

The Intelligent Traffic Control Light

Bruce, Omogbolahan

The project is designed to address the shortcoming observed in conventional traffic light control system which do not vary their time allocation based on the volume of traffic. The volume of traffic and its direction varies depending on the hours of the day resulting in delay with great adverse effects on the economic and human productivity. Those with time variation are centrally controlled. The project is rectangular, measuring 1.6m X 1m. LED were inserted along drawn lanes to indicate the traffic. The surface of the perspex was demarcated into four sections, the first, second and third sections indicating traffic on two lanes each controlled by the controller circuit which is located in the fourth section. The moving cars were represented by LED and stationary cars represented by toy cars with metal stripes that helps to lock and unlock the system, the working of the circuit was controlled by the PIC 16FAAA. Once the passive infra-red ray sensor perceives the presence of vehicles indicating traffic, it sends signals to the PIC which decodes the signals and controls the traffic appropriately. The processor is programmed to display traffic control light sequences for the three lanes traffic junction. As the processor is outputting the sequences and at the same time checking the traffic pressure sensor, any lane that is not engaged is jumped over to another lane. This ensures that time is not wasted on the empty lane. When all the switches are engaged, the traffic light goes on periodic mode. It is also programmed to recognise emergency vehicles and give them priority access. The project has demonstrated that traffic light can be made to be intelligent and therefore controls traffic more efficiently.