Mastering Embedded Systems Online Diploma

First Term Final Project 1

**Pressure detection**

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**Problem description**

A client expects you to deliver the software of the following system specifications (from the client):

1. A pressure controller informs the crew of a cabin with an alarm when the pressure exceeds 20 bars in the cabin.
2. The alarm duration equals 60 seconds.

**Requirements Diagram**

A diagram of a computer program

Description automatically generated

**Activity Diagram**

A diagram of a system

Description automatically generated

**Sequence Diagram**

A diagram of a flowchart

Description automatically generated

**Block Diagram**

A screenshot of a computer

Description automatically generated

**Pressure sensor state Diagram**

A diagram of a process

Description automatically generated

**A screenshot of a computer program

Description automatically generated**

**Main algorithm state Diagram**

A diagram of a pressure monitoring system

Description automatically generated  
A computer screen shot of a code

Description automatically generated

**Alarm controller state Diagram**

A diagram of a computer program

Description automatically generated

A screenshot of a computer program

Description automatically generated

**Alarm actuator state Diagram**

A diagram of a system

Description automatically generated  
A screenshot of a computer program

Description automatically generated

**Simulation results**

A computer screen shot of a computer program

Description automatically generatedPressure = which is less than the threshold 20

Pressure = which is higher than the threshold 20

A computer screen shot of a diagram

Description automatically generatedThe alarm stays on for 1 minute then turns off if the pressure becomes less than 20.