PROJECT TITLE : 4WAY TRAFFIC LIGHT CONTROL USING ARDUINO

Project steps:

Phase 1: project definition and design thinking

Project definition:

Traffic lights are an integral part of the world's transportation systems. Over the years a number of different algorithms regarding traffic lights have been developed. The algorithm being used at any place for the purpose of controlling traffic takes into account of various factors, such as number of lanes, people that cross a certain road, etc. The most common usage of traffic lights is to control the flow of traffic, which means providing a steady flow for people to go about their daily business on the road. Traffic lights help reduce accidents by a large margin since they allow the flow of vehicles in only one direction at a time. Traffic lights also help in avoiding traffic jams. The most common traffic light pattern being used in the world today is a 4-way traffic control that accounts for pedestrians as well. This sort of pattern is used in main city blocks and squares since these possess both vehicular traffic as well as pedestrian traffic. Traffic lights have a universal color understanding that red light signals for the traffic to stop, yellow light serves as a transition light from going to stop and vice versa.

Design thinking:

Project objectives : To overcome traffic congestion caused by ineffective traffic management systems that are outdated and work on a predefined countdown.

IoT sensor design : Using Ultrasonic sensor to monitor the density of the vehicles.

Real time transit information platform : Raspberry Pi Camera serves as to capture Real time traffic images. These images are processed using Python Image Library (PIL).