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Receptionist Robot with Google Assistant

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ABSTRACT: This project is based upon building the Robot with some special features. It is used to communicate with people according to the person's command. Basically we use a raspberry pi 3 model to configure the commands by interfacing the Google search engine with the raspberry pi 3. When the search engine is connected to the raspberry pi 3, the robot can easily reply to user commands. The motor rotation part of the robot is designed using the Arduino board. We connect two motors, PIR sensors and 3 sound sensors for receiving the data. one motor is used to control the neck of the robot and second motor is been used to control the hip of the robot. The 3 different sound sensors are been placed in the shoulder of the robot which is used to sense where the sound is been produced. According to that, the robot will rotate the neck. The PIR sensor is placed in the centre of the neck, so it can sense the human presence. After all the process has been done .the robot will respond to human commands with the help of the Google search engine with Internet.

KEYWORDS: Arduino UNO, Raspberry pi, Gear motor, PIR Sensor, etc....

I. INTRODUCTION

Raspberry pi and Arduino is interfaced to control and process the work of robot and C.Nagarajan *et al.*[2,4,9] proposed the manual work of a receptionist is replaced by the humanoid robot. So that multi-task functions can be done by a single robot which reduces the man power and time consumption. Raspberry pi and Arduino is interfaced to control and process the work of robot. Voice recognition is done with the raspberry pi and the robot movements are controlled by the Arduino.

II.METHODOLOGY

In the proposed system Raspberry pi 0 & 3, ARDUINO UNO, and Gear motor are used. Arduino is nothing but a Microcontroller board based on the ATmega 328. Raspberry pi 0 act as a master and Raspberry pi 3 act as slave interfaced with raspberry pi 0. Microphone and speakers are interfaced with Raspberry pi. It plays a major role in communication process. It is connected with Google Engine. Arduino receives the voice data through the microphone when the sound signal is sensed. The received voice is processed and converted as text input by Arduino and send it to Google by Raspberry pi and replay for the voice data in voice output through speaker.



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III.BLOCK DIAGRAM

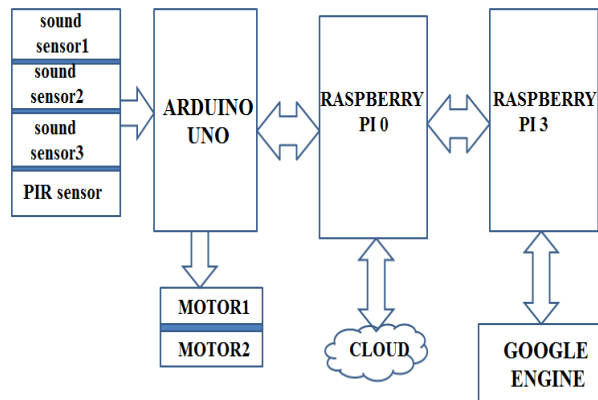
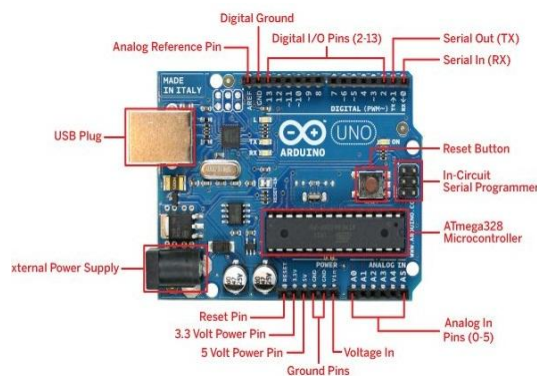


Fig 1. Block Diagram

Arduino UNO:

It is nothing but microcontroller board 8-bit ATmega328 .It consist of components such as crystal oscillator, serial communication ,voltage regulator etc... It has 14 digital I/O pins, 6 Analog I/O pins and USB connection port, power barrel jack and reset button. The microcontroller has 32kB of ISP flash memory, 2kB RAM and 1kB EEPROM .The board provides serial communication capability via UART, SPI and I2C.Because of well design in the form of Arduino it is easy to understand. In Arduino we use high level of programming language like C language, C++ language etc. It is easy to understand and user friendly language. It has much advantage like multitasking, automation, time domain etc.



Raspberry pi:

Raspberry pi 0&3 are used. Raspberry pi 3 offers more languages for convenient to search in Google engine, with it's built in wireless connectivity, it is low cost hub for internet of things devices. It is flexible for transmission.



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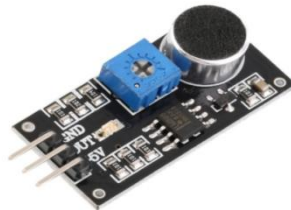
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Fig: Raspberry pi 3

Sound sensor:

The sound sensor is one type of the module used to notice the sound. Generally, this module is used to the intensity of sound . It combines a microphone and some processing circuitry. It provides not only an audio output, but also a binary representation of its amplitude.



PIR sensor:

PIR (Passive Infrared sensor) is used to detect the human. It measures infrared light radiating from human body. It has range 10m from the sensor. PIR are fundamentally made of a pyro electric sensor.

Gear Motor:

Gear motor use either AC (or) DC power. Gear Motor is used to rotate the neck and hip in the proposed system. Gear box is intended to limit the speed of the motor's shaft, and increase the motor's ability to output torque.



Fig: Gear motor



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IV. CONCLUSION

The design descriptor is well suitable for robot to do the job of the receptionist. Proposed work defined for directing the visitors and a model with trained information that a robot can understand to interact with visitors. Finally, it defines working of the model in industries, institutions or office spaces as a receptionist.

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