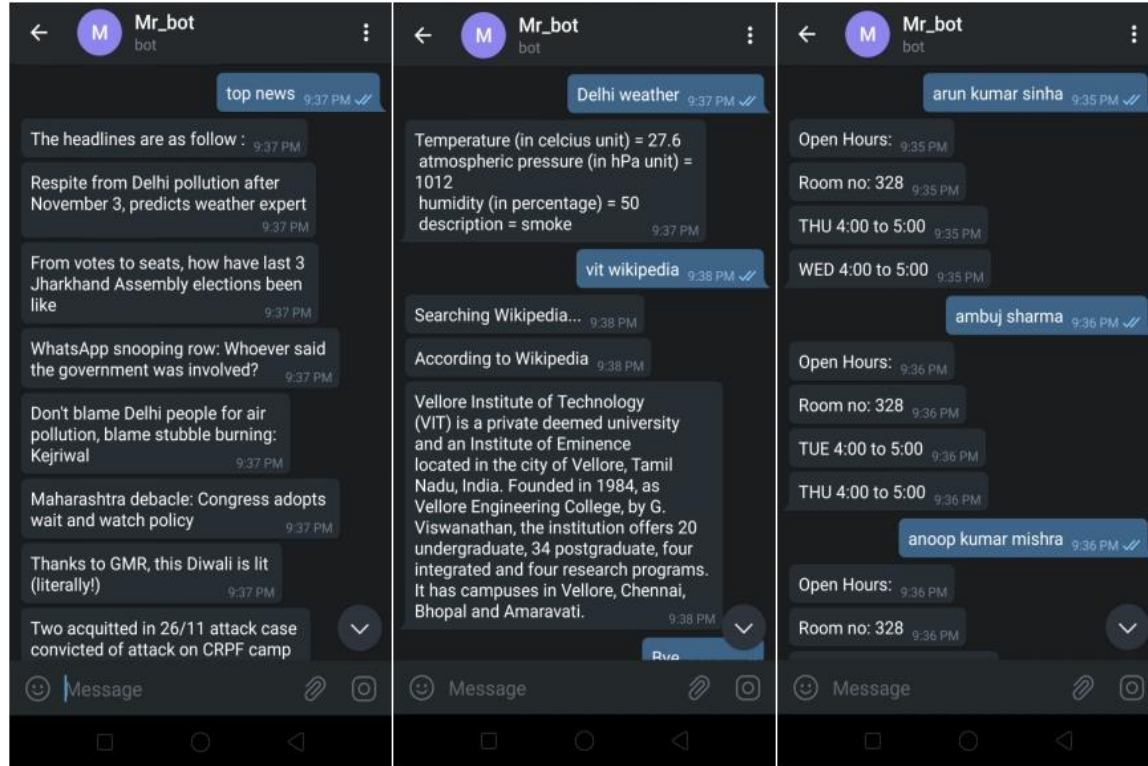
# 7. RESULTS



Figure 2: General reply

Figure 3: Top headlines, weather Wikipedia search queries & faculty details

# 8. WORK PLAN

| Timeline (Week) | 5th Aug | 14th Aug | 5th Sep | 10th Sep | 11th Sep. | 2nd Oct | 12th Oct | 27th Oct | 5th Nov | 18th Nov |
|---|---|---|---|---|---|---|---|---|---|---|
| Delivery | | | | | | | | | | ■ |
| Overall Outcome | | | | | | | | | ■ | |
| Testing | | | | | | | ■ | ■ | | |
| Connections | | | | | | | ■ | | | |
| Coding | | | | | ■ | ■ | ■ | | | |
| Hardware analysis | | | | ■ | ■ | | | | | |
| Problem identify | | ■ | ■ | | | | | | | |
| Literature survey | ■ | ■ | | | | | | | | |

# 9. REFERENCES

[1]Available online: https://www.hackster.io/Salmanfarisvp/telegram-bot-with-raspberry-pi-f373da

[2]Available online: https://create.arduino.cc/projecthub/ShebinJoseJacob/telegram-bot-with-esp8266-dbada8

[3]Available online: https://www.instructables.com/id/Make-a-Python-Powered-ChatBot-Raspberry-Pi/

[4]Available online: http://kamilslab.com/2018/09/15/how-to-create-a-simple-python-chatbot-on-the-raspberry-pi/

[5]Available online: https://www.raspberrypi.org/

[6]Available online: https://en.wikipedia.org/wiki/Raspberry_Pi

[7]Book: Raspberry Pi For Dummies by Mike Cook and Sean McManus

[8]Book : Getting Started with Raspberry Pi: Electronic Projects with Python, Scratch, and Linux by Matt Richardson and