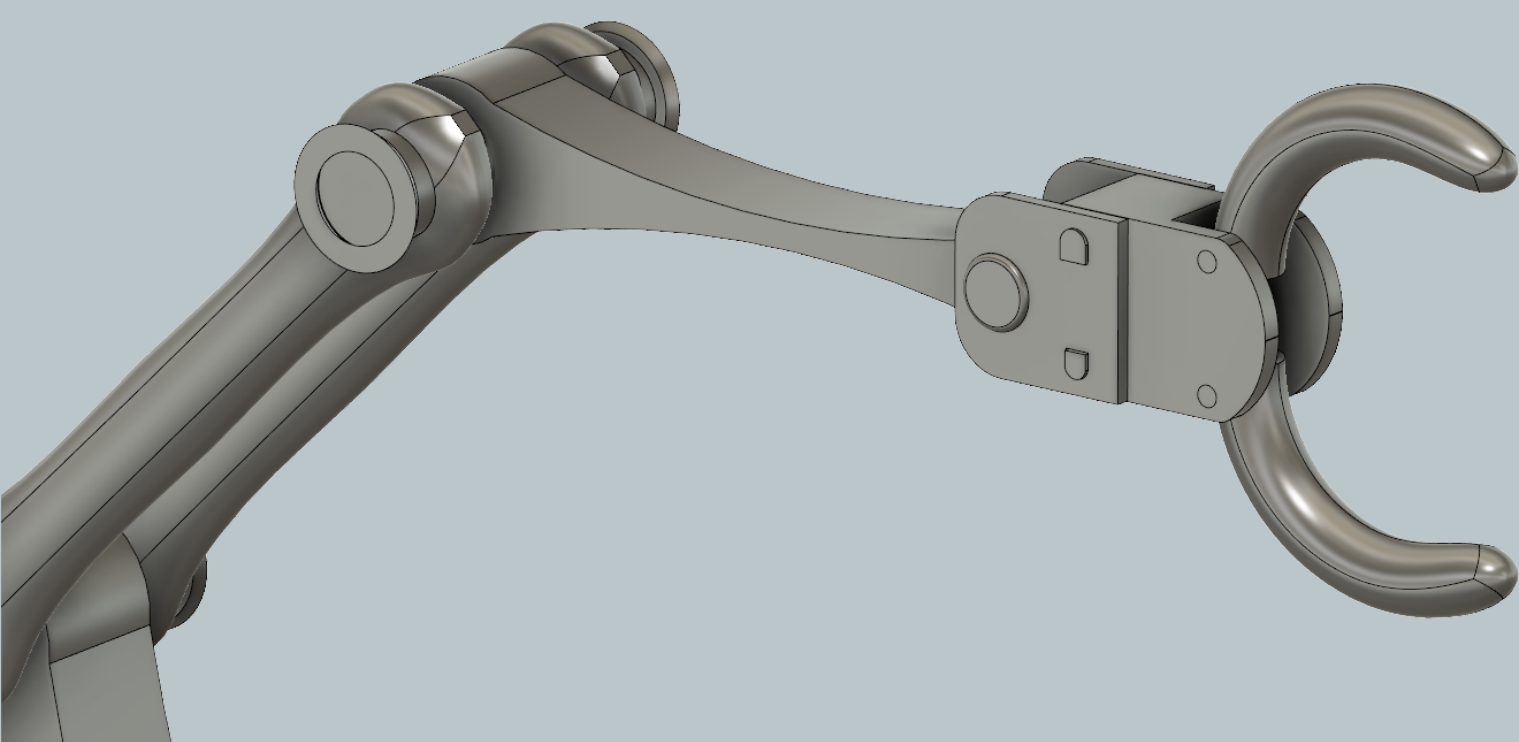# ROBOT ARM PROJECT

For Smart Methodes Copmany

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PROJECT IDEA

Designe a Robotic Arm and programmed it to participate in the Robotic Arms competition.
The competition is starts by putting two Robotic Arms in the ring with a balloon behind each one, then they try to destroy the balloon of the other Arm.

GROUP ORGANIZATIONAL STRUCTURE

INDUSTRIAL AND SYSTEM ENGINEERING DEPARTMENT (Group Leader)

ELECTRONICS AND POWER DEPARTMENT
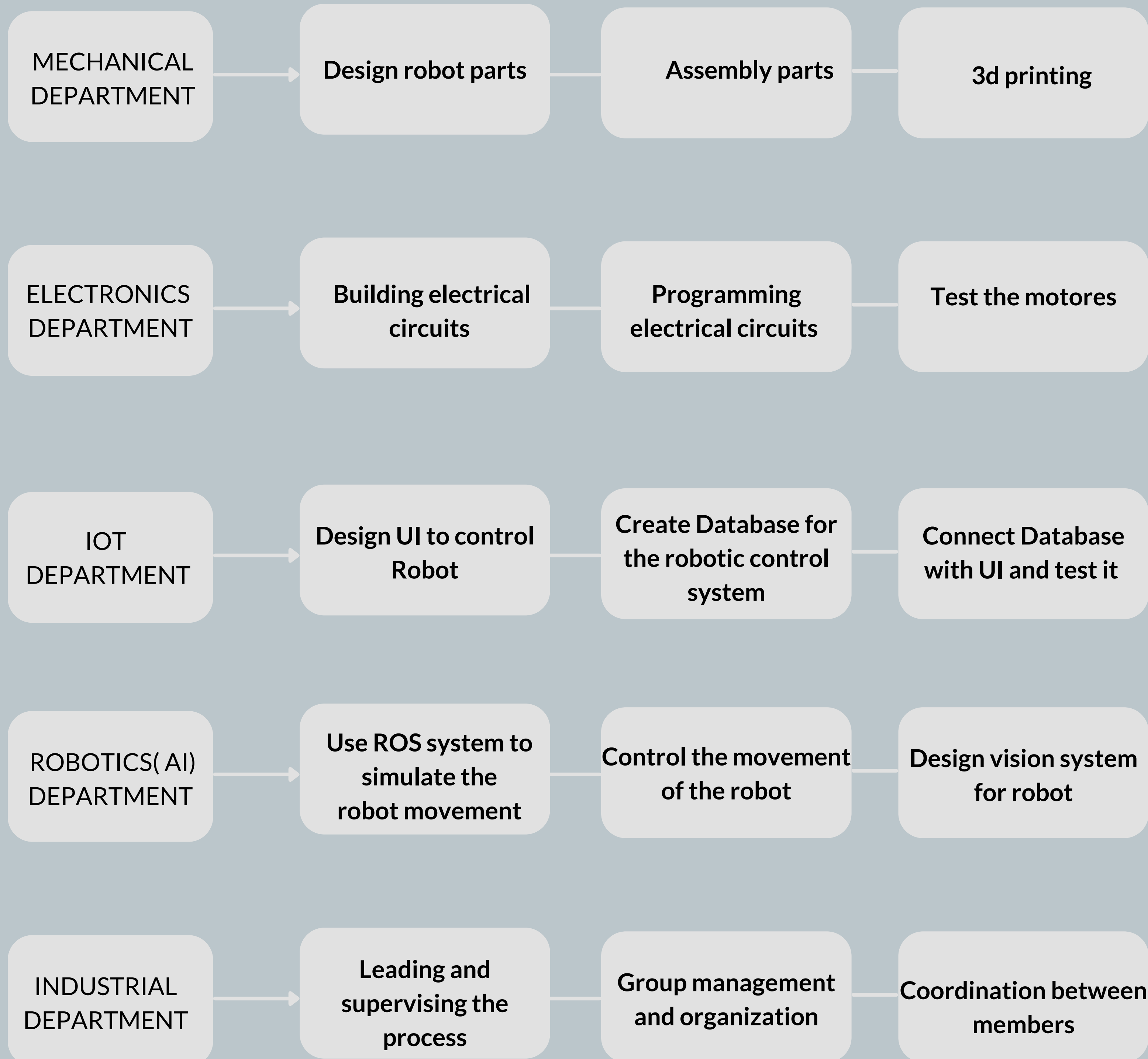
INTERNET OF THINGS DEPARTMENT

MECHANICAL DEPARTMENT

ROBOTICS AND AI DEPARTMENT

PROJECT PLAN

1.Planning for the project by gathering all the team members and discussing the mechanism of the project.

2.Divide tasks between team members and define deadline to complete the project's tasks

3.Choose all the required electrical (electric circuits) and mechanical (materials) parts

4.Starts the mental visualization of structure, the drawing and way of implementation it on real-life.

5.Start printing the robot parts, design convenient electric circuits, develop the web page controller and combine robot with AI to make it smarter

DISTRIBUTION OF TASKS

| MECHANICAL DEPARTMENT | → | Design robot parts | Assembly parts | 3d printing |

| ELECTRONICS DEPARTMENT | → | Building electrical circuits | Programming electrical circuits | Test the motores |

| IOT DEPARTMENT | → | Design UI to control Robot | Create Database for the robotic control system | Connect Database with UI and test it |

| ROBOTICS(AI) DEPARTMENT | → | Use ROS system to simulate the robot movement | Control the movement of the robot | Design vision system for robot |

| INDUSTRIAL DEPARTMENT | → | Leading and supervising the process | Group management and organization | Coordination between members |

TIMELINE

	Mon	Tues	Wed	Thurs	Fri
MECHANICAL DEPARTMENT	**Design robot parts**		Assembly parts	**3d printing**	
ELECTRONICS DEPARTMENT	**Building electrical circuits**		**Programming electrical circuits**		Test the motores
IOT DEPARTMENT	**Design UI to control Robot**			Create Database for the robotic control system	Connect Database with UI and test it
ROBOTICS(AI) DEPARTMENT	Use ROS system to simulate the robot movement	**Control the movement of the robot**		**Design vision system for robot**	

PRODUCTION LINE

Modeling $\longrightarrow$ 3D printing

Assembly $\longrightarrow$ Manual

Package $\longrightarrow$ In an airtight box and the arms fixed with pieces of cork.

Software $\longrightarrow$ Web pages, APPs