

BRIGOSHA TECHNOLOGIES

# FINAL PROJECT



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# INTRODUCTION

The project is based on Automotive Control functions in vehicle. The communication is going to be happen between main Instrument Cluster (INC) and other nodes (SRS, IMM, SEA, CRC, WIW, CEL).

On bases of messages transmitted by other nodes the main node have to take corresponding action, all sub nodes consists perticular messages with message ID.

Warning lamps are also present to show the status of each and every node. Based on message priority lamps should blow in diffrent patterns, e.g for High priority message lamp should always in «ON» state.

# ARCHITECTURE

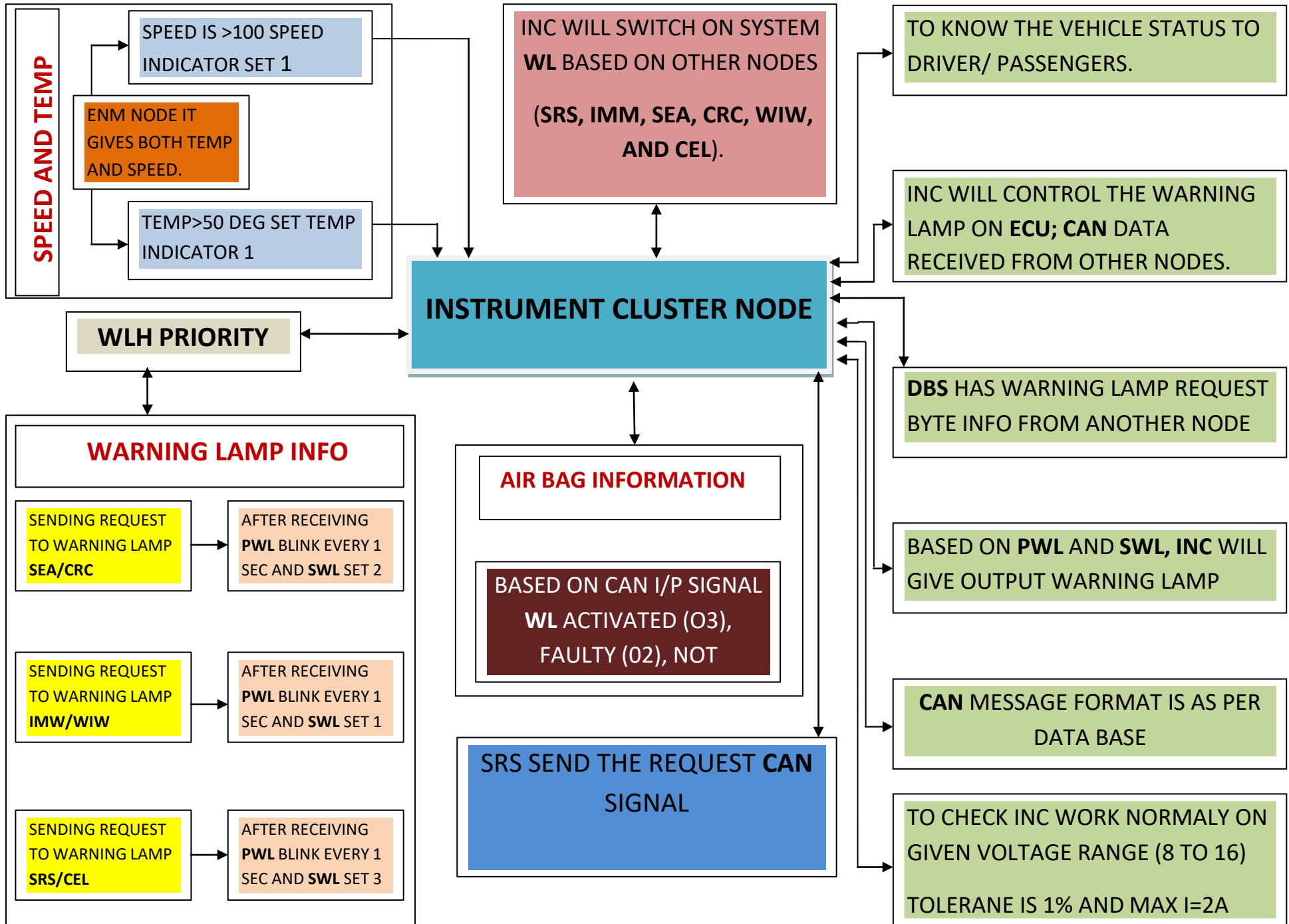
INSTRUMENT CLUSTER NODE is the main node in architecture all other nodes (SRS, IMM, SEA, CRC, WIW, CEL) are connected to this node or depend on this node.

Based on requirements we implement the architecture.

ARCHITECTURE



# ARCHITECTURE



# DESIGN

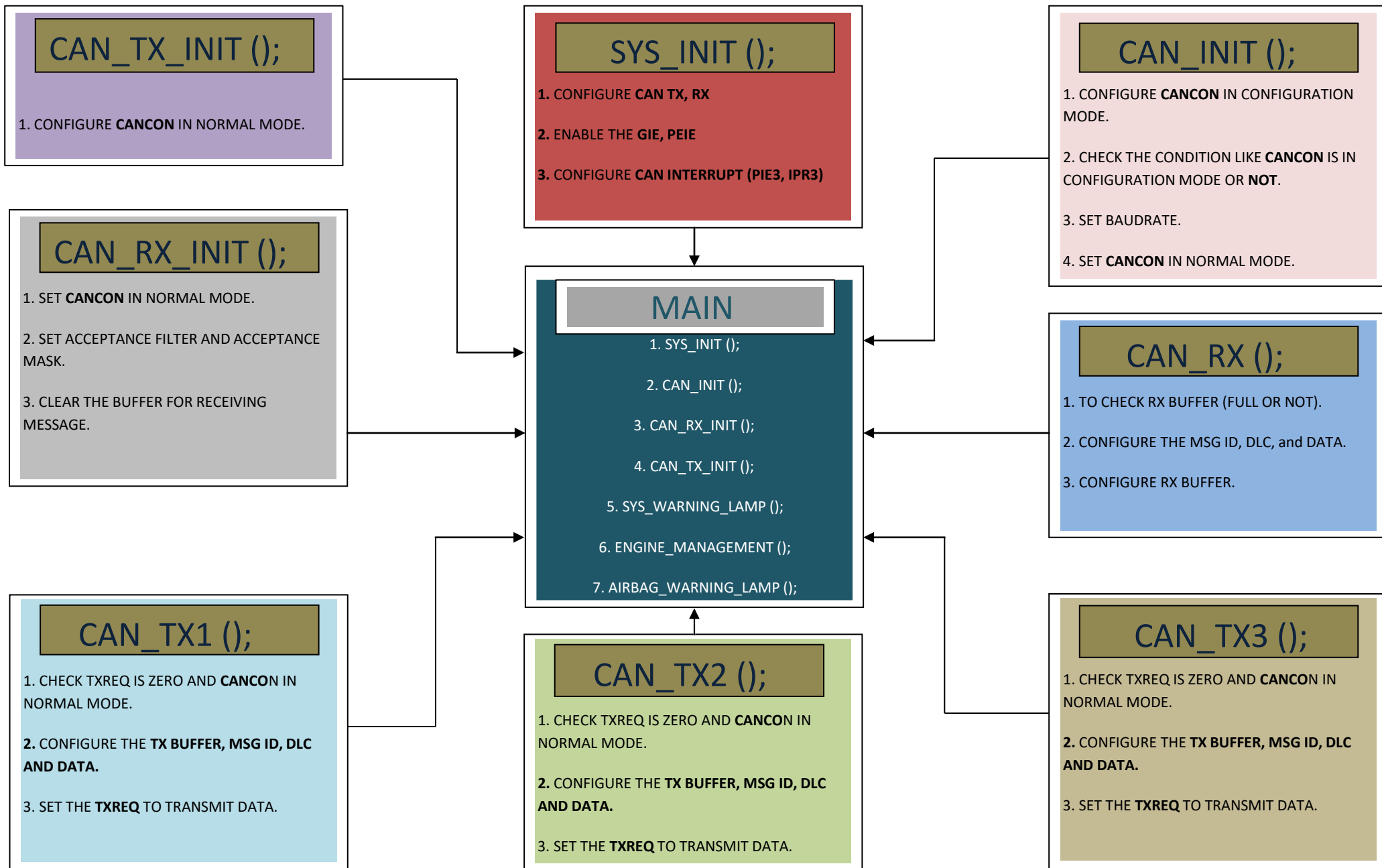
Before going to direct implement the code we must need Design of the software .

Considering to this we implemented a Design.

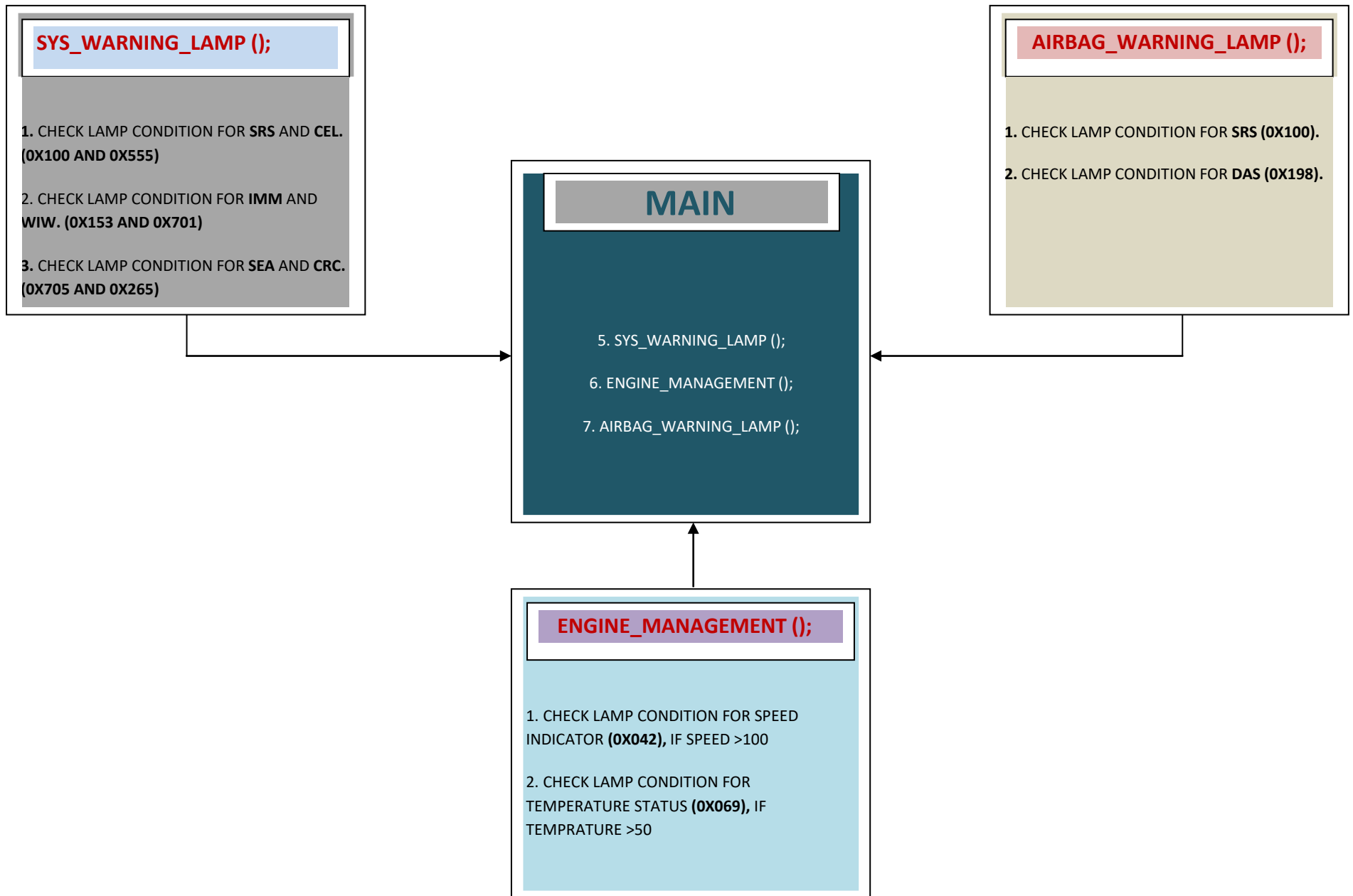
We have a main section in our software which consists the following functions,

1. SYS\_INIT ();
2. CAN\_INIT ();
3. CAN\_RX\_INIT ();
4. CAN\_TX\_INIT ();
5. SYS\_WARNING\_LAMP ();
6. ENGINE\_MANAGEMENT ();
7. AIRBAG\_WARNING\_LAMP ();

# DESIGN



# DESIGN





# CODING

While developing any software Architecture, Design, Flow Chart are the main things which tells us that what we have to do actual in coding.

Coding is the main part of SDLC (Software Development Life Cycle).

Following are the main functions in our coding.

1. `SYS_INIT ();`
2. `CAN_INIT ();`
3. `CAN_RX_INIT ();`
4. `CAN_TX_INIT ();`
5. `SYS_WARNING_LAMP ();`
6. `ENGINE_MANAGEMENT ();`
7. `AIRBAG_WARNING_LAMP ();`

# CODE PART [FOR REFERENCE]

```
void can_init()
{
    CANCON = 0x80;                /* set new mode configuration mode */

    /* Wait untill desired mode is set */
    while (CANSTAT != 0x80);      /*1000 for Configuration mode 000 = No interrupt

    BRGCON1 = 0xC1;                /* 1100 0001 */
    BRGCON2 = 0xAE;                /* 1010 1110 */
    BRGCON3 = 0x45;                /* 0100 0101 */

    CIOCON = 0x20;                /*CAN I/O CONTROL REGISTER */

    /* Enter CAN module into Normal mode */
    CANCON = 0x00;                /* 0000 for normal mode

}
```

# RISKS IN SOFTWARE

Following are some risks in software development,

1. Code issue
2. Aggressive Deadlines
3. Unmet Expectations
4. Low Productivity
5. Budget Issue
6. Poor Risk Management

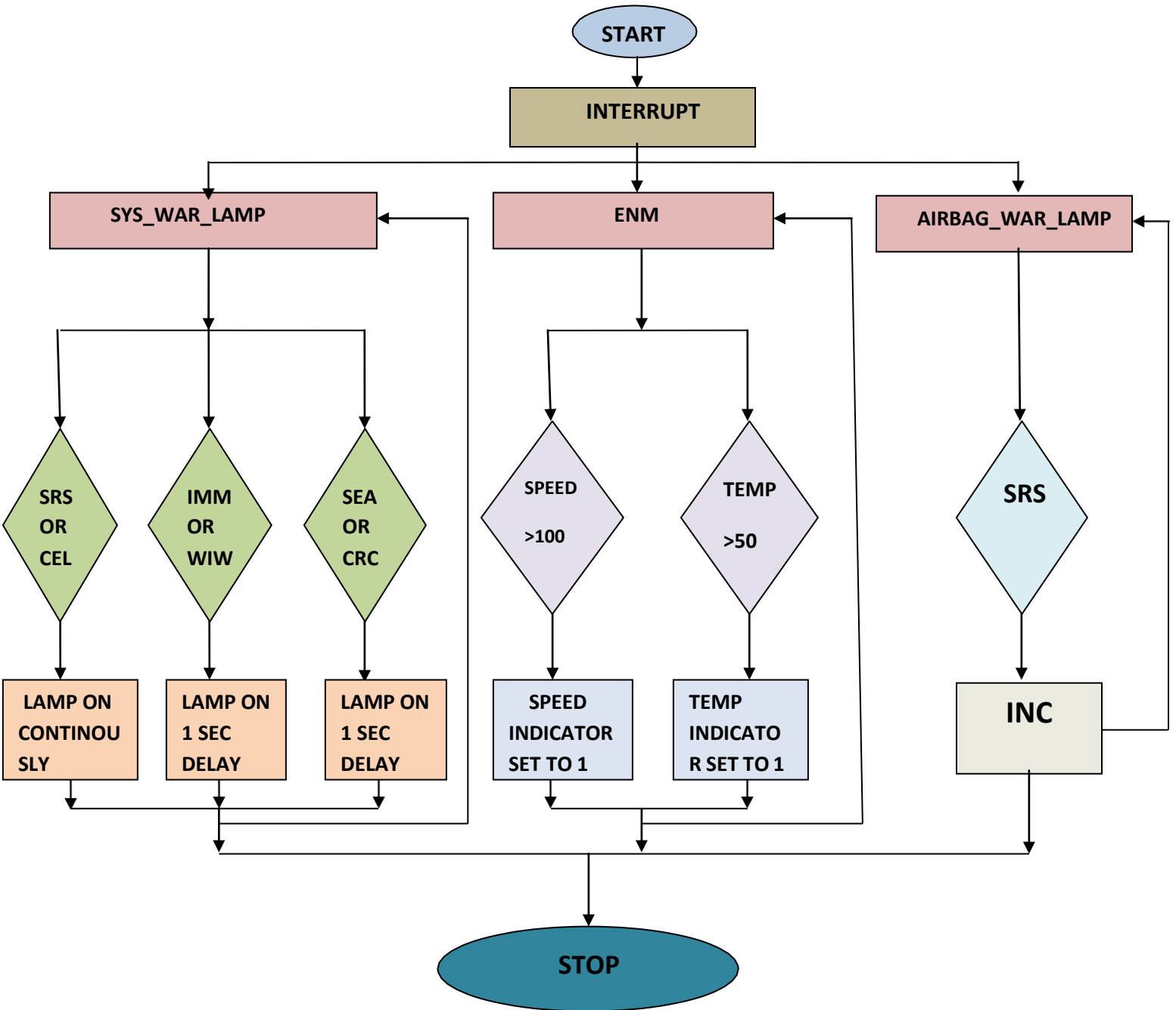
# FLOW CHART

Flow chart is also a part of design, by flow chart we can easily understand what is going to be happen in software.

And before going to coding part if we see the flow chart then we can get clear idea about coding.

Flow chart consist all the stages of software that means flow from start of programming to the end.

# FLOW CHART



# TEST CASE/TEST REPORT

As we studied in V module for every step the tests are required it helps us to know the bugs earlier.

Verification is the part in which we verify whether Requirements are matching our SYRS, SRS, HRS etc.

Validation is the part in which we can check the Design, Architecture, development and Coding whether they are matching the requirements or not.

While performing any test the Test Environment is must.

By considering all this points we done with a simple test Report.