MINI PROJECT – II
(2018-19)

Robotic Arm

SYNOPSIS

Institute of Engineering & Technology

Team Members

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About the Project:

A robotic arm is a robot manipulator, usually programmable, with similar functions to a human arm. The links of such a manipulator are connected by joints allowing either rotational motion (such as in an articulated robot) or translational (linear) displacement.

Nowadays, robots are increasingly being integrated into working tasks to replace humans especially, to perform the repetitive task. In general, robotics can be divided into two areas, industrial and service robotics. International Federation of Robotics (IFR) defines a service robot as a robot which operates semi- or fully autonomously to perform services useful to the well- being of humans and equipment, excluding manufacturing operations. These robots are currently used in many fields of applications including office, military tasks, hospital operations, dangerous environment and agriculture. Besides, it might be difficult or dangerous for humans to do some specific tasks like picking up explosive chemicals, defusing bombs or in worst case scenario to pick and place the bomb somewhere for containment and for repeated pick and place action in industries. Therefore, a robot can be replaced human to do work.

Motivation:

The main motivation of the project is to overcome the problem such as placing or picking hazardous objects or non-hazardous objects that are far away from the user such as taking readings from an active volcano to diffusing a bomb.

Future Prospects:

The project is built on a wired model. It could further be developed to work on wireless communication, thus allowing the user to move in an even easier unrestricted manner. A clamper can be connected on the servo motor which will allow the movements of the palm and allow picking and placing of objects.

Requirements:

a) Hardware:

- **Arduino Board**
- **Servo Motor**
- **F to F Jumper and M to M Jumper**
- **Breadboard**
- **Battery**
- **Battery Cap**
- **Potentiometer 10Kohm**

b) Software:

- **Arduino Language**