भारतीय सूचना प्रौद्योगिकी संस्थान गुवाहाटी

Indian Institute of Information Technology Guwahati

Information regarding logistics bot project.

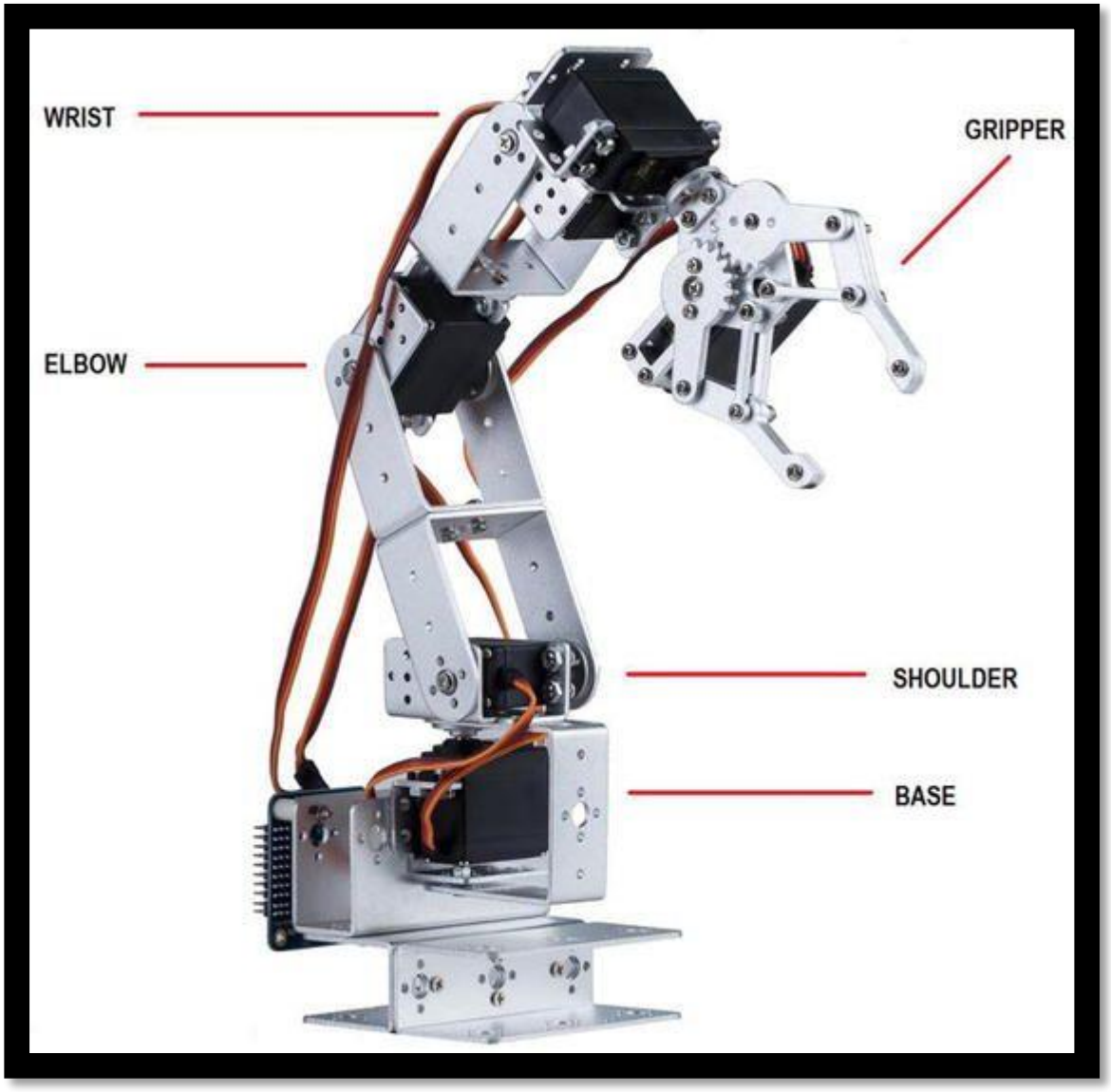
Phase - 1

Index:

Introduction.

This project is divided into 2 subparts.

1. Robotic Arm

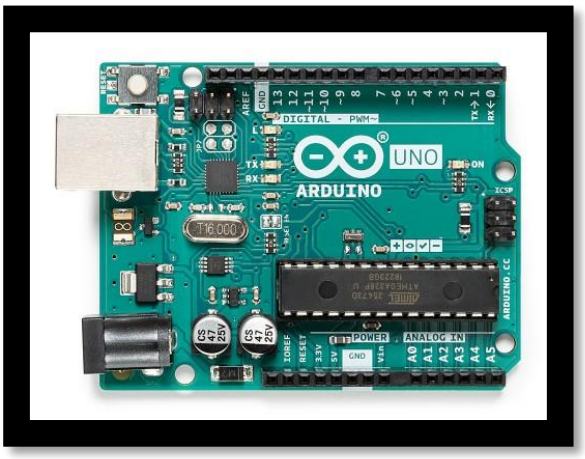


2. Warehouse Rover.

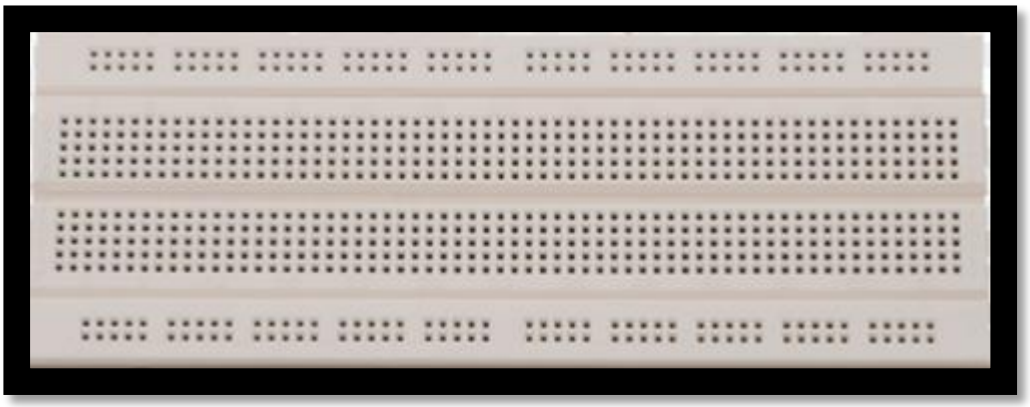

crosshead
overhead guard
mast
lifting chain
mast operating lever
hydraulic system
carriage
engine compartment
fork
forks
frame

General Items to purchase.

1. Arduino UNO – 1



2. Breadboard – 1



3. Jumper Wires M to F, M to M - 1 set each

4. Battery - 9V - as much as req.

5. Motors - 4(100-200)RPM

-2 High Torque Motors or 2 servo motors for lifting system.

5. Motor Driver L293D

6. Bluetooth HC05

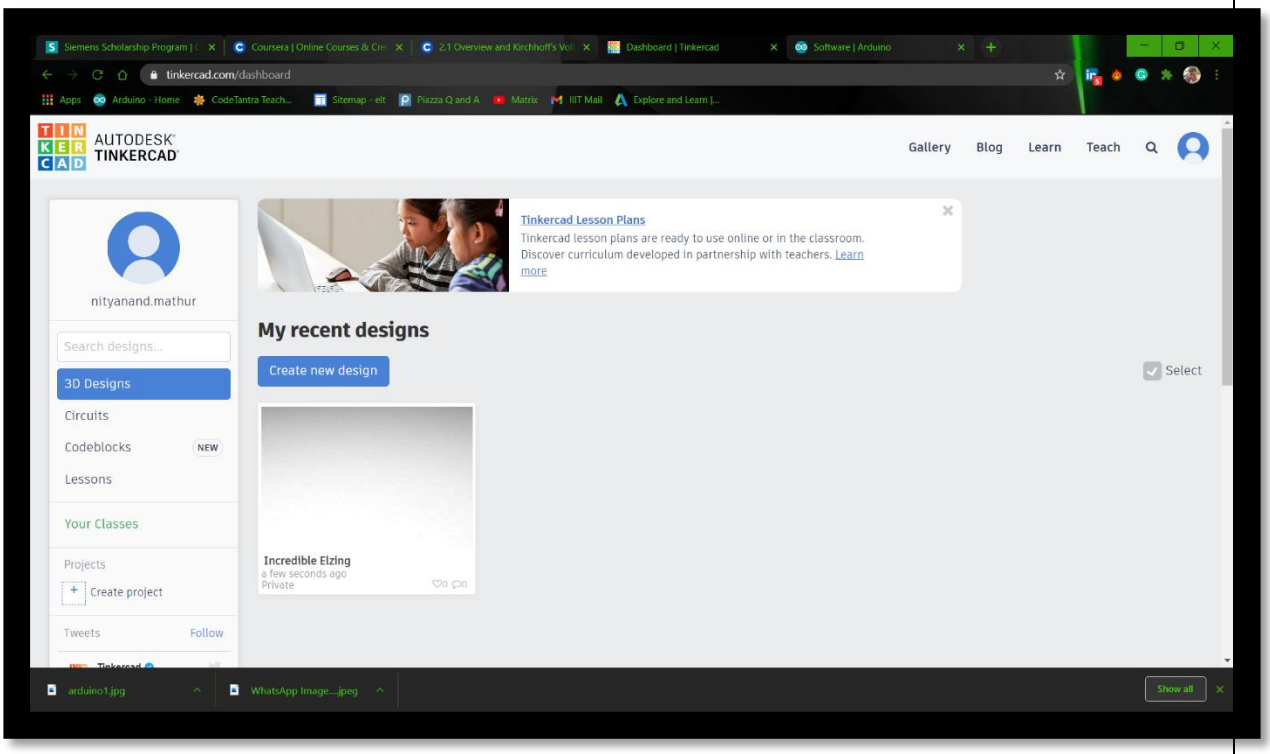
8.Wheels 4 (Try for Macnum)

9. LEDs and Resistors(only if u want)

Software Requirement

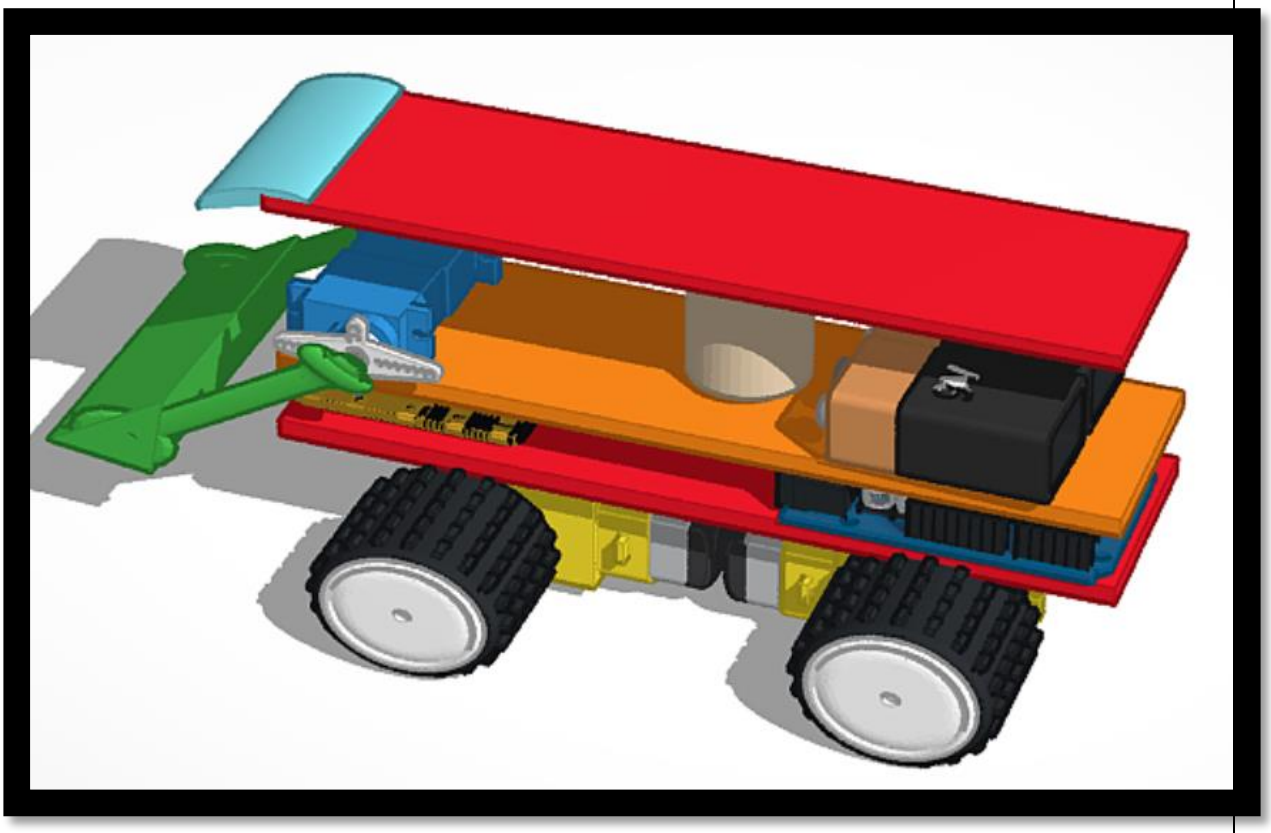
1. Arduino IDE.
   Start learning Arduino IDE from its official website. You can use it with basic knowledge of C.

2. Tinkercad by Autodesk.
   Use this software for designing your robot.



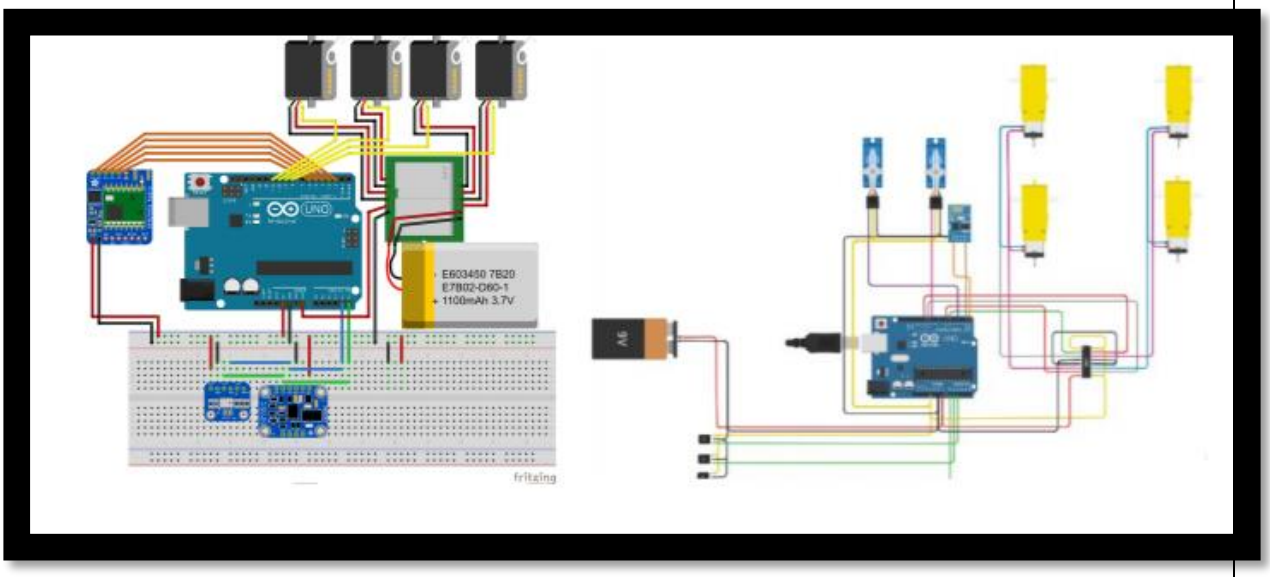
Process:

1. Design a model @ Tinkercad



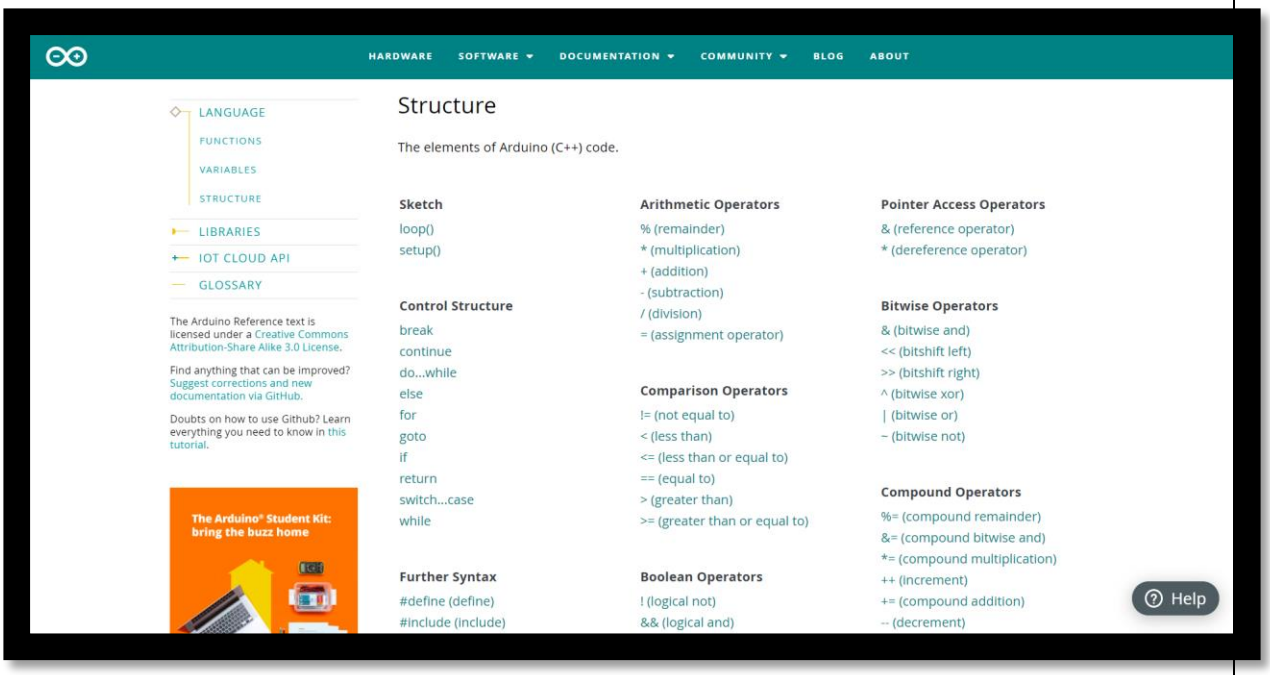
(The above designed is made by @Pratyush)

2. Design its circuit @ Tinkercad

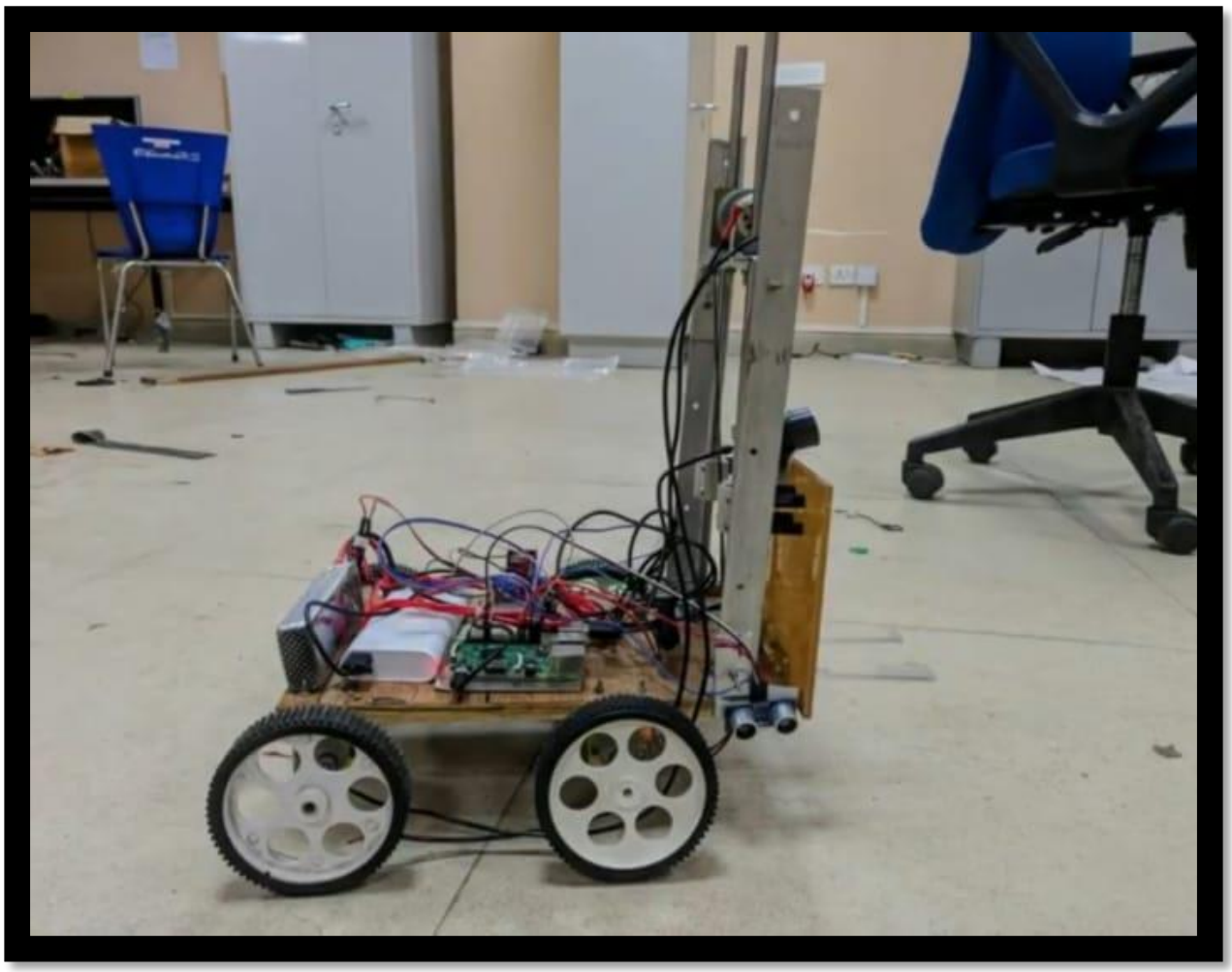


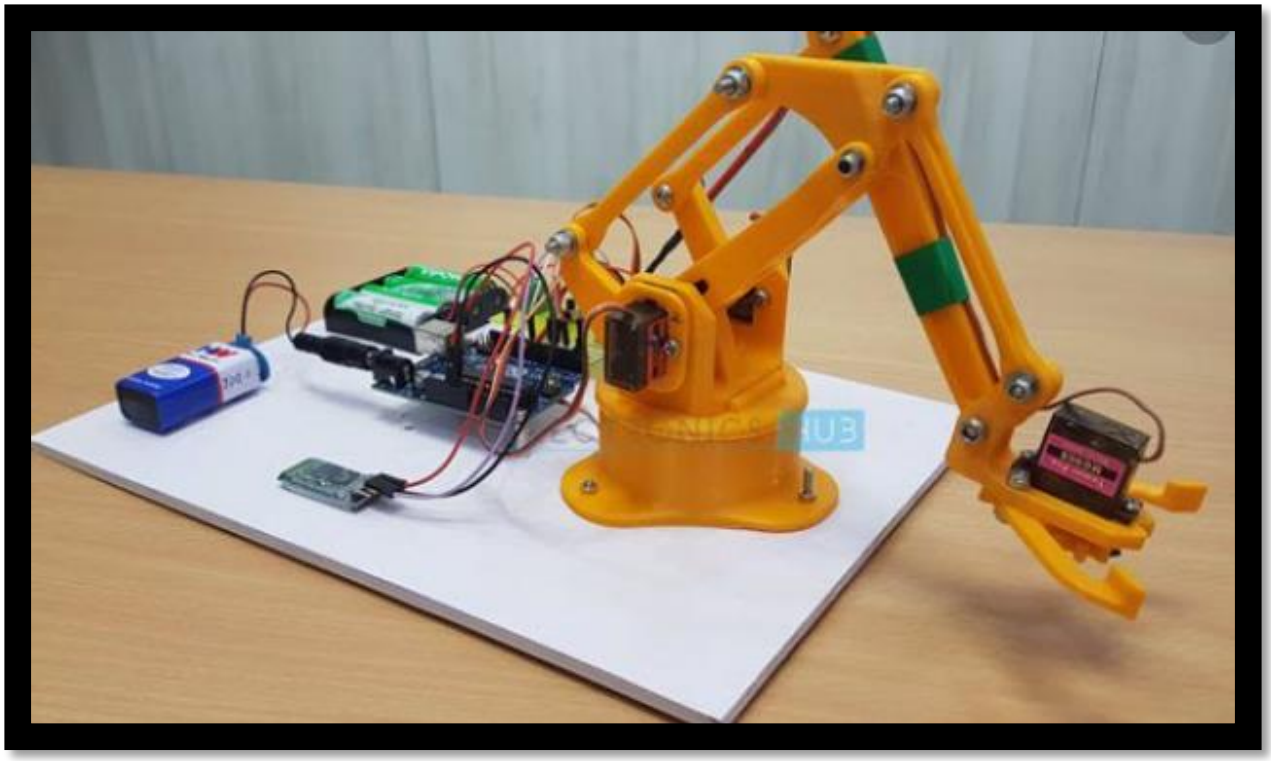
A session will be taken to show connections.

3. Create its chassis using plyboard or plastic board.
4. Code your Arduino



5. Assemble your devices according to the design.





Frequently Asked Questions:

1. **How many items to buy (motors, servos, etc.)?**
   All of the details are given in the list "GENERAL ITEMS TO PURCHASE." Refer it.
2. **How to design the bot?**
   Use Tinkercad. If you don't know how to use it. Take it tutorial. Given on official website.
3. **How to design circuit?**
   Session will be taken for it. Use https://www.arduino.cc/en/Tutorial/HomePage to learn using Arduino.
4. **How to make chassis?**
   Build your chassis using wooden plyboard or plastic sheets. Whichever you prefer.
5. **How to make pulley system?**
   Use high torque motors if possible. If you use high torque motors, refer https://www.instructables.com/Basic-Pulley-Mechanisms else use the servo motor to design a pulley system as of your choice.
6. **How to make robotic arm?**
   Use different rods or wooden sticks to make its movable parts. Use servo motors at joints to ensure +90 to -90 motion.
7. **How to code the Arduino Uno?**
   You have to learn to code Arduino Uno using https://www.arduino.cc/en/Tutorial/HomePage . You can also watch tutorials on YouTube for the same.

After learning to use Fusion 360, you have to create final design in it.

Thanks and Regard

Nityanand Mathur.