HOTEL CHATBOT

Submitted By :

Rishab Banthia
18BCN7076

Guided by:

Prof Sudhakar Ilango
Dept. of CSE

Summary of the project

From time to time humans are trying to discover more ways to make life simple using technology and chatbots are example for this. Chatbots are also soon becoming a part of our daily life.

Chatbots would take care of almost everything that you want to do. For Example: Hotel Management, Telegram, WhatsApp...etc. Now we are constructing a Hotel ChatBot.

This will help the hotels create good customer reviews, increase in number of customers, better service, assure time management and cost reduction. The management gains profit due to this chatbot.

The part of the design of the chatbot has been implemented on the raspberry pi using Python language and we enabled different features in it, to give better experience for the customers

The algorithms have been made for booking rooms, giving weather information, taking food order, booking taxi, giving information about tourist places and also for selecting the package for tourist places and the other features like music, check out, etc. The testing has been done and the output is positive. And we try to add some more feature which enhances our objectives .So,we are looking forward to do it

We can build this product in a large scale under good technicians and engineers so that it will work in a more improved and efficient way.

Index :

Content

Introduction

A **chatbot** is a computer program or an artificial intelligence which conducts a conversation via auditory or textual methods. It is powered by machine learning. The services that a chatbot can deliver are diverse.

The chatbot can talk to you through different channels. Nowadays people use messaging apps than the social media so as a alternative the chatbot or the messaging chatbot can be used as an update to the present generation for a conversation.

This Raspberry Pi kit can be used as a prototype for making different models of the product before making the real product. This kit is used by thousands of students for implementing their ideas and making prototypes for their desired model.

Our project uses the Raspberry Pi kit which will be used for making a prototype of a chatbot which will be used in the main aim of our project that is to book room in hotel and also book tourist places, taxi service etc.

Our project hotel chatbot will be a revolutionary idea which will change the aspect of hotel industry extremely

Our product improves the customer experience and reduces the cost for the customer service which indeed is also a profit for the hotel and the customer

Background

Competition in the hospitality niche is ever increasing and to stay ahead of the curve all the hoteliers are devising some strategies and working on it to execute it properly.

It will help in increase of their hotel bookings and revenue.

One surefire way to achieve this is- chatbots. The idea of the hotel chatbot was implemented for the benefit of the customer and also for the hotel.

This model of chatbot is currently in use in abroad in some 7-star hotels. They have developed the model completely and using it in a profitable manner.

In India, this model is now under testing mode. After some 5 years it will be used in India in a large scale.

Problem Definition

In our daily life we can observe that the technology is evolving continuously in order to overcome the difficulties . In the case of hotels , the difficulties we are experiencing are heavy expenses and less satisfaction to the customers .

To resolve this we need a technical bot to enhance the verbal communication to satisfy the customers and reduce the expenses of the hotel. Hotel chatbot seems to be a good solution for this difficulty because the chatbot not only satisfies the customers with a new experience but also reduces the expenses to some extent.

Apart from resolving the difficulties it makes the hotel work simple by maintaining the information of expense and giving some extra time to the hotel staff to fulfill the requirements of the customers more effectively and accurately.

Our project uses the Raspberry Pi kit which will be used for making a prototype of a chatbot which will be used in the main aim of our project that is to book room in hotel and also book tourist places, taxi service etc. With this it can also do normal conversations, can play music, and give weather information of the city, take food order for the customer.

Therefore, the hotel chatbot helps us to overcome the problems of heavy expenses and customer satisfaction.

Objective

The main objectives of our project 'Hotel Chatbot' are time management, guest services and cost reduction and the bots can also assist guests with elementary questions and requests.

As the hotel chatbot is effective in convincing as receptionist, So the hotel staff will get the enough time in arranging the required things to the customer

The quality of service to the customers can be increased by using the hotel chatbot as it gives an enthusiastic feeling to the customer

By using the hotel chatbot we can also reduce the expenses of the hotel by replacing a human being with chatbot and can reduce customer service cost to 30%

Thus enriching pre-arrival experience and on-resort experience gives the customer a best experience with the hotel

This helps the hotel staff to spend more of their time attention to time sensitive, critical and complicated tasks.

So, the chatbots boosts the profits of hotel as it provides better experience to customers and increase the count of them .Moreover, it helps in cost reduction. these are our main objectives to encounter this project

Methodology

Our hotel chatbot includes the features like weather , music , booking room , booking taxis for tourism and personal use.

The weather feature is added using the OpenWeather API which gives the information of temperature and climatic conditions.

The booking of a room is done in the predefined way which is commanded to book rooms. In this process of booking a room the information required for booking a room is asked and saved. The rooms can also be canceled.

Our another main feature is booking a tourism ride which has some packages where the customer can choose the package and book tour for themselves Where the taxi and the tourist ride is provided from the hotel. This is also predefined function and information about the tourist places is already mentioned in the program.

Another important feature is booking taxi within the city where the taxi is provided by the hotel and in the program this feature is called by a function . Booking a taxi asks for the required information like the place to reach, the time at which the taxi must be reported.

All these features are executed when the customer types the hot keys for these features.

Results and Discussion

Firstly, the bot will ask the customer his personal details like name, phone number, along with details of the room type they want.

After booking the room the bot will send a message to the customer's provided phone number about the room they booked to verify that the given number by the customer is correct or not.

The bot can also take food order from the customer and also send message to the customer about the order.

It can also give information to customer about the best tourist places in the city and also it will ask them if they want to book some package to visit the places.

There are two Packages each having five best places of the city. Also in the package all the time duration are provided along with the cost per person.

The customer need not to be worry about the taxi also as it can book taxi. They can book for return also. The customer will be notified about the booking by message.

With all these, it can also do general conversation like playing music, weather information, date and time, providing the hotel information etc.

Conclusion and Future Scope

Check Aadhar Card number.

Making the bot more friendly with the verbal communication.

To talk with customers using a translator from search engine which would be more effective with the customers.

Assisting some more duties to bot like taking a laundry order and giving complete information about hotel to the customer.

References

https://docs.python.org/3/ (Python 3 documentation)
https://pypi.org/ (for packages)
https://www.reachaccountant.com/erp-software-pos-software-blog/brief-introduction-chatbots/

Codes in Appendix

_____

```
import datetime
import requests
import random
import os
from time import sleep
import time
from pygame import mixer
from gtts import gTTS    # Google TTS
import pyautogui as pgui
from sys import path


"""

# All functions defined here
"""


# Responses
def resp(msg):
    if msg in hlo:
        outp(wish())
    elif msg in hru:
        outp("I am fine. Thank you. What about you?")
    elif msg == "fine" or msg == "good" or msg == "well" or msg == 'no':
        outp("Okay.")
    elif "kill" in msg or "destroy" in msg:
        outp("I don't want to kill.")
    elif 'room' in msg and ('book' in msg or 'register' in msg):  # Booking
        book_room()
```

```python
        elif ('avail' in msg or 'free' in msg) and 'room' in msg:
            num = len(available_rooms)
            if num == 0:
                num = "Sorry. No"
            outp(str(num)+" rooms are available.")
        elif msg == "check-out" or msg == "check out" or msg == "Leave room":
            check_out()                        # Leaving
        elif "emergency" in msg or 'police' in msg or 'ambulance' in msg:
            outp("Calling human.")
            call_human('emergency')
        elif 'call' in msg or 'human' in msg or 'help' in msg:
            outp('Please enter your room number.')
            rr_no = inp('Room')
            call_human('Help '+rr_no)
        elif 'food' in msg:
            outp('Please tell your room number.')
            r_numb = inp('Room')
            outp('Which food do you want and how many?')
            fd = inp('Food')
            outp('Sending '+fd)
            call_human('Food'+fd+' to room'+r_numb)
        elif 'taxi' in msg and 'book' in msg or 'organi' in msg or 'cab' in msg:
            taxi_book()
        elif 'sleep' in msg:
            outp("Sleeping for 10 seconds...")
            sleep(10)
            outp('Done.')
        elif msg in ext:
            outp("Bye. See you soon.")
```

```python
    elif 'thank' in msg or 'thanks' in msg:

        outp("You are welcome.")

    elif "weather" in msg or 'temperature' in msg or 'rain' in msg or 'climate' in msg:

        outp(get_wthr())

    elif "joke" in msg:

        outp("What is the biggest lie in the entire universe? I have read and agree to the Terms
& Conditions.")

    elif msg == 'lol' or msg == 'haha':

        outp('I am glad that you found it funny.')

    elif 'tour' in msg or 'place' in msg or 'travel' in msg:

        tourist_places()

    elif 'time' in msg:

        outp(time_now())

    elif 'date' in msg:

        date = date_now()

        outp(date)

    elif "book" in msg:

        outp('Please tell me what you want to book. Is it room or taxi or other?')

    elif msg == "" or msg == ' ':

        outp("Please enter a message.")

    elif msg == "shutdown":

        outp("Shutting down...")

        os.system('shutdown now')

    elif msg == "restart" or msg == "reboot":

        outp("Restarting...")

        os.system('shutdown --reboot now')

    elif msg == "info" or msg == "hotel info" or msg == "hotel information":

        with open(my_path+"/info.txt", 'r') as file:

            outp(file.read())
```

```python
        elif "music" in msg or 'song' in msg:
            fil_nam = random.choice(os.listdir(my_path+"/songs/"))
            if vo_work:
                outp("Playing music...")
                mixer.music.load(my_path+'/songs/'+fil_nam)
                mixer.music.play()
            else:
                print('Error playing music.')
        elif 'translate' in msg:
            translate()
        elif 'ok' in msg or 'okay' in msg:
            outp("Okay then.")
        elif "what can you" in msg:
            with open(my_path+"/what_can_do.txt", 'r') as file0:
                outp(file0.read())
        elif 'password' in msg or 'wifi' in msg or 'wi-fi' in msg:
            outp("Wi-Fi password is hotel123. I repeat hotel123.")
        elif 'stop' in msg:
            if vo_work:
                mixer.music.stop()
            else:
                print('Unable to stop.')
        elif 'problem' in msg:
            outp('Please enter the problem.')
            prob = str(inp('Problem'))
            call_human('Problem'+prob)
            add_data = open(my_path+"/feedback.txt", 'a')
            add_data.write("\n"+prob)        # Feedback
            add_data.close()
```

```python
    elif 'clean' in msg:
        outp('Do you want us to clean the room?')
        ab = inp('Yes/No')
        if 'y' in ab:
            outp('Please enter room number.')
            rnu = inp('Room')
            call_human('Clean room'+rnu)
        elif 'n' in ab:
            outp('It is okay.')
    elif 'feedback' in msg:
        outp("Please give feedback now.")
        txt = inp('Feedback')
        add_data = open(my_path+"/feedback.txt", 'a')
        add_data.write("\n"+txt)    # Feedback
        add_data.close()
        outp("Thank you for your valuable feedback.")
    elif 'extra' in msg:
        outp('Please enter what you need extra')
        need = inp('Extra')
        outp('Please enter your room number.')
        rnu = inp('Room')
        outp('Sending Extra '+need+' to Room'+str(rnu))
        call_human('Extra : '+need+' Room : '+str(rnu))
    elif 'wake' in msg:
        outp("Do you want a wakeup call?")
        response = inp("Yes/No")
        if 'y' in response:
            outp("Please enter your room number.")
            rn = inp("Room")
```

```python
                    outp("Enter at what time you want.")

                    tm = inp("Time")

                    call_human("Wakeup call : "+rn+" "+tm)

            else:

                    outp("Okay.")

        elif 'search' in msg:

                outp("Please enter what you want to search for.")

                sea = inp("Search")

                url = "google.com/search?q="+sea

                pgui.click(69, 19)  # click on browser

                sleep(13)

                pgui.hotkey('ctrl', 't')

                pgui.typewrite(url)

                pgui.press('enter')

                outp("Calling human.")

        elif msg == "err":

                outp("I can't hear that.")

        else:

                outp("Sorry. Please repeat.")

                add_data = open(my_path+"/newdata.txt", 'a')

                add_data.write("\n")

                add_data.write(msg)

                add_data.close()




    # main method starts here

    print("----------------------------------------")
```

```python
if vo_work:
    mixer.music.load(my_path+'/short.mp3')      # a short music
    mixer.music.play()


def main():
    while True:
        mesg = inp("You").lower()
        if mesg == "q" or mesg == "close" or mesg == "quit" or mesg == 'exit':
            break
        resp(mesg)


main()


# program ends here
```