Mastering embedded systems Online Diploma

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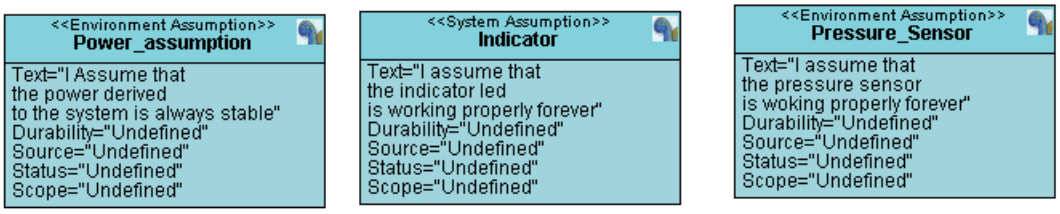
First Term (Final Project 1)

Eng. Mostafa Ahmed ElFallal

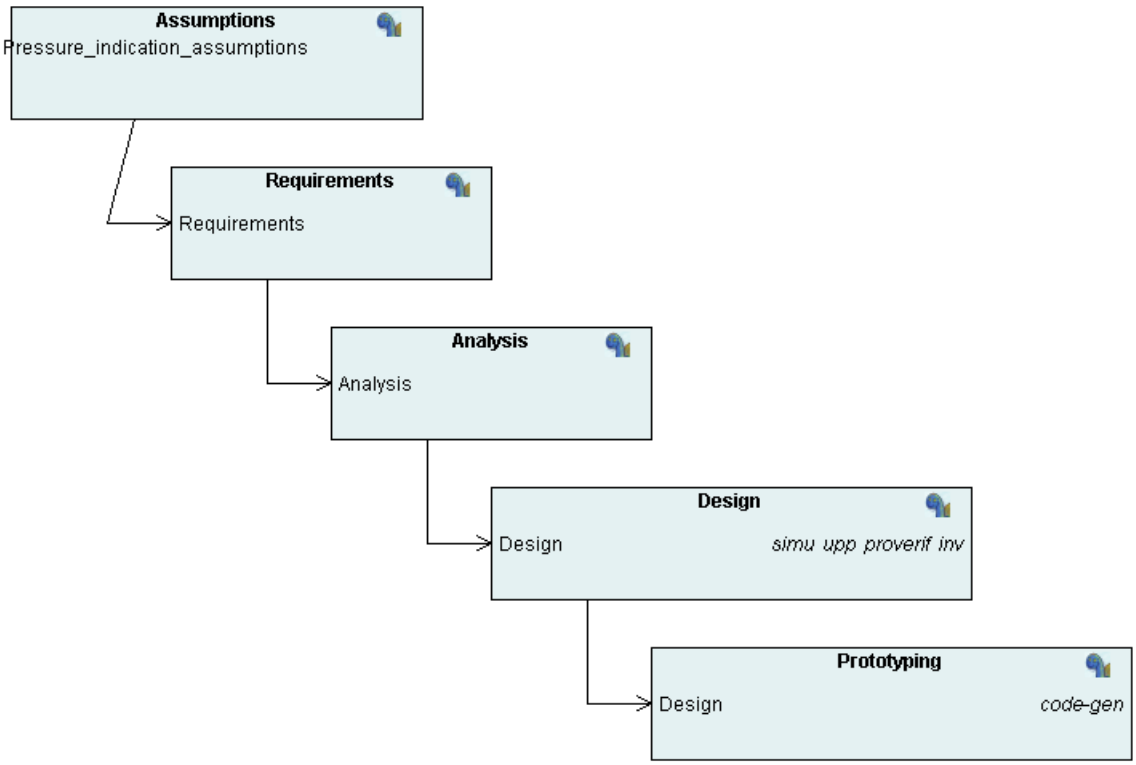
My Profile :

mostafaelfallal90@gmail.com (learn-in-depth.com)

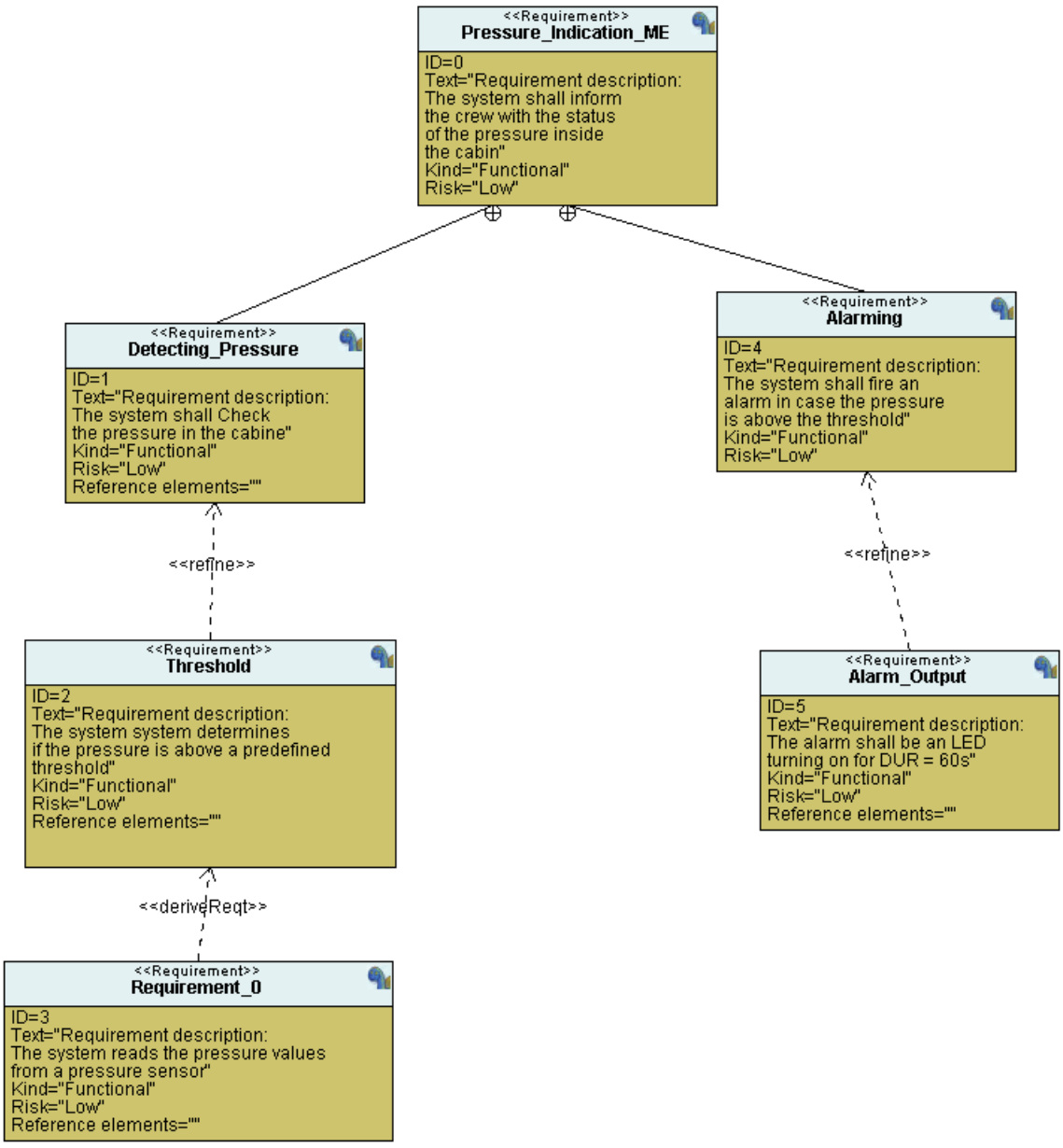
Assumptions :



Methodology :

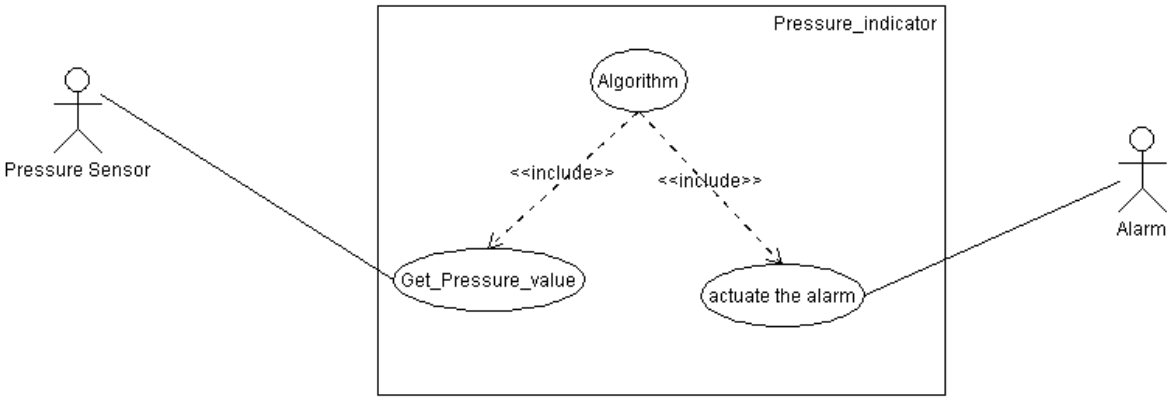


Requirements :

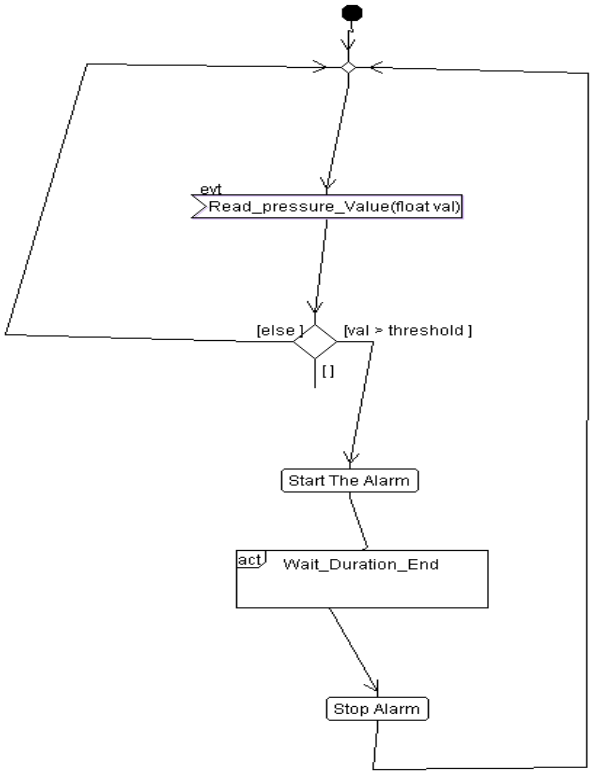


System Analysis :

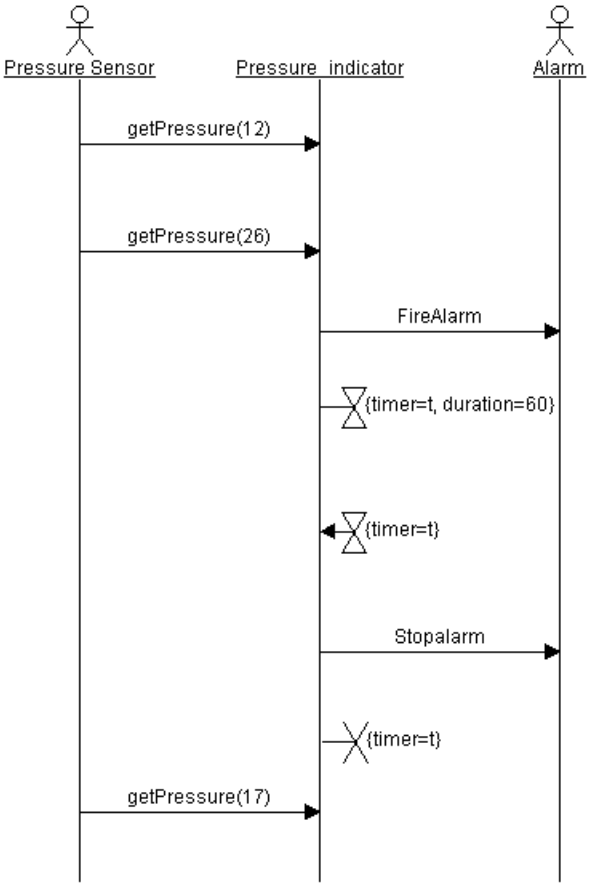
Use Case diagram :



Activity diagram :

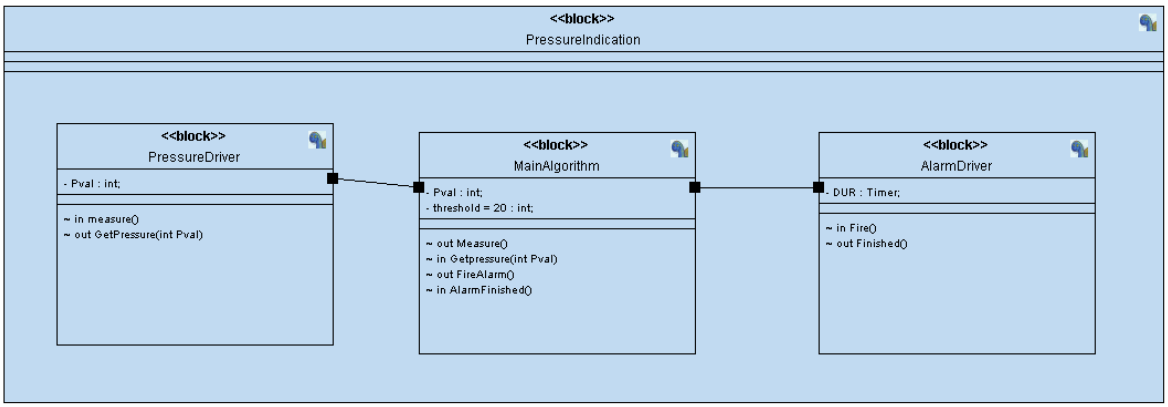


Sequence diagram :

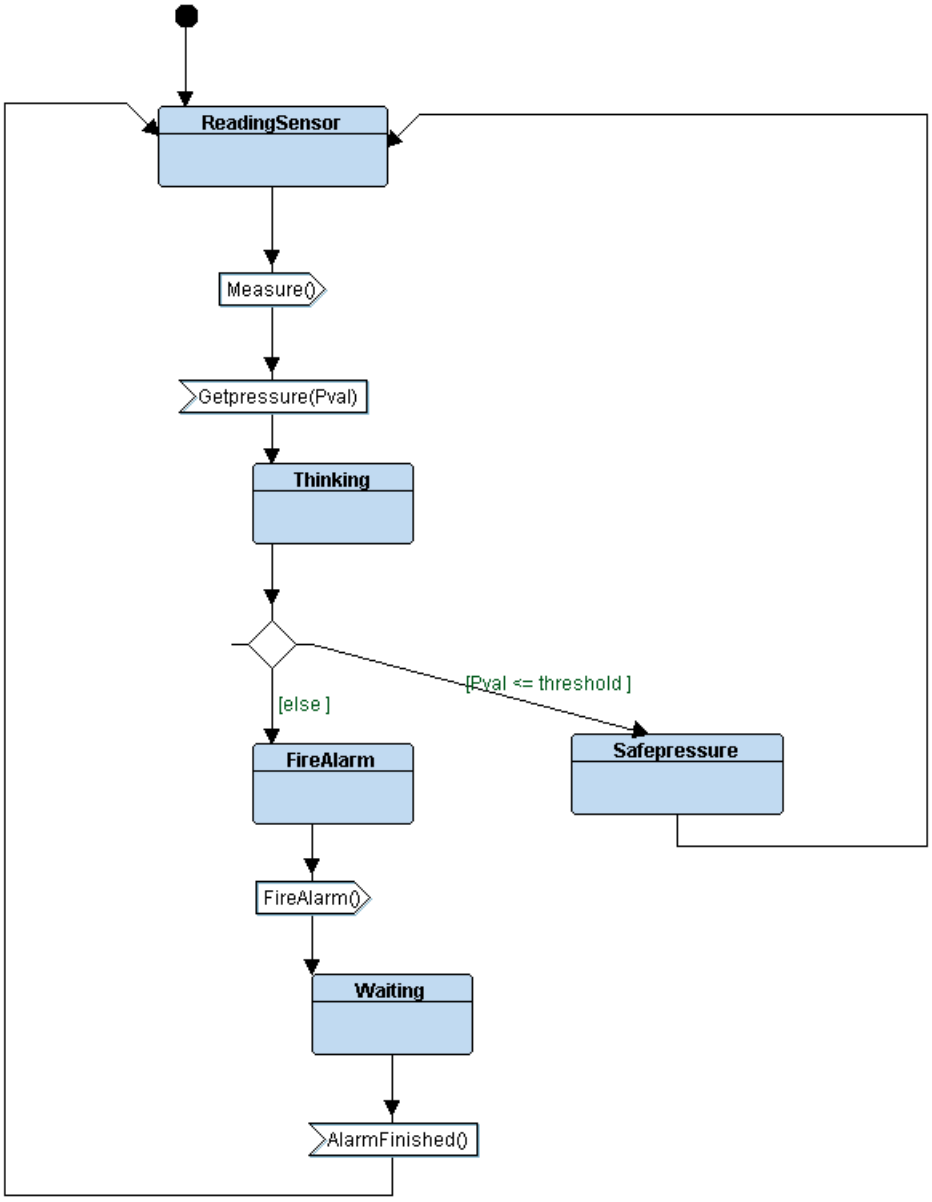


System design :

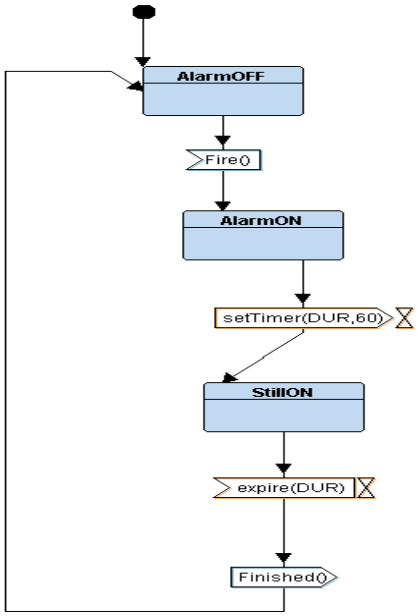
Block diagram :



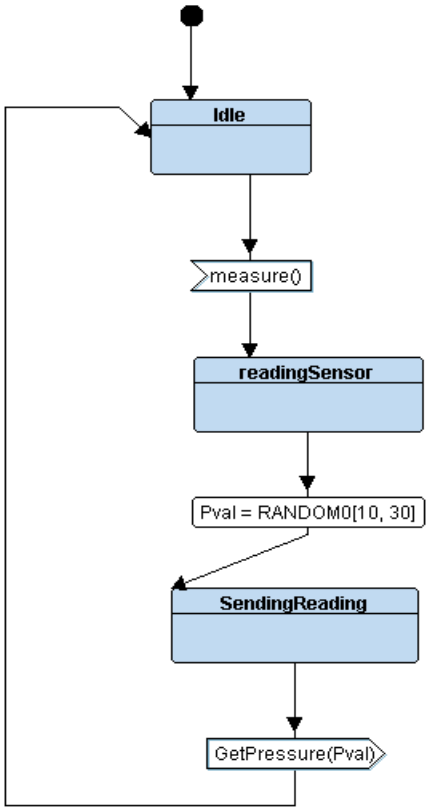
Main Algorithm :



Alarm Driver :



Pressure Driver :

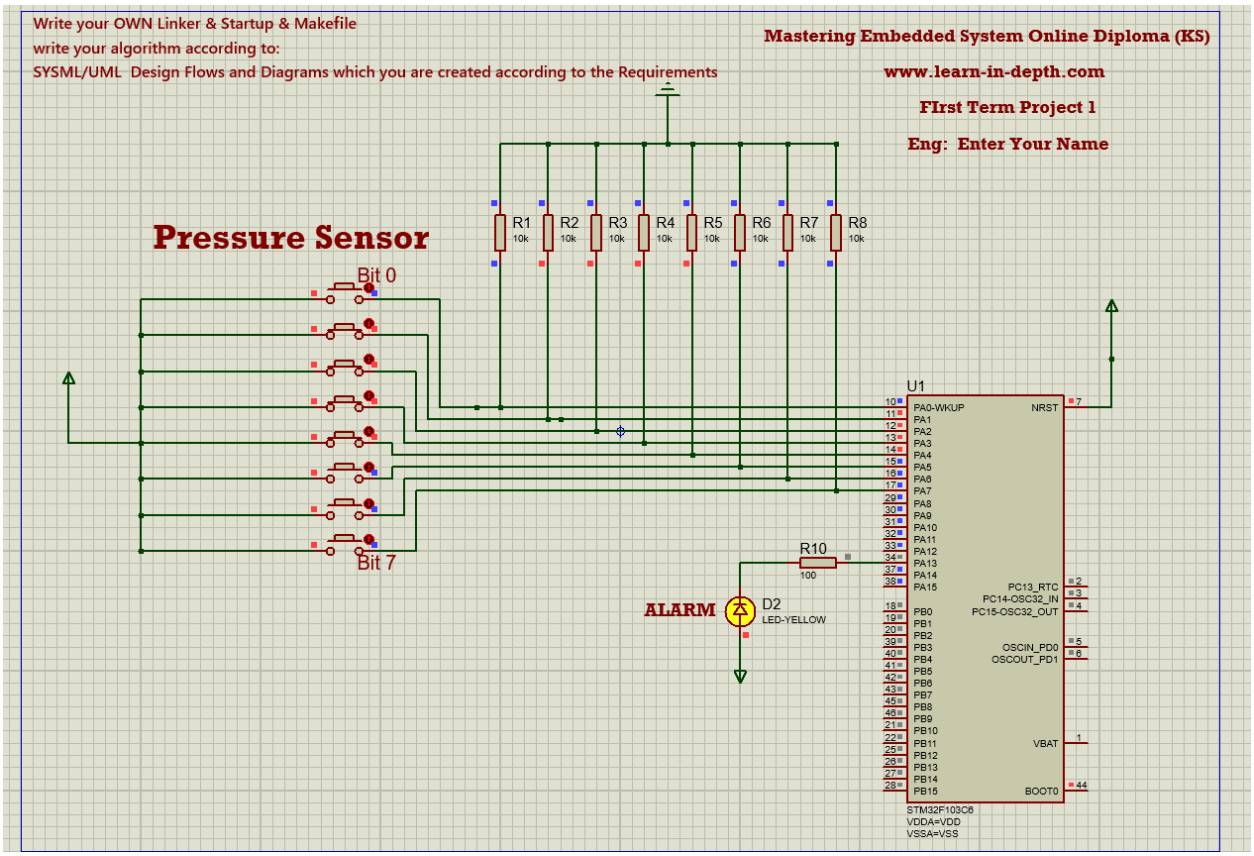


Using Makefile for building project

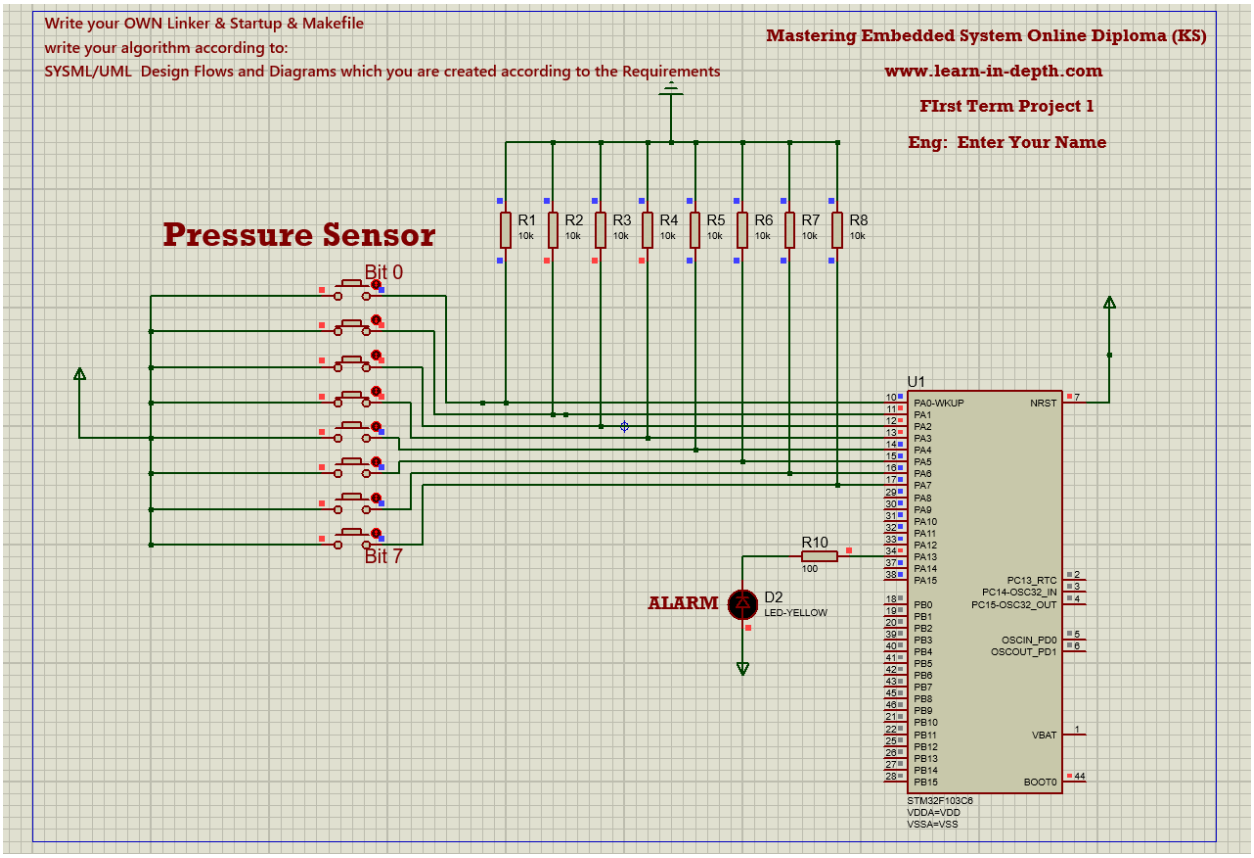
```
Darsh@Mostafa-ElFallal MINGW64 /d/Embedded-systems/K.S. Course/materials/First T
erm exam/driver
$ make -s
==============compiling the Alarm.c to get Alarm.o file===============
==============compiling the algorithm.c to get algorithm.o file===============
==============compiling the main.c to get main.o file===============
==============compiling the PressureDriver.c to get PressureDriver.o file===============
==============compiling the startup.c to get startup.o file===============
==============linking to get the lec4.elf file===============
==============extracting the get binary file :lec4.bin===============
==============Done===============

Darsh@Mostafa-ElFallal MINGW64 /d/Embedded-systems/K.S. Course/materials/First Term exam/driver
$
```

Proteus :

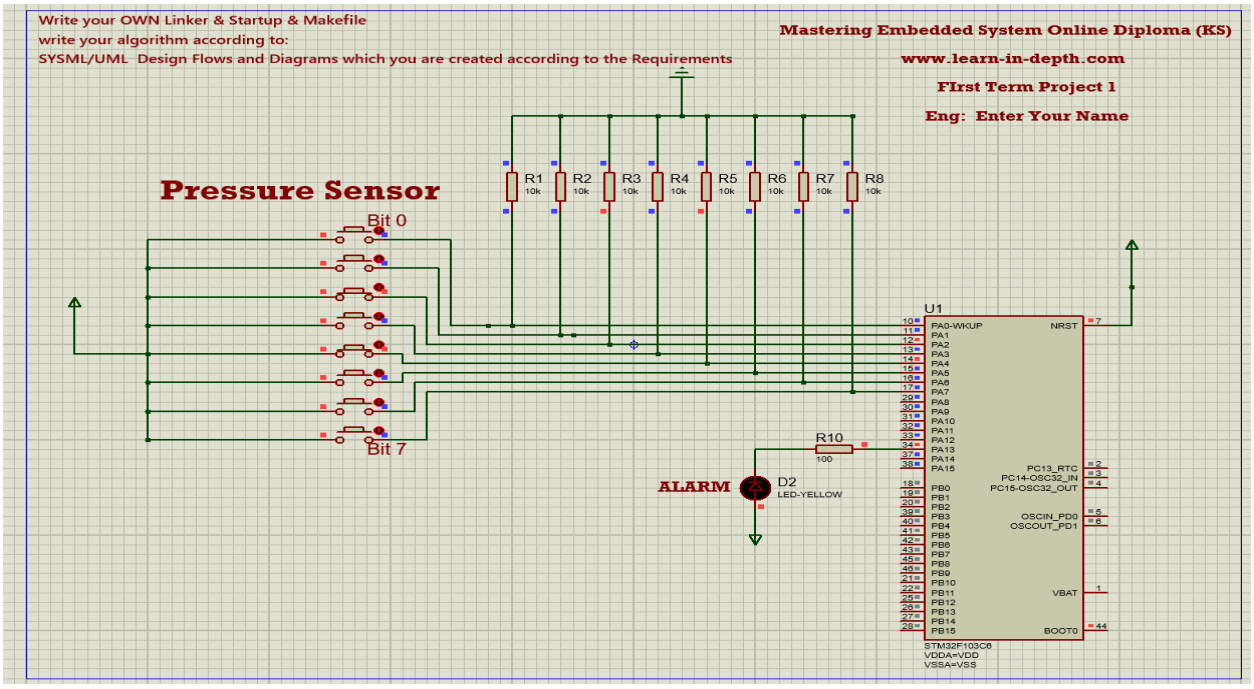
At 30 bars as input > 20:



At 14 bars as input < 20 :



At exact 20 bars (still not greater than 20) :



For full video for using the system :

https://drive.google.com/file/d/1QLfYc-awMDE0p9snuvuzCfJJZ2pbeXsY/view?usp=sharing