Embedded System Project

- **<u>System Layers:</u>**
  1. **MCAL:** In this layer, we have drivers based on the chosen microcontroller which is AVR ATMEGA 32
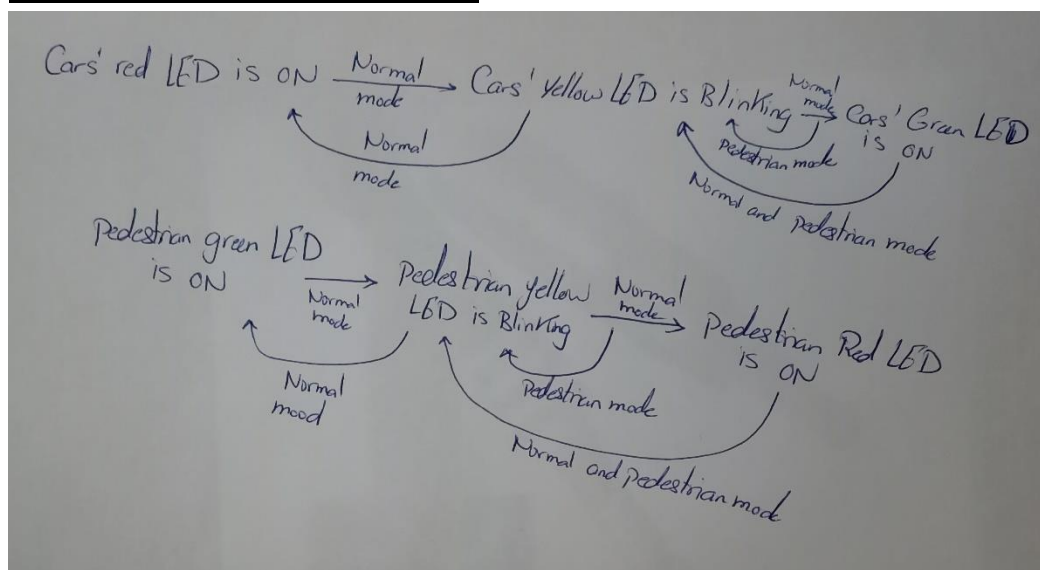   - Each driver contains:
       1. **Configuration.h:** We choose the available moods which we will use by the define macros.
       2. **Private.h:** It contains the defines of the registers of the microcontroller and any other macros which may be used.
       3. **Interface.h:** In this file we write the prototypes of the functions
       4. **Program.c:** In this file we make a definition for the functions which were written in the interface file.
  2. **HAL:** In this layer we write the drivers which will be used to control the hardware components,
  3. **Application:** In this layer we write the source code of the application which is required from us by using HAL functions.

- **<u>System State Machine:</u>**

This system flow charts clarifies the traffic moods (Normal & pedestrian).

- ## <u>System Constraints:</u>

  In our system, the constraints made by the push button which is pressed by the pedestrians. When this button is pressed many times or someone press long press, the action will be taken only one time.