

Project Problem Statement

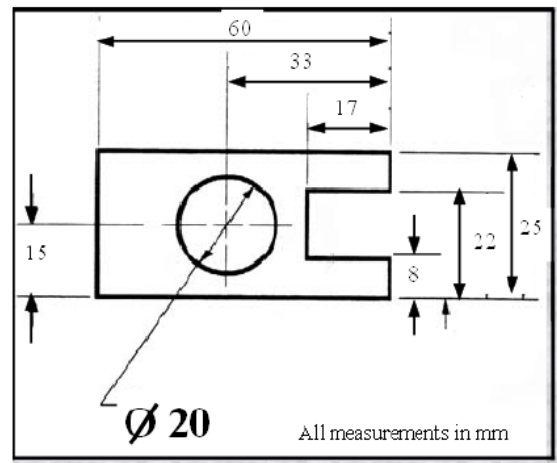
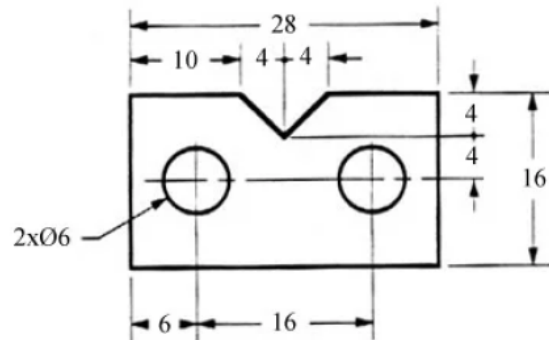
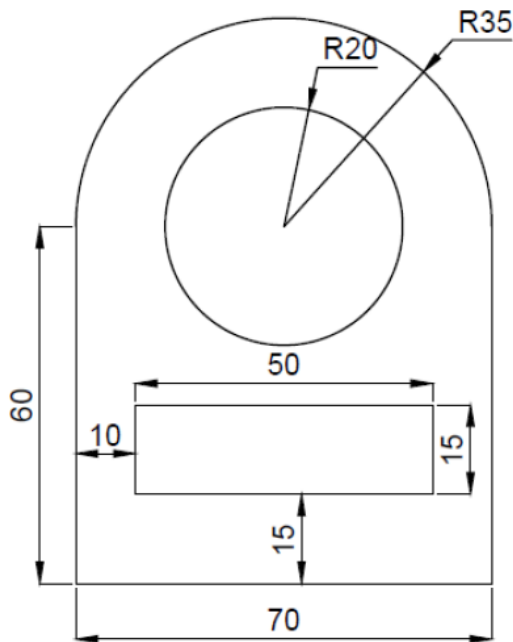
A robotics engineer is someone with multiple horizons of skills and ideas , be it mechanical , electronic or programming . You work at a robotics company IS Robotics , you work as a robotics engineer, you need to work and design on multiple robotic parts one by one. Part design and iterations happen every hour and its important to understand the criticality of these parts in these critical times a robotics engineer has the key responsibilities To design accurate cad models of the parts To make DOF Diagrams of the robotic arm and implement the forces acting To Implement RoboDK for simulation of ABB robotic arm To do path planning and do paint work using ABB robotic arm in Robo Dk.

We have listed down a set of problem statements that you need to work on to make sure you and your team achieve the goals on time.

Design in Fusion 360

Design the following parts and extrude the dimensions upto 20mm for all of them , make sure that you take the dimensions to the most accurate format and submit, the parts are going to be used for the body of the bot , so make sure you use different colours, while submitting to show different parts.

Pro Tip - Use Aluminium / Steel for the given parts



Design any two parts from above and that would work as a perfect evaluation, Design all three for gaining an extra brownie point.

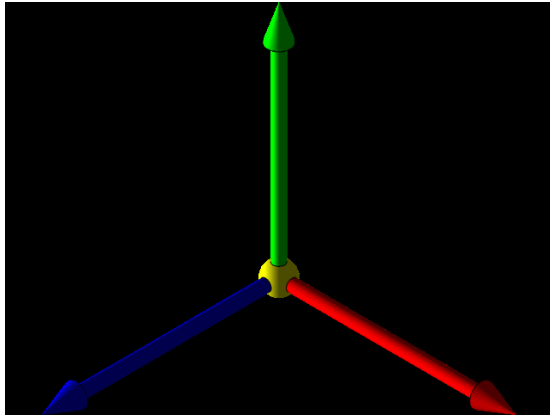
Mention and label all the DOF of robotic arm and calculate total DOF

There are two robotic arm which are marked over here, these two arm are needed to be redrawn with the label of the degree of freedom and the possible motion these robotic arms can perform

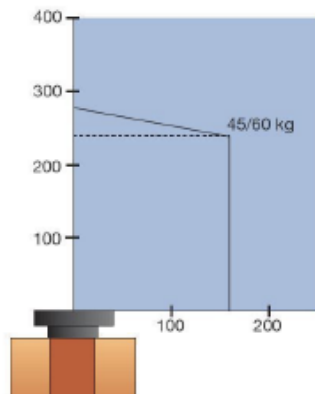
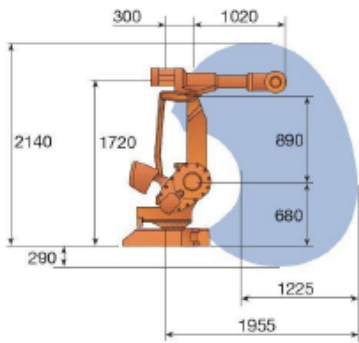
Pro Tip - Use the gizmo to show the axis

internship studio

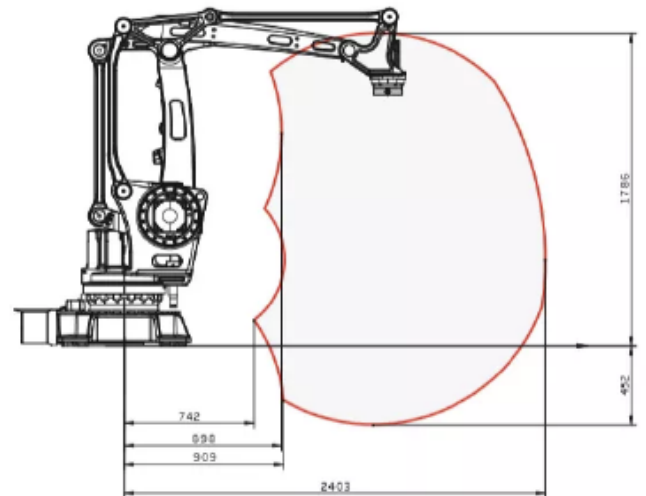
Gizmo for 3D Axis



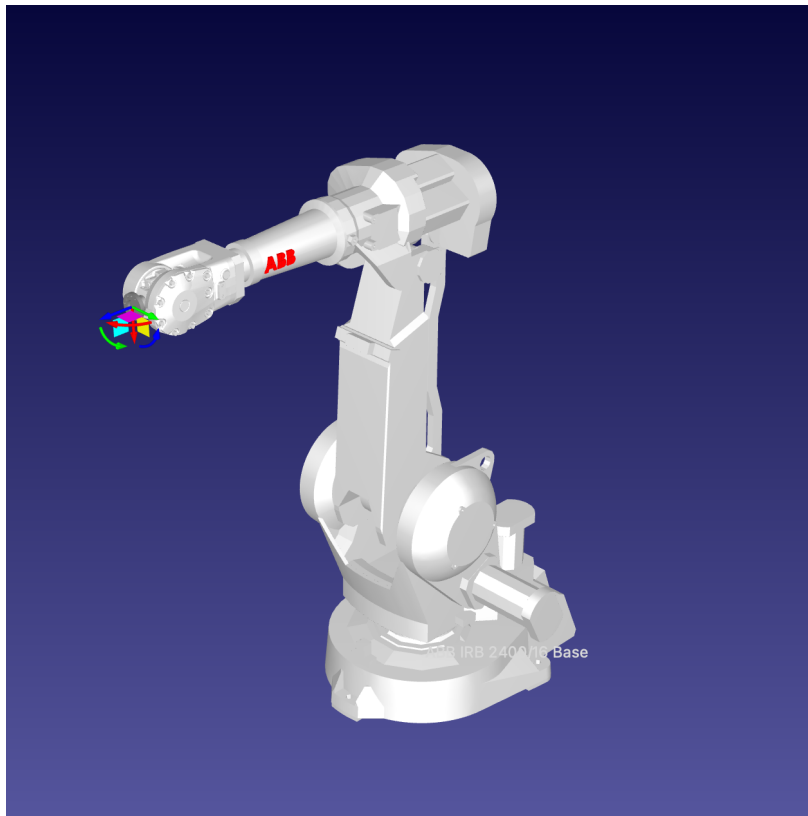
IRB 4400/45 and 4400/60



Working range



To Implement RoboDK for simulation of ABB robotic arm Robot ABB-IRB-2400-16



Mark 3 Points with the robot and , perform the motion from those 3 points , the motion plan should be in loop and should be implemented with the desired and required motion plan. These three points can be any point in the space , but they should not be singularity points

You are being hired to solve all the problems above with the conditioning to use the knowledge that we worked around and also log the data into the log.