
ROBOTIC ARM

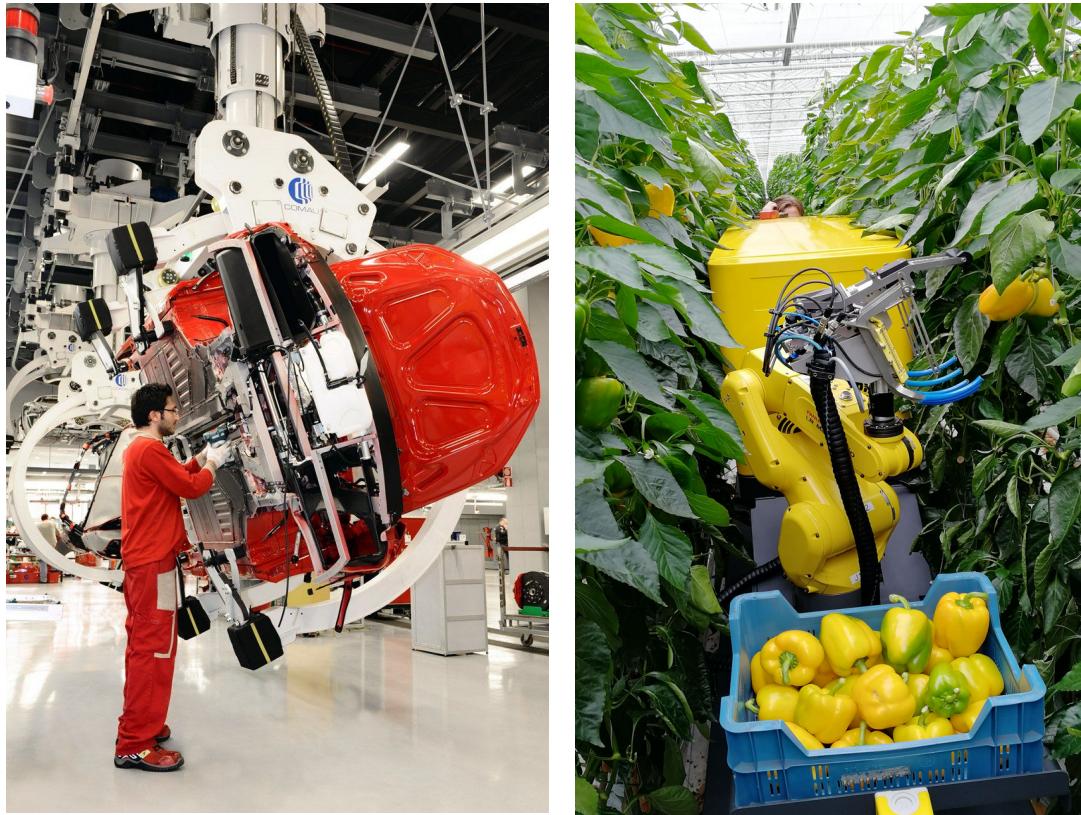
INRODUCTION

Robotic arm we are making is desktop size Articulated robot with a gripper which can be used to handle very small loads, with 6 (Degree of freedom) DOF. The inspiration for making this robot is from Iron Man movie this is miniature size robot arm which works same as real industrie robots used



Now a day robots are used for all kinds of work form cleaning to high precision cutting in industries as well as in small scale industries even for cooking

ROBOTIC ARM



Robot is a mechanical arm, a manipulator designed to perform many different tasks and capable of repeating, using variable programming. To perform its assigned tasks, the robot can move parts, objects, tools, and special devices by means of programmed motions and points.

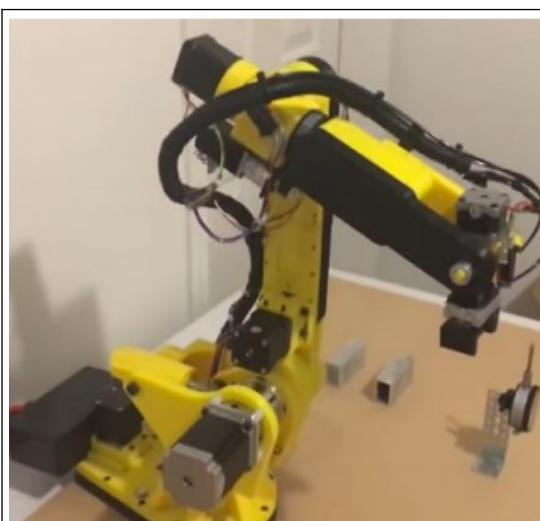
Its main function is to move from point to point, as instructed by the controller

In manufacturing industry and nuclear industry, a large fraction of the work is repetitive and judicious application of automation will most certainly result in optimum utilization of machine and manpower. A pneumatic 'Pick and Place' Robot has been developed to achieve automation in applications where great sophistication is not needed and simple tasks like picking up of small parts at one location and placing them at another location can be done with great ease

DESIGN

WE HAVE FOUND 4 INTERESTING DESIGNS ON WEB

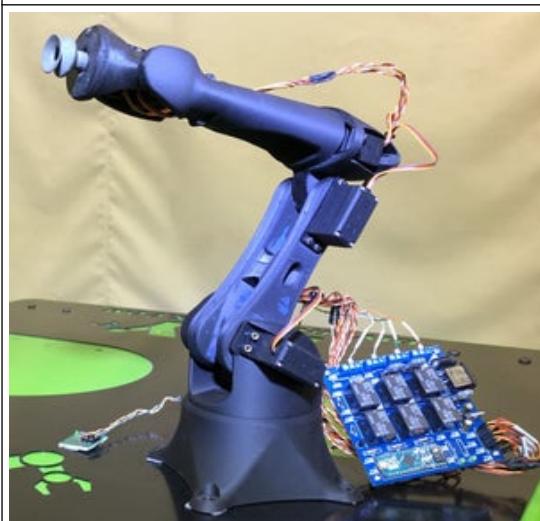
1. A4
2. Thor
3. Educative 6 Axis Robot Arm
4. BCN3D/BCN3D-Moveo



1.A4



2.Thor



3.Educative 6 Axis Robot Arm



4.BCN3D/BCN3D-Moveo

ROBOTIC ARM

WE FINALISED THE EDUCATIVE 6 AXIS ROBOT ARM PROJECT

BASED ON

- All the Materials very accessible
- Can be build with in Rs:30,000 easily
- less complex in design than other 3 projects
- less number of parts than other 3 projects
- Small in size
- prebuild control software ready to use if programing fails
- No need of any specialised motors like in A4 project

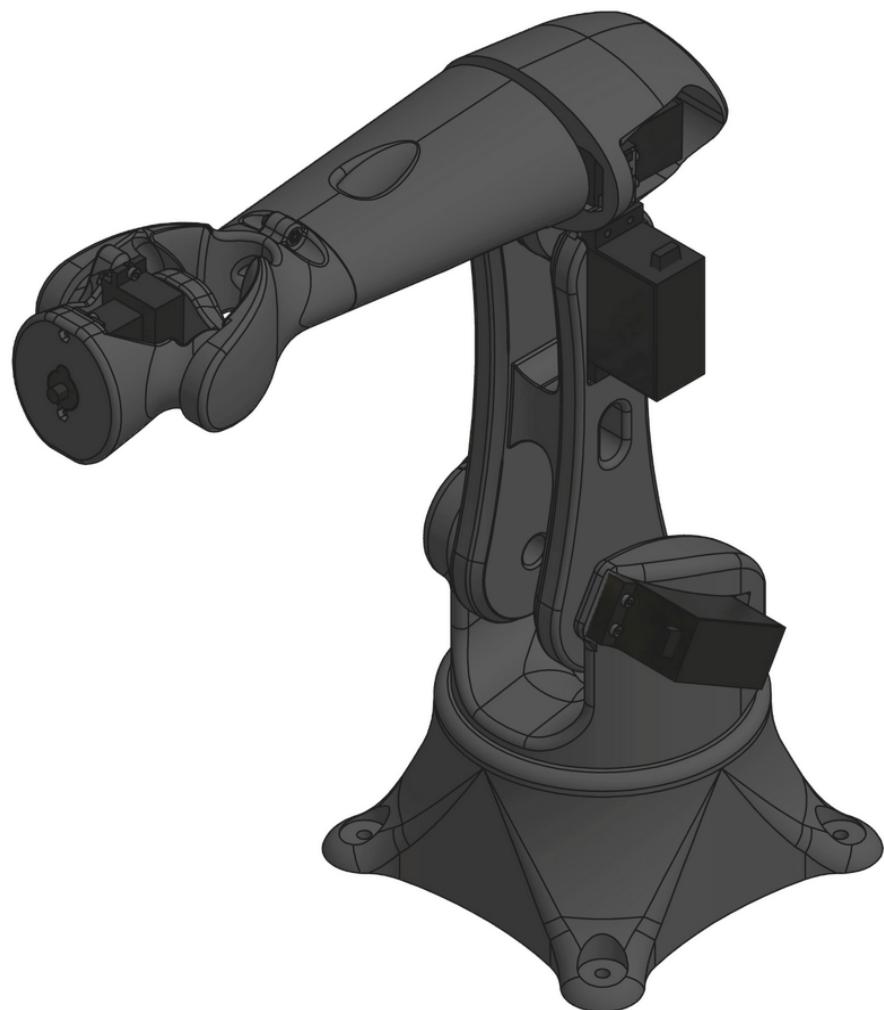
THE DIY-ROBOTICS EDUCATIVE CELL

we have taken only the mechanical core

The DIY-Robotics educative cell is a platform that includes a 6-axis robotic arm, with an electronic control circuit and a programming software prebuild.

This platform is an introduction to the world of industrial robotics. Through this project, DIY-Robotics wishes to offer an affordable but quality solution to all those who would like to learn more about this fascinating field. This project is an excellent opportunity to develop various knowledge and skills in the fields of mechanics, electrical as well as computer science. With the DIYRobotics educative cell, robotics is within everyone's reach has of now explained above this is fablous project **we have taken only the mechanical core** of the project and modifing the electrical and useing ROS software for control.

MECHANICAL CORE



PROBLEMS WHILE FABRICATION

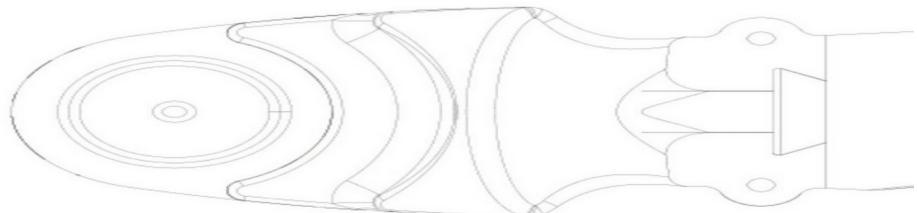
1. PRINTED PARTS IS NOT GOOD HAS WE THOUGHT

DESCRIPTION:

we had to re-render .stl file to get 3d parts more accurate finishing, one parts has been printed without groove

SOLUTION:

To solve we drilled it for groove and some unaccurate parts needed our hand finishing to fit correctly



Link-4 design



After drill

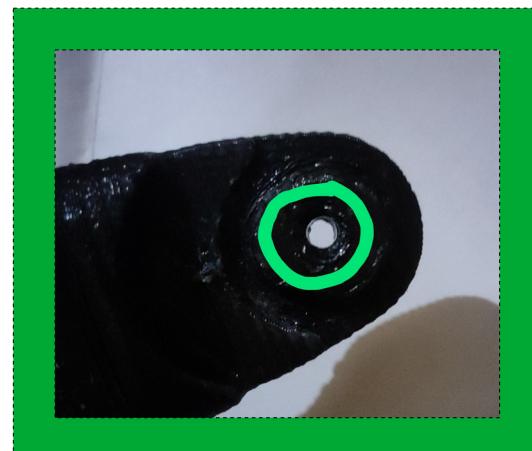
2.SLIPPERY CONNECTION

DESCRIPTION:

Due to FDM printing we can not get exact hole to fit the motor spindle. No matter how tight we connect the part to spindle it has eventually got into slippery connection so without solving we can't move ahead.

SOLUTION:

We solved this by insert nut technique used in carpentry to fasten but we didn't use insert nut. Instead cut the pulley which come along with motor pack and by using solring gun to mounted it holes.



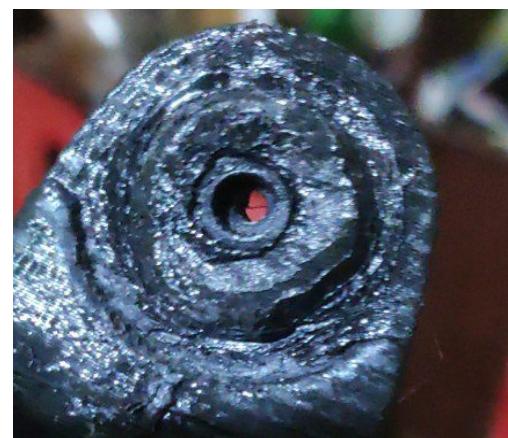
Without inserting pulley



Pully in pack



Pully after cutting



After pulley mounted