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EXPERIMENT 1
(Intelligent Agent)

Aim : To implement an Intelligent Agent

Theory :
An **intelligent agent** is a program that can make decisions or perform a service based on its environment, user input and experiences. These programs can be used to autonomously gather information on a regular, programmed schedule or when prompted by the user in real time.

PEAS stands for Performance measure, Environment, Actuator, Sensor.

1. **Performance Measure:** Performance measure is the unit to define the success of an agent.Performance varies with agents based on their different precept.
2. **Environment**: Environment is the surrounding of an agent at every instant. It keeps changing with time if the agent is set in motion.There are 5 major types of environments:
    - Fully Observable & Partially Observable
    - Episodic & Sequential
    - Static & Dynamic
    - Discrete & Continuous
    - Deterministic & Stochastic
3. **Actuator**: Actuator is a part of the agent that delivers the output of an action to the environment.
4. **Sensor**: Sensors are the receptive parts of an agent which takes in the input for the agent.

PEAS:

- **Agent -** Voice Assistant (Alexa)
- **Performance measure -** Sending messages on whatsApp, playing songs and videos on youtube, searching on google, gathering information from wikipedia
- **Environment -** Laptop, computer, web browser
- **Actuators -** Screen, speaker
- **Sensors -** Microphone

Code :

```
import speech_recognition as speech
import pyttsx3
import pywhatkit
import datetime
import wikipedia
import pyjokes
from time import sleep
from pyautogui import click
from keyboard import write
from alright import WhatsApp

listener = speech.Recognizer()
engine = pyttsx3.init()
voices = engine.getProperty('voices')
engine.setProperty('voice', voices[1].id)


def speak(text):
    engine.say(text)
    engine.runAndWait()


def take_command():
    try:
        with speech.Microphone() as source:
            print('listening...')
            voice = listener.listen(source)
```

```
            command = listener.recognize_google(voice)
            command = command.lower()
            if 'alexa' in command:
                command = command.replace('alexa', '')
                print(command)
            else:
                command = 'no command'
    finally:
        return command


def run_code():
    command = take_command()
    if 'play' in command:
        song = command.replace('play', '')
        speak('playing ' + song + ' on youtube')
        pywhatkit.playonyt(song)
    elif 'time' in command:
        time = datetime.datetime.now().strftime('%I:%M %p')
        speak('Current time is ' + time)
    elif 'search' in command:
        search = command.replace('search ', '')
        pywhatkit.search(search)
    elif 'send message to' in command:
        mssg = command.replace('send message to ', '')
        send_message(mssg)
    elif 'who is' in command:
        person = command.replace('who is', '')
        info = wikipedia.summary(person, 2)
        print(info)
        speak('Here\'s what i found on wikipedia '+info)
    elif 'joke' in command:
        speak(pyjokes.get_joke())
    else:
        speak('Please say the command again.')


def send_message(name):
    messenger = WhatsApp()
    messenger.find_by_username(name)
```

```
    speak('ok please tell me the message you want to send')
    try:
        with speech.Microphone() as source:
            print('listening...')
            voice = listener.listen(source)
            command = listener.recognize_google(voice)
            command = command.lower()
    except:
        pass
    print(command)
    click(x=842, y=964)
    sleep(1)
    write(command)
    sleep(0.5)
    click(x=1790, y=968)
    speak('message sent to ' + name)
    return


speak('Hii vatsa I am alexa, your voice assistant, how can i help you?')
while True:
    run_code()
```

Conclusion :

I got to know about Intelligent agents, how they work, etc.I successfully implemented an Intelligent agent i.e. a voice assistant using python.