MULTI-FUNCTIONAL ROBOTIC ARM

PROJECT OBJECTIVES

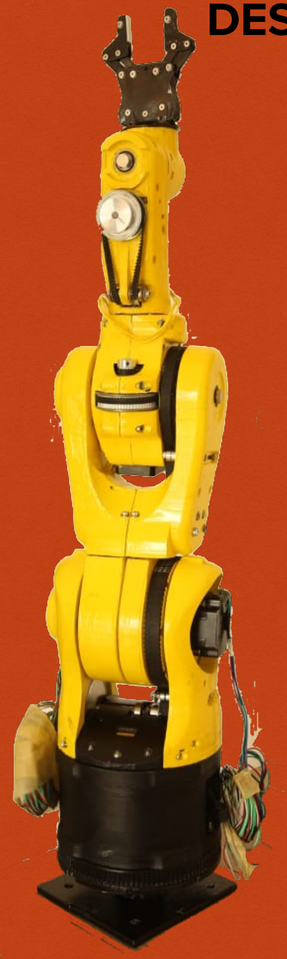
1. Cost
2. Safety
3. Manufacturability

REQUIREMENTS & PRECAUTIONS

1. Welding helmet must be worn all times when welding.
2. Gripping load must not exceed 0.8 KG. Must weigh the load before gripping.
3. Screwdriving process can only be performed on wood and foam.

FUTURE WORKS

TIG welding robotic arms would be utilized for larger, more critical purposes in the automotive & marine industries; in manufacturing and maintenance sectors.



DESIGN AND PROJECT DEVELOPMENT

1. Brainstorming: The team members worked together in harmony deciding a sustainable project that helps the public.
2. Design selection: After deciding on a project, the selection of the design was an important factor that depended on cost & manufacturability.
3. Purchasing components: After selecting a manufacturable and cost effective design, components purchasing was an important step that required to be given its time.
4. Manufacturing: 3d printing was the manufacturing solution for this project using recycled abs plastic filament.
5. Assembly: After printing the robot components, assembly using screws, nuts, bolts, gears, and belts was developed creating the final shape of the robotic arm, weighing 12 Kg.

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PROJECT TEAM

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PROJECT DESCRIPTION

THE MULTI-FUNCTIONAL ROBOTIC ARM IS RESPONSIBLE FOR THREE MAIN PROCESS; WELDING, SCREWDRIVING, & GRIPPING.

IT IS A 3D PRINTED PROJECT WITH ABS RECYCLED PLASTIC FILAMENT AIMED TO PROVIDE SAFETY AND FEASIBILITY TO USERS.

MANUFACTURED IN THE EMU, MECHANICAL ENGINEERING DEPARTMENT, AS WELL AS PRIVATELY FOR THE 3D PRINTING .

IT CAN BE DESCRIBED AS PORTABLE, INEXPENSIVE, AND A SUSTAINABLE SOLUTION FOR WELDING HAZARDS.

TEAM MEMBERS

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