ITSP 2014

Group members--

1. Akash Garg --130070060
2. Amit Laxman Waghmare --130070011
3. Manish Meena --130070017
4. Siddhant Dhabale --130070013

ITSP project ideas--

1. Spy Bird
2. Autonomous Driving Vehicle
3. Twin Copter

Spy Bird--

Implementation steps-

making the mechanical design of the bird.(10 days)
designing the wings as per the aerodynamic factors and completing wing motion.(20 days)
optimising the circuit to reduce the weight of the bird so as to minimize the mechanical movement of the wings.(1 week)
adding an additional circuit for image capturing.(3 days)

Components required and their price estimates--

mechanical model of the bird i.e the inorganic skeleton.
small mechanical components of the wings.
additional circuit components for image capturing and other tasks.
basic circuit components to control wing motion

Learning Outcomes--

to be able to optimise circuits with minimum number of components.
better understanding of the aerodynamics.
wing movoment of the flying birds which may also replicating wing movement of extinct species.
using various kinds of flying methods iimplementation.

Autonomous Driving Vehicle--

→ Implementation steps--

using infrared rays and detectors to detect position of the obstacles , measure their speeds .(15days)
#program to read the data and send the result to another program that dictates motion of the bot.(7 days)
circuits and programs to avoid obstacles and reach the destination.(10 days)
designing the body of the vehicle considering all the mechanical aspects so as to keep it as small as possible.(5 days)

→ Components Required and their price estimates--
#infrared sensors and detectors
#basic circuit of a bot
#chips to transform the program output to bot motion.
#mechanical components of the bot

→ Learning Outcomes--
understanding of the circuits and mechanical aspects of a vehicle.
#understanding the optimization of reaction time of vehicle
#reprogramming the movement of the vehicle during motion
#using the infrared detection technique of bats to understand the type of object in front

Twin Copter

→ Implementation Steps--
#making a mechanical design of the copter(3 days)
#creating the circuit to control the copter movement(5 days)
creating a normal twin copter that rises in the air.(3 days)
#changing the direction of the axis of the wing during the flight in such a way so that it is smoother and does not affect the position.(20 days)
#controlling the motion for the copter cum plane.(10 days)

→ Components Required and Price Estimates-
body design of a twin copter
#components to create the copter(wings , direction designer etc.)
#mechanical modification near the wings to change the axis of wings.
#circuit components to control the motion.
#infrared detector and infrared generator.

→ Learning Outcomes--
#effects of the wing motion during the flight
#all aspects of a twin copter motion
#circuit design of the copter.