SIX ACTIONS ROBOT

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ABSTRACT

Robots have become the more common used mechanical machine. Different applications of robots by human can decrease the unanticipated risks and ethical problems. Humanoid robots are widely used to replace human to decrease human's workload and can be a good assistant in high-risk and difficult job.

Indeed, experience in how to make and construct a robot do improve and polishes many skills such as electronics, programming, mechanical engineering, et cetera. Though it can't be expected to be an expert in those fields to build a working robot, but it is a chance to get smarter after this task. [1]

In this project, a humanoid robot which is able to detect human voice and react due to the instruction given is requested. This project's aim to construct a voice detected humanoid robot which able to perform in six different movements such as forward, backward, turn left, turn right, hands up, and hands down.
When a human voice is sensed by speech recognition, the robot will move accordingly to the order of a human. For examples when someone says "forward", the robot will move forward etc. this robot is able to complete six different actions that are move forward, move backward, turn left, turn right, hands up, and hands down.

The main objective of this project is to study the interaction between human voice and robot movements. A research on a speech recognition which is able to detect human voice is very important.
The used of SR-07 speech recognition is used as the speech recognition that able to detect specified human sound. Function of this SR-07 speech recognition will be discussed in the following chapter.
In this project, PIC16F877A microcontroller is being chosen as the interface microchip. When this PIC gets the signal from the voice recognition, it will transfer the input signal to the according output ports. This will activate the servo motors and so the robot will be able to complete each task.

In this project, a human appearance robot will be constructed and will complete the movements by using six servo motors. Two motors will be using for the robot's arms and the others four will be using for the robot's leg. The motions which are needed the robot's leg such as move forward, move backward, turn left and turn right will be completed by two wheels. Two wheels will be constructed at the robot's legs.