

# ITSP Project

## Hand Gesture Controlled Car

Team A (Decide and Change Name)

Members:

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Idea:

The purpose of our project is to control a car using our hand gestures. We would be using image processing to get input from our hand gestures using a webcam, replacing the conventional remote. We will also be adding ultrasonic or IR sensors to make the car avoid collisions.

Plan of Action:

Week 1-2 (May 4 - May 18):

- (1) Learn image processing and ensure precise gesture recognition from webcam.
- (2) Buy all the electronic components require for the project.
- (3) Also learn the working of IR sensors as to how will collision be avoided using them.

Week 3 (May 19 - May 25):

- (1) Build the skeletal structure of the car i.e. the chassis along with the motors and the wheels.
- (2) Also, in this duration work on the image processing part i.e. how will the webcam recognise our hand gestures?

Week 4-5(May 26 – June 8):

- (1) Code the chip and map different hand gestures to the outputs to be produced by the car.
- (2) Also, add the IR/Ultrasonic sensors whichever may seem appropriate to the car.
- (3) Finish the car structure in this duration.

Last Week (June 9 – June 14):

- (1) Check the operability of the car and fix whatever problems we may face.
- (4) Add some finishing touches i.e. in the coding or any other area where required.

## Important Functions:

- (1) Collision Avoidance
- (2) Reverse motion

## Components:

- Ultrasonic sensors    680
- Camera                    500
- DC motors                125
- Battery                    400
- RC car (for parts)    500
- Arduino board        1000
- Motors (4\*80)        320
- PCBs

## Conclusion:

By the end of the project, we expect to learn image processing and the use of IR sensors. Also, we would to get to know how to code the chip for the gesture controlled car and mapping different hand gestures to various outputs.