A screenshot of a computer

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**Pressure Detector Project Report**

**Mastering Embedded System Online Diploma**

[**www.learn-in-depth.com**](http://www.learn-in-depth.com)

**First Term (Final Project 1)**

**Eng. Fawzy Mohamed Zaki**

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1)Case Study

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-Assumptions :

1-The pressure Sensor will never fail

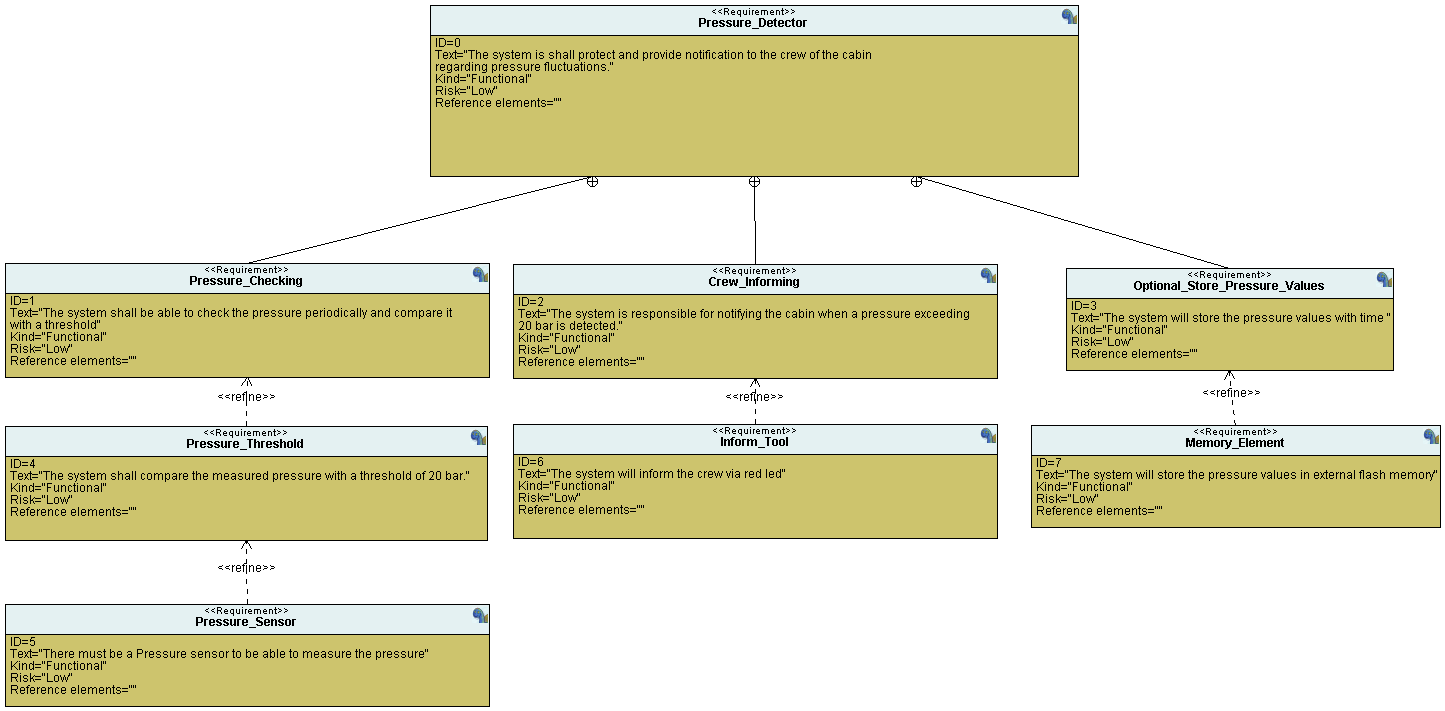
2-The alarm (led) will never fail

3-There MCU will always supplied with power

2) Method

This project will be done using V-Cycle method

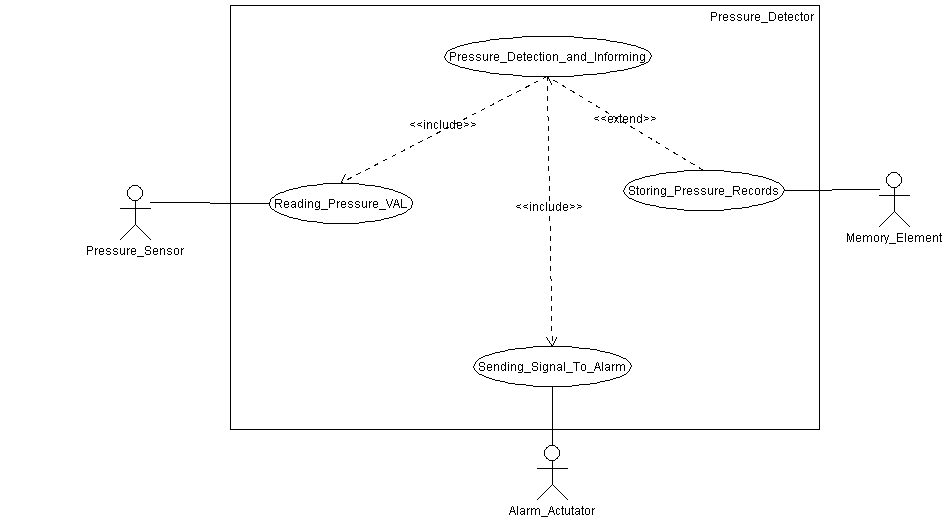
3)Requirements Diagram



4) Space Exploration

This project will be implemented using Single MCU which is STM32F103C6 which contain ARM-Cortex-M3

5)System Analysis

-Use Case Diagram

-Activity Diagram

A diagram of a flowchart

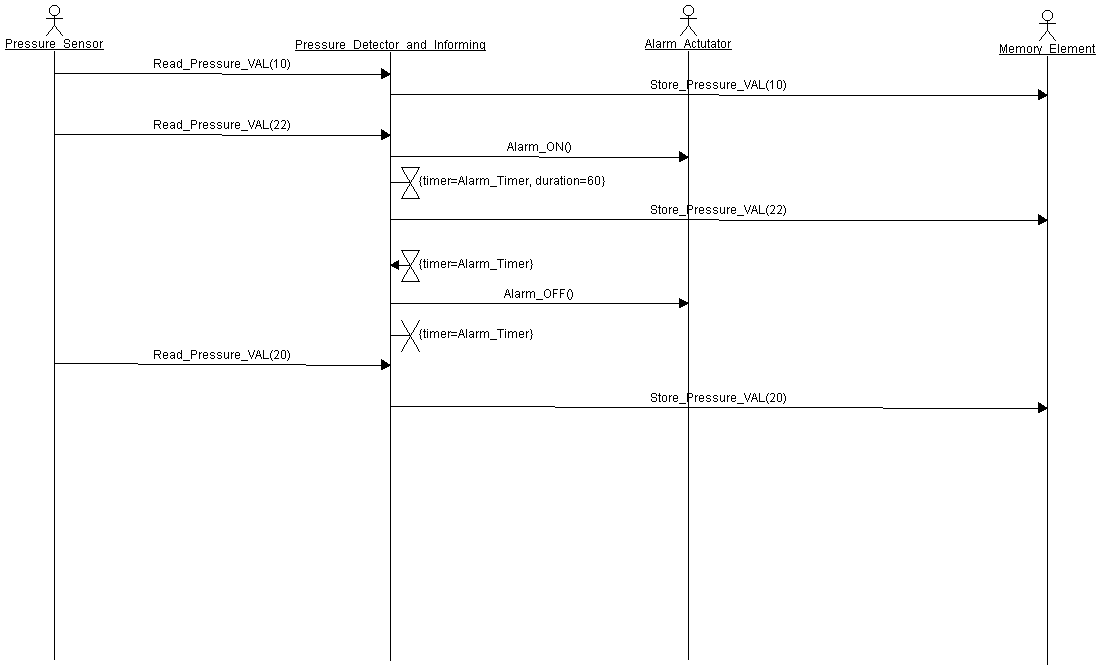
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-Without Debug Information

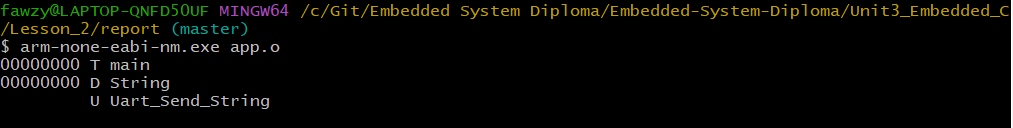
-Sequence Diagram

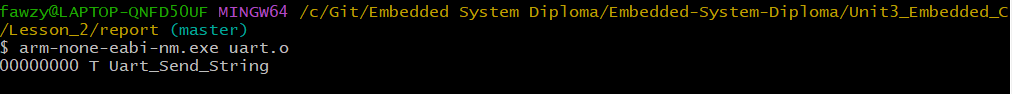


2)Navigate Startup file using objdump.exeA computer screen with white text

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3)Navigate Symbol tables using nm.exe

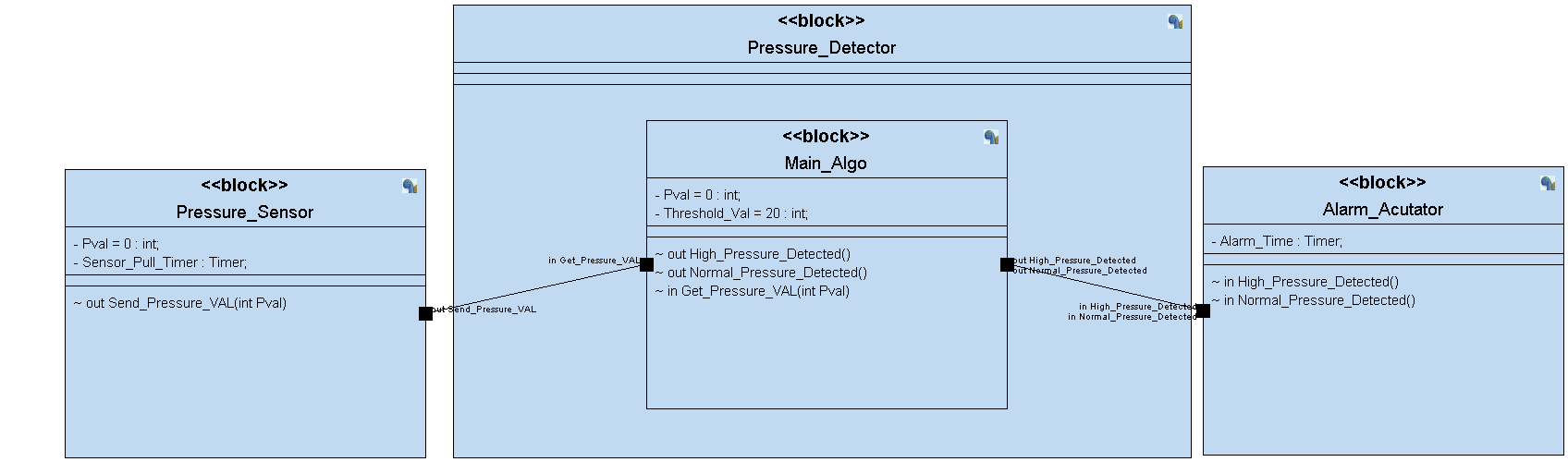




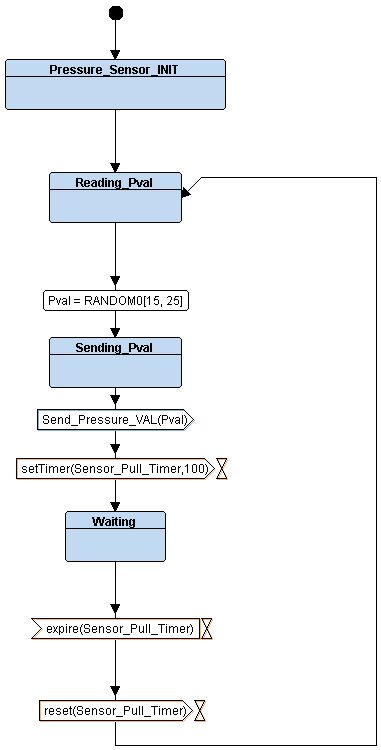
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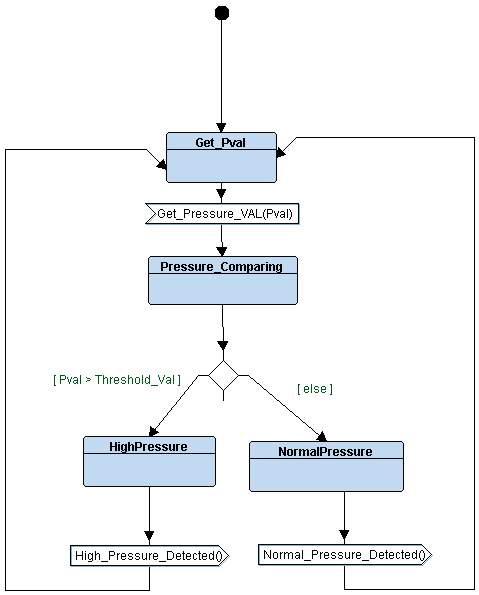
6)System Design

-Block Diagram

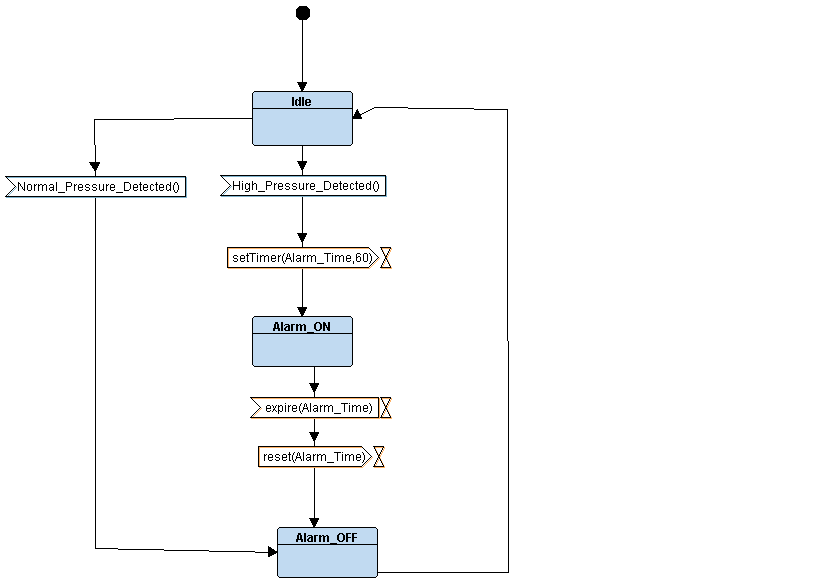
-Pressure Sensor State Machine



-Main\_Algo State Machine



-Alarm\_Acutator State Machine



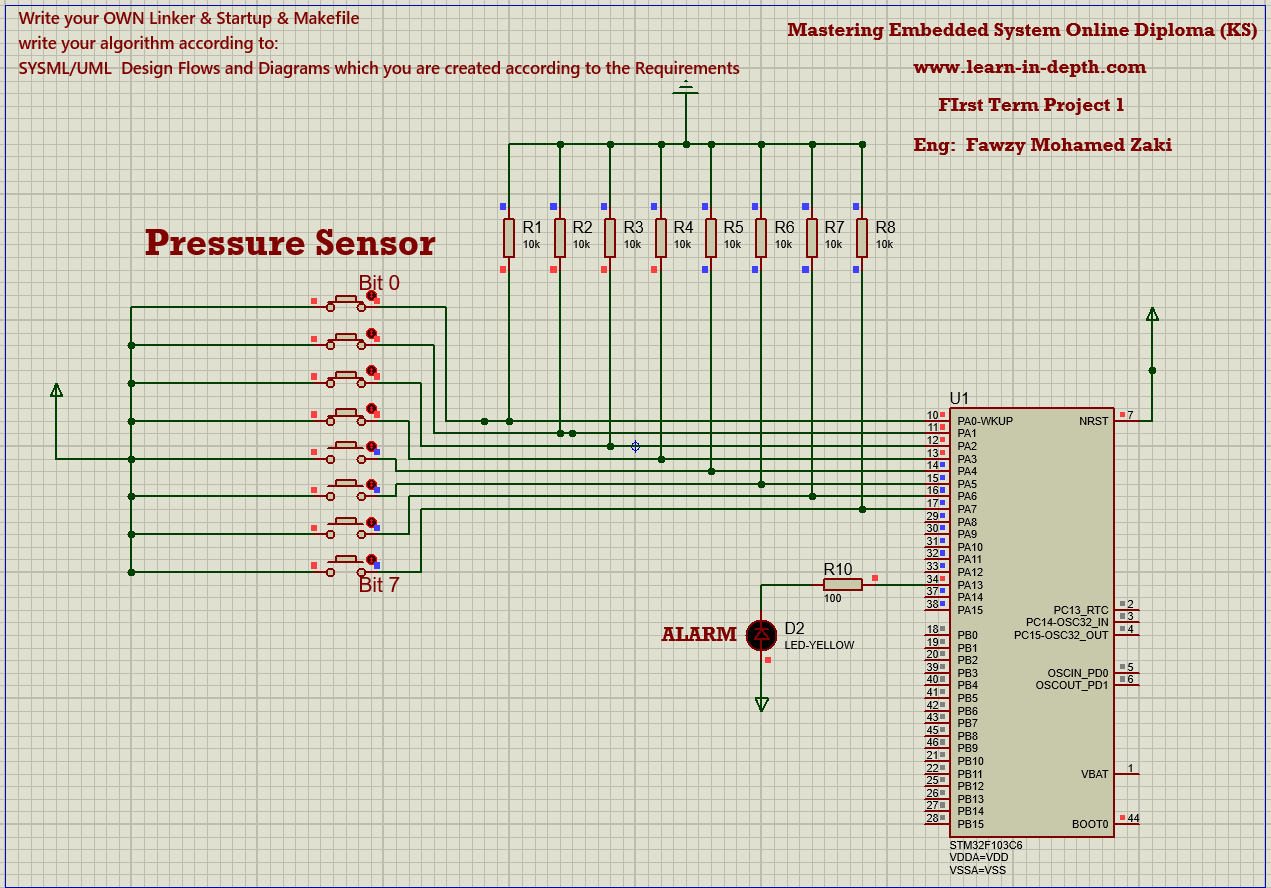
7) Logic Check

A diagram of a project

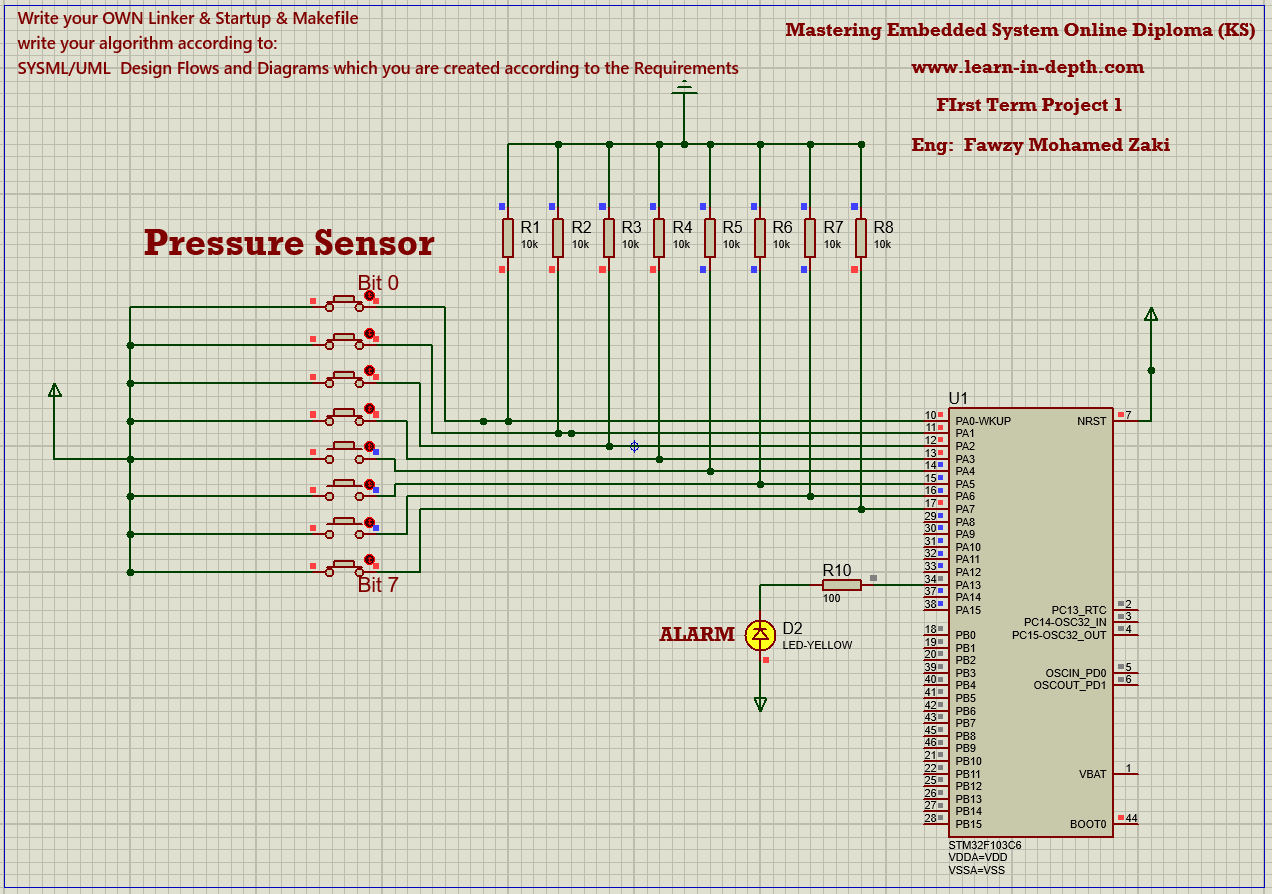
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A diagram of a project

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-Case 1: input 00001111 (15 bar)

-Case 2: input 10001111 (143 bar)



9)Symbol tables

-Pressure\_Sensor.o

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-Main\_Algo.o

A screen shot of a computer program

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-Alarm\_Acutator.o

A screen shot of a computer

Description automatically generated

-Main.o

A computer screen shot of a program

Description automatically generated

-Led\_Driver.o

A screen shot of a computer

Description automatically generated

-Final\_Elf

A screenshot of a computer program

Description automatically generated

10)Navigate Sections of object files

-Pressure\_Sensor.o

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-Main\_Algo.o

A computer screen shot of a black screen

Description automatically generated

-Alarm\_Acutator.o

A computer screen shot of a black screen

Description automatically generated

-Main.o

A computer screen shot of a black screen

Description automatically generated

-Led\_Driver.o

A computer screen shot of a computer

Description automatically generated

-Final\_Elf

A computer screen shot of a black screen

Description automatically generated