Robo Santral: An autonomous guide robot

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ABSTRACT: RoboSantral a self-governing aide robot which is structured so as to direct the guests through a hardware research facility. This robot goes with visitors through research facility and gives introduction on predefined instruments. Instruments information is acquired from RFID label posted on specific instrument, the peruser peruses the objective. A voice playback unit using SD card is used to playback the information of particular instrument. IR sensors are used for obstacle detection.

Key Words: Radio frequency identification (RFID), IR Sensors, Voice playback unit, SD card

I. INTRODUCTION
In this paper an independent guide robot is intended to direct the guests through research center is introduced [1]. Besides it can be used to guide libraries, museums, theaters and cultural activity are used for application. When the required man power for giving introduction is less a robot turns to bedesirable choice [1]. Robo Santral is designed to satisfy the above need. RoboSantral is design with various components such as microcontroller, LCD screen, sensors, speakers, Dc motor drive controller. The design components are placed inorder to implement introductive guide robot [2].

There are worries about the expanding utilization of robot and their job in the public eye. Robots are accused for rising joblessness as they supplant specialists in expanding quantities of capacities. The utilization of robots in military battle raises moral concerns. The conceivable outcomes of robot independence and potential repercussions have been tended to in fiction and might be a practical worry later on [3].

Guide robot in gallery condition has just been tended to a few time in past. Yet, for our paper of guide robot the engaging introduction of data is one of our principle job. Following segment of this paper presents data on structure, usage and test consequence of RoboSantral.

II. MECHANICAL DESIGN
Every successful robot application has fundamental approach. Various parts of robot has excessive importance in design.

Fig.1 The base platform of RoboSantral [3].

Base stage of the robot is structured by thinking about the field conditions.

Hence, underway of the base, compressed wood sheets and rough terrain tires are utilized accepting unpleasant and unpredictable ways as appeared in Fig.1.

III. FRAMEWORK DESIGN AND OPERATION
The block diagram of the system is shown below in Fig.2. RFID reader, IR sensor are the input blocks that collects the surrounding data. RoboSantral understands the different types of surrounding data with the help of this block. When infrared sensor met an difficulty in the range within 50 cm the robot stops. The infrared sensor is placed on front side of robot.

Motor driving is operated through the DC motor driver (L293D). The robot 12V/200-rpm engines are driven by the engine driver. The straight movement of the wheels is balanced by managing the current going to the wheels by motor driving.
These tags help to identify the specific location. Recognition of a RFID tag tend the microcontroller to instruct the voice playback unit to audio out the saved voice file.

IV. METHODOLOGY / FLOWCHART
Following flowchart speaks to genuine way of paper to be pursued. As indicated by this flowchart the undertaking must be worked.

V. RESULTS
The following are the results which are achieved after completion of paper
a) As supply is given LCD is initialized.

b) The DC motors starts and the motor is controlled by motor driver IC.
c) The controlling of motor is done in programming.
d) For each instrument the RFID tag will be pasted. After giving supply the robot will move straightly.
e) The robot moves till 1st location being detected. As instrument is recognized it stops for a specific time till data about that instrument is played.
f) In the wake of finishing the 1st instrument the robot goes further to identify second instrument as minute it identifies second instrument it begins playing data.
g) Subsequent to finishing second instrument the robot promptly moves 90 degree for recognizing third instrument. Again it plays data for third instrument and stop there.

VI. CONCLUSION
This paper gives us a great deal of knowledge about sensors and identification devices and their interfacing to achieve common task. The robot gives information of particular instrument when it is detected by using RFID tag. It is the prototype which works sequentially and rotates 90 degree after 2nd instrument is detected.
VII. FUTURE SCOPE

We can incorporate camera for double reason for example one for security and other one for picture preparing. The robot can be intelligent. We can incorporate guest counter. We can incorporate presentation so as to speak to recordings. Touchpad or Keypad can be incorporated for change in goal focuses. Auto battery-powered batteries can be actualized.

REFERENCES


