RoboVR

SRB ROWING

About the game:

Rowing is a water sport that involves propelling a boat on water using oars. By pushing against the water with an oar, a force is generated to move the boat.

In the Olympic of Robots, the rowing will be done by robots. So, we are building a robot which will use 2 oars, 1 on the left and 1 on the right to move the boat forward.

Components and its Specifications:

Sr. No.	Components	Specifications
1.	Chassis	Aluminum Sheet (5mm thick)
2.	DC Motors (x1)	60 rpm
3.	Battery	5A, 12V
4.	Remote	With DPDT switches
5.	Wires	8m-10m

Robot Details:

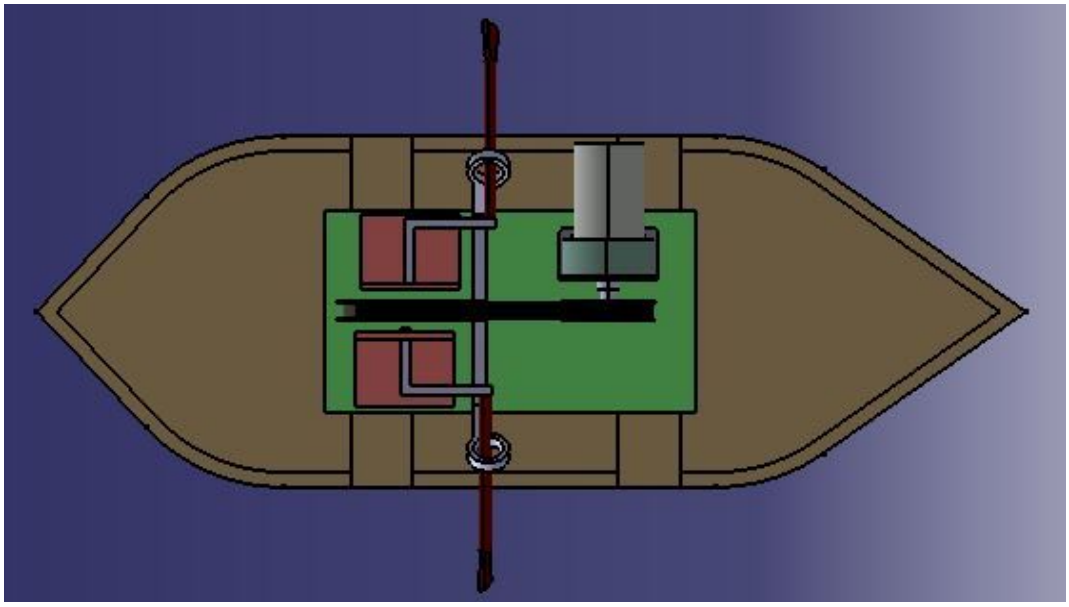
Robot Dimensions: 15” x 15” x 12”

Robot Weight: 2kg

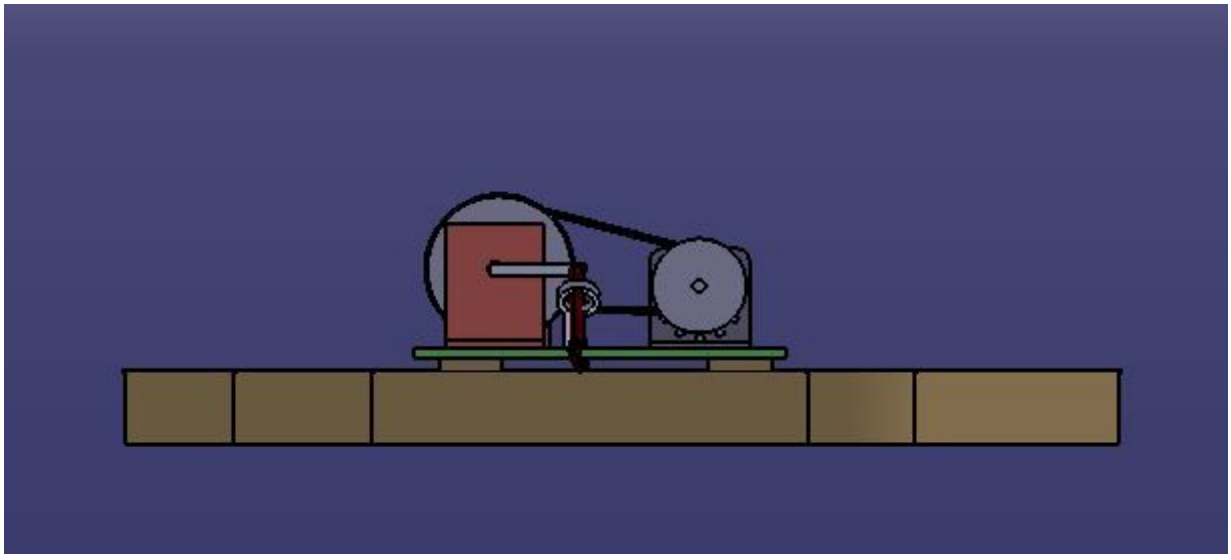
Robot Control: Wired

Mechanical Design:

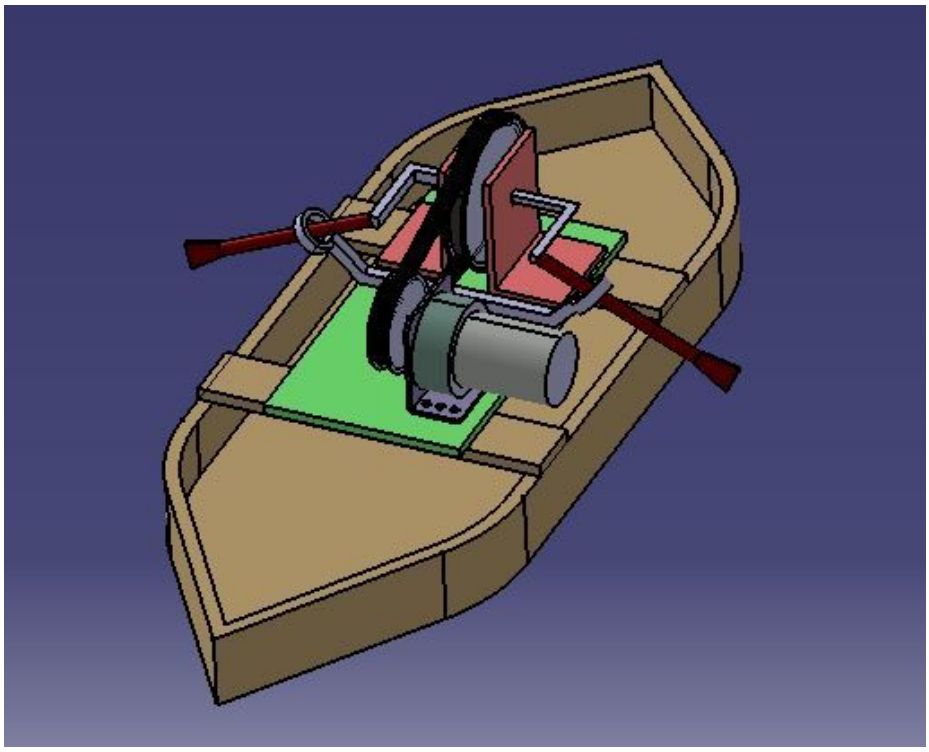
Top View



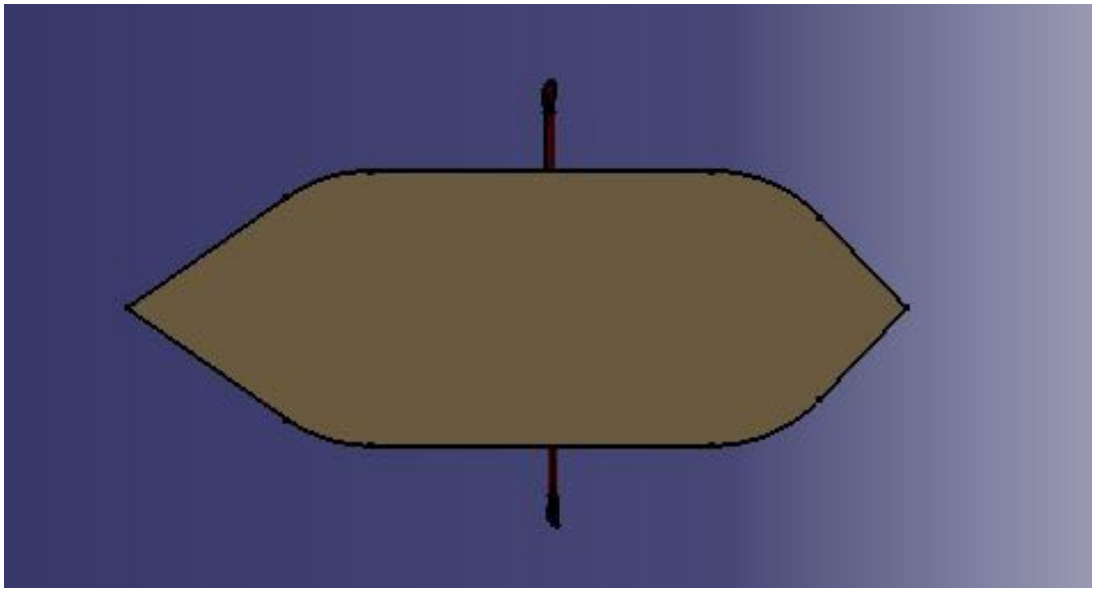
Side View



Isometric View



Bottom View

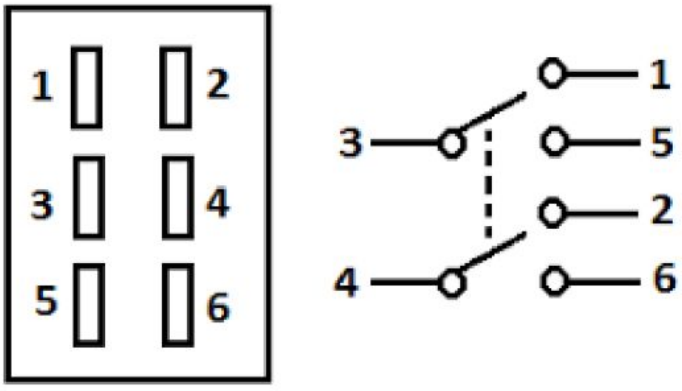


Remote Details:

A similar remote is needed to be built for this robot in which 3 DPDT switches are to be attached instead of 2 as shown in the above figure.

A Double Pole Double Throw (DPDT) switch is an electromechanical switch that has 2 inputs and 4 outputs and each input has 2 corresponding outputs that it can connect to.

Given below is the diagram of a DPDT switch.



Working:

There are 2 oars attached to the robot which is operated using the 1 motor. One motor controls the 2 oars. There is 1 oar on the left and 1 oar on the right. A rotatory motion is provided to the oars which generate the force to push forward the boat.

The movement of the robot with respect to the switch operation are given below in the table.

Movement of the Bot :

Motion	Switch s1
Forward	Forward
Backward	Backward
Left	n/c
Right	Backward

Connections: