

ROBOVR

SRB F1 CAR RACING

About the game:

In F1 Car Race at RoboVR, participants have to build 1 robot per team. The robot must be developed such that it can cover the track as quick as possible to win the championship of SRB F1 Car Racing.

Components and its Specifications:

Sr. No.	Components	Specifications
1.	Chassis	Acrylic sheet
2.	Johnson Motors (x4)	300 rpm
3.	Wheels(x4)	-
4.	Battery	5A, 12V
5.	Remote	With 2 DPDT switches
6.	Wires	-

Robot Details:

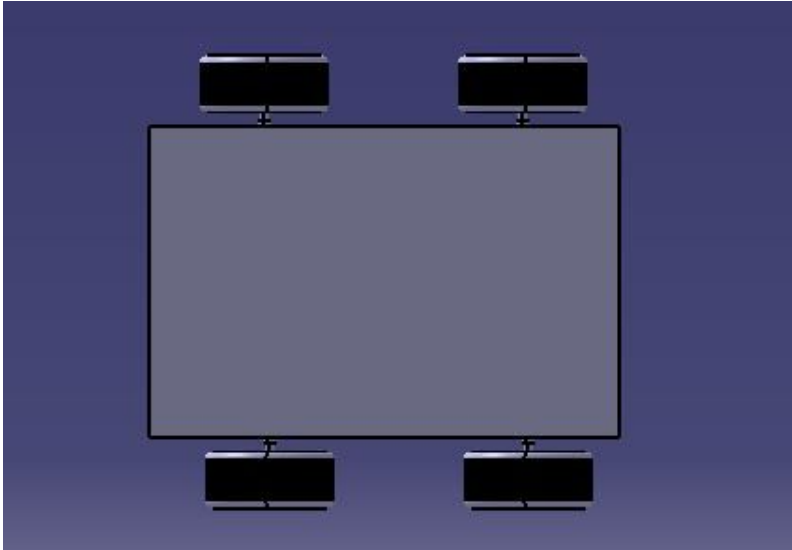
Robot Dimensions: 12" x 11" x 4"

Robot Control: Wired

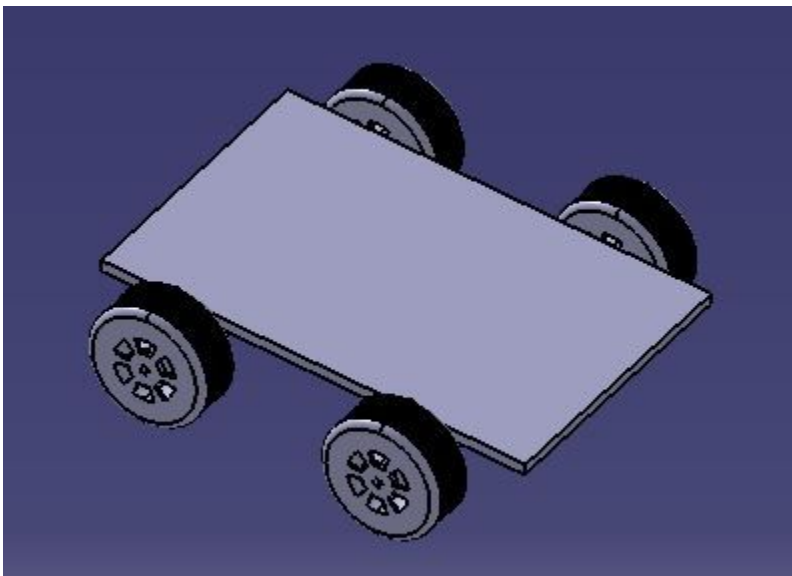
Robot Drive: 4 Wheel Drive

Mechanical Design:

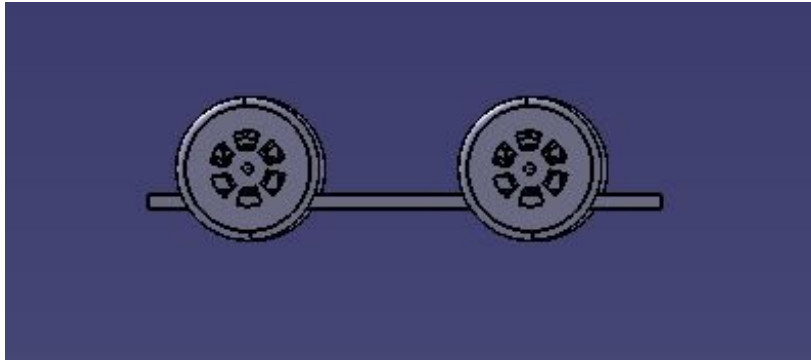
Top View



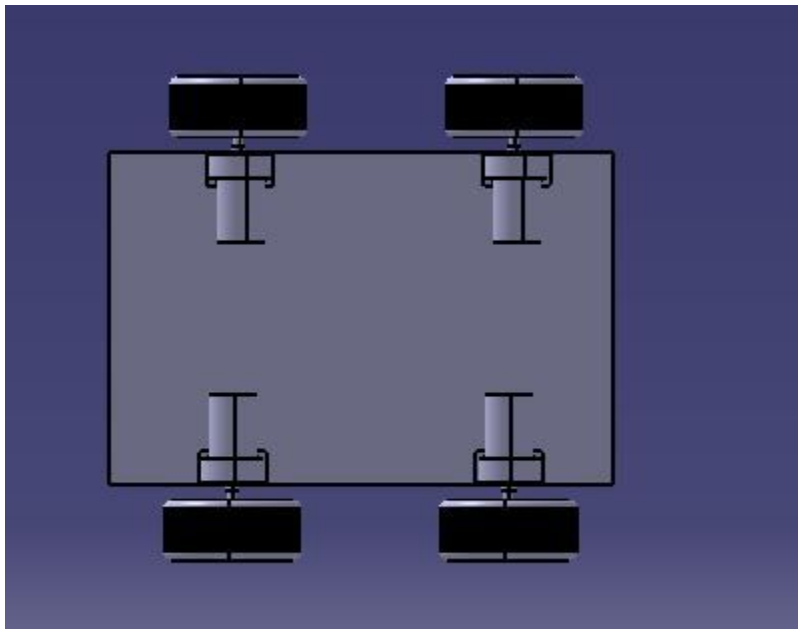
Isometric View



Side View



Bottom View



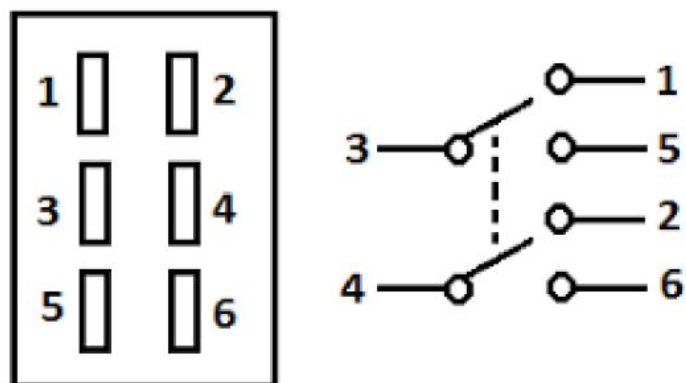
Remote Details:



A similar remote is needed to be built for this robot.

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:

The model developed is a working model. The chassis is made up of acrylic sheet in order to make the bot lightweight for a car race. Johnson motors used are of 300 rpm to achieve high speed and good accuracy. The robot is controlled with a wired remote having 2 DPDT switches.

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

Movement of the Bot :

Motion	Switch s1	Switch s2
Forward	Forward	Forward
Backward	Backward	Backward
Left	n/c	Backward
Right	Backward	n/c
360° Right	Forward	Backward
360° Left	Backward	Forward

Connections:

