RoboVR

SRB BOXING

About the game:

For boxing at RoboVR, participants have to develop 1 robot per team. The robot made should have a mechanism for punching/hitting the opponent's body.

Components and its Specifications:

Sr. No.	Components	Specifications
1.	Chassis	Aluminum Sheet (5mm thick)
2.	Johnson Motors (x4)	300 rpm
3.	DC motors (x2)	60 rpm
4.	Metal plate	Metal plate for holding gloves.
5.	Wheels(x4)	-
6.	Battery	5A, 12V
7.	Remote	With 4 DPDT switches
8.	Wires	-

Robot Details:

Robot Dimensions: 12'' *12'' * 2''(height)

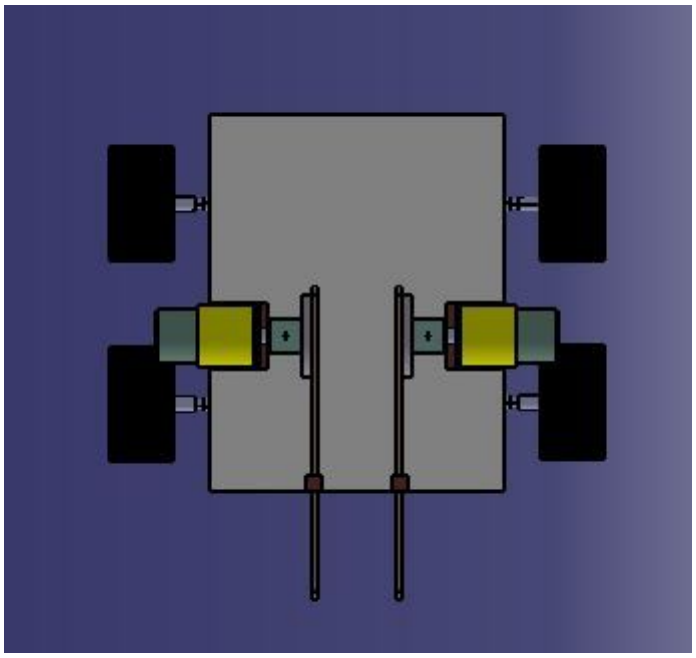
Robot Weight: 4kg

Robot Control: Wired

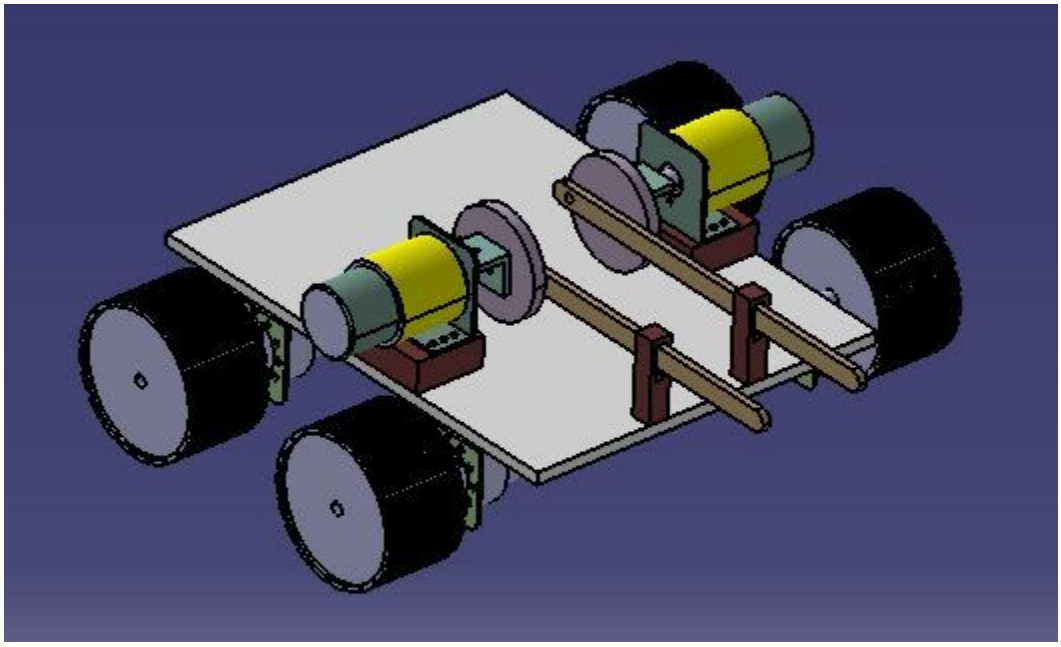
Robot Drive: 4 Wheel Drive

Mechanical Design:

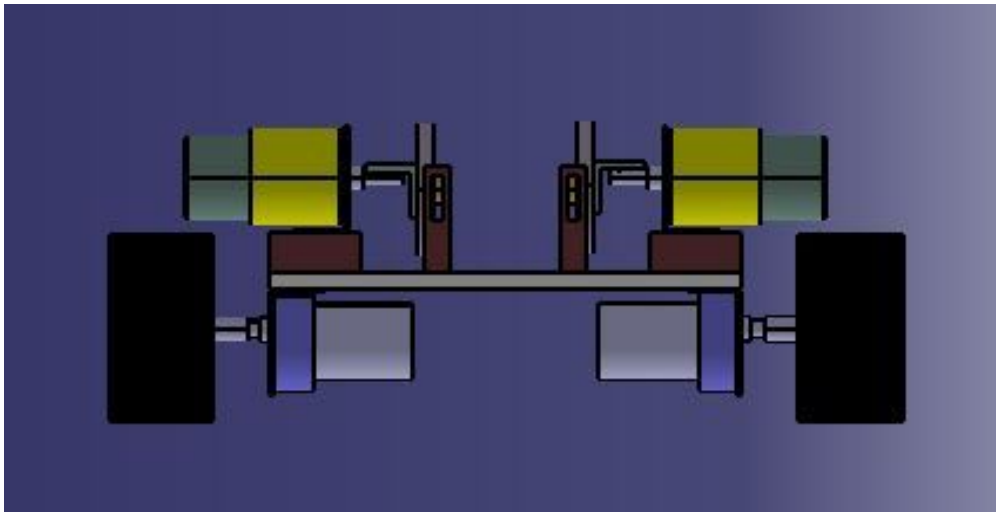
Top View



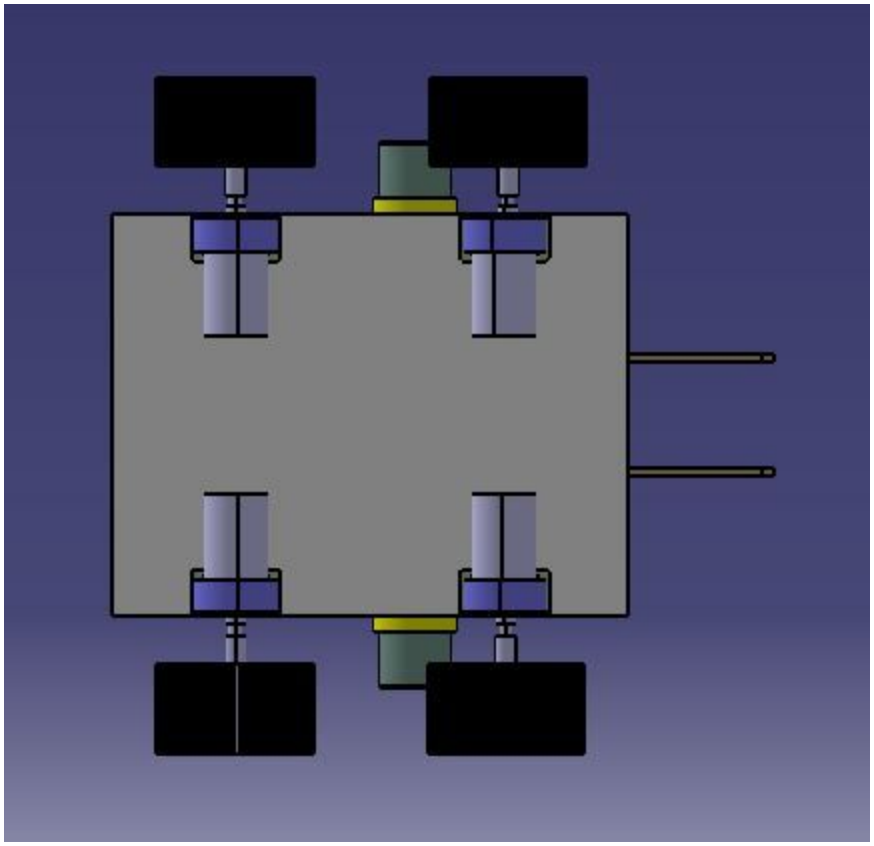
Isometric View



Front View



Bottom View



Working:

The model developed is a working model. The chassis is made up of wooden sheet in order to make the bot stiff. Jonhson motors used are of 300 rpm to achieve high speed and good accuracy. Two motors of 60 rpm are used for hitting mechanism. To metal plates are joint to the motors as shown in the figure to hold the gloves. The robot is controlled with wired remote having 4 DPDT switches (2 DPDT for movement of the bot and 2 DPDT for hitting mechanism).

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

Movement of the Bot :

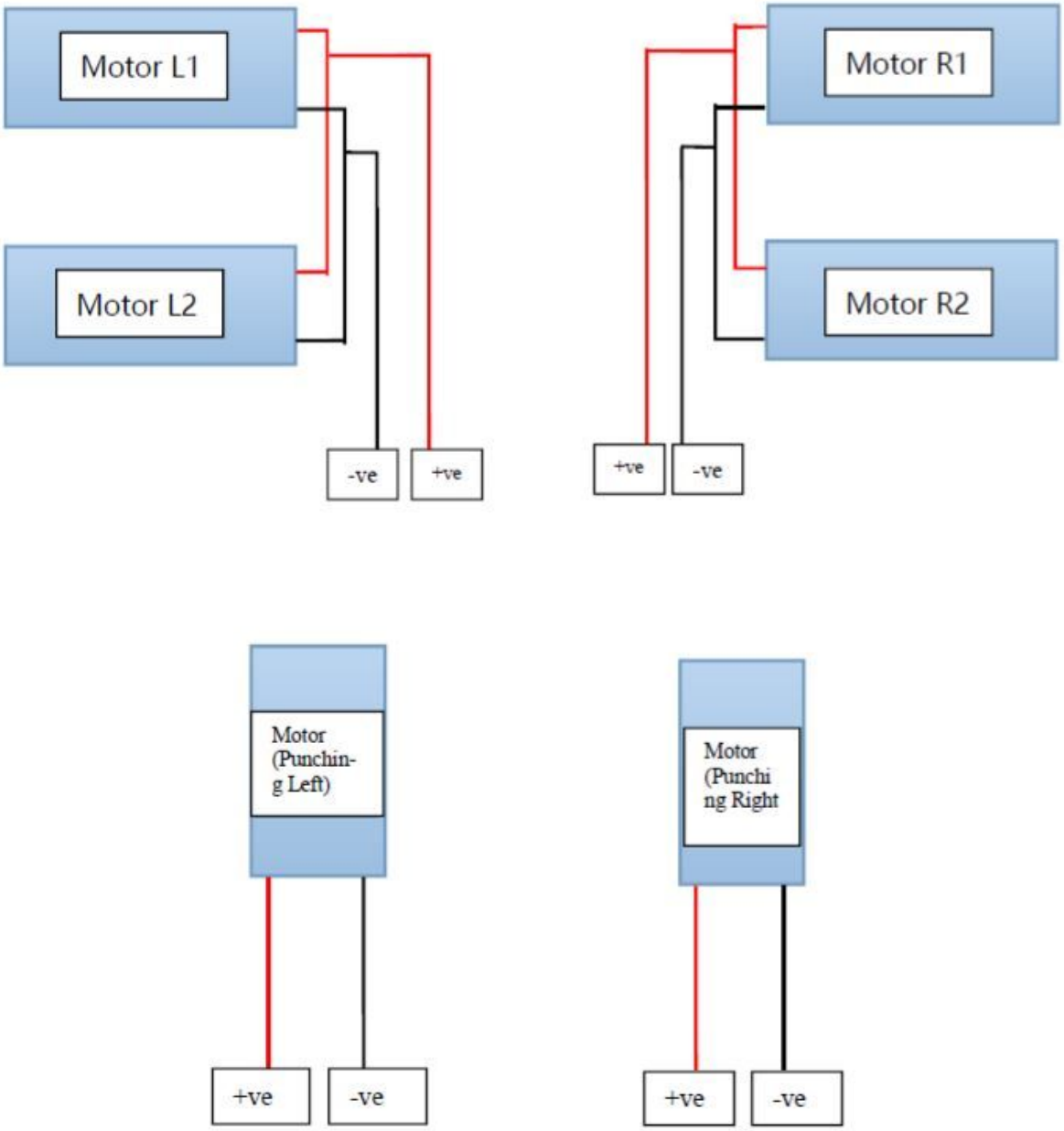
Motion	Switch s1	Switch s2
Forward	Forward	Forward
Backward	Backward	Backward
Left	n/c	Backward
Right	Backward	n/c
360° Right	Forward	Backward
360° Left	Backward	Forward

Movement of the arm (hitting mechanism) :

Movement of Left Arm	Switch B3
Clockwise	Forward
Anti-Clockwise	Backward

Movement of Left Arm	Switch B4
Clockwise	Forward
Anti-Clockwise	Backward

Connections:



Remote Connections: