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**Case study**

In this report, a design work for controlling pressure inside the aircraft cabin will be discussed by using a special sensor to measure atmospheric pressure, and the work that we will specialize in doing in that system will be determined based on the following Assumptions:

* The controller setup and shutdown procedure are not modeled.
* The controller maintenance is not modelled.
* The pressure sensor never fails.
* The alarm never fails.
* The controller never focuses on the power cut.

Versioning:

* The keep track of measured value option is not modeled in the first version.

**Method**

We have chosen the system V-cycle as it will provide us with the following factors:

* Easy to set up.
* Productivity improvement.
* Time saving.
* Money saving.
* Improvement of the quality of the delivered product.

**Requirements**

Graphical user interface, application

Description automatically generatedGraphical user interface, application, table

Description automatically generated

**System analysis**

* **Use case diagram.**

A picture containing diagram

Description automatically generated

* **Activity diagram.**

A picture containing graphical user interface

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* **Sequence diagram**

Graphical user interface, application, Word

Description automatically generatedGraphical user interface, application, Word

Description automatically generated

**System design**

Diagram

Description automatically generated

Graphical user interface

Description automatically generated

Graphical user interface

Description automatically generated

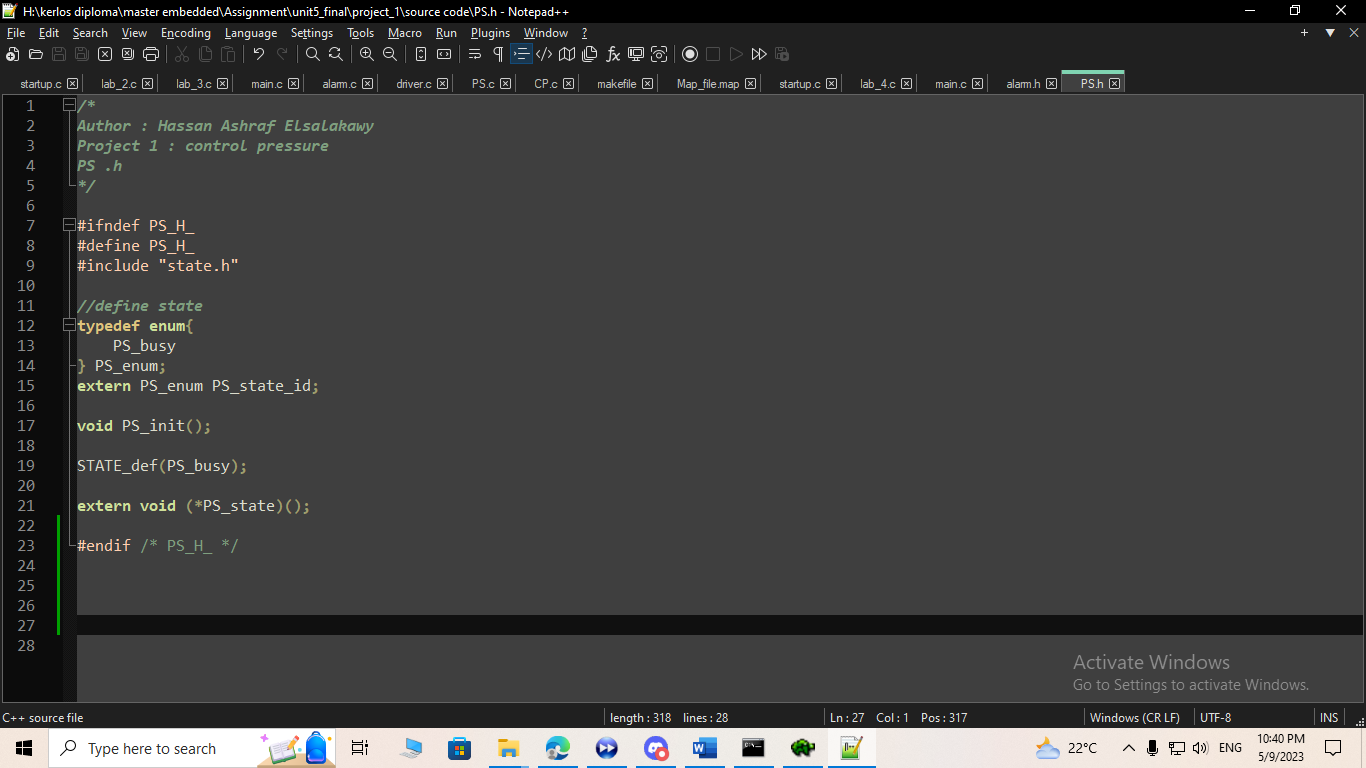
Graphical user interface, application, Word

Description automatically generated

**Implementation code**

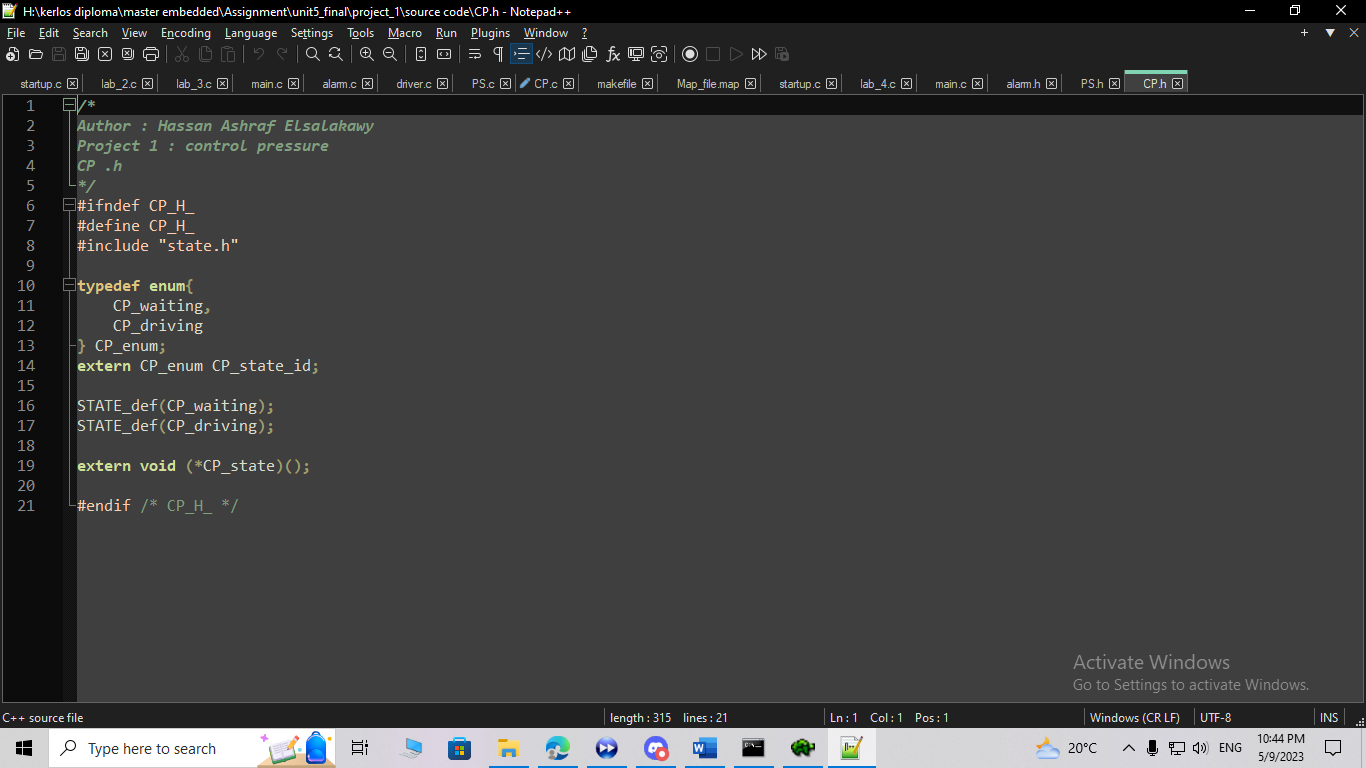
* **(**[**.c) &(.h) files**](#_Toc109568924)
* A screenshot of a computer

  Description automatically generated**PS.c**
* **PS.h**

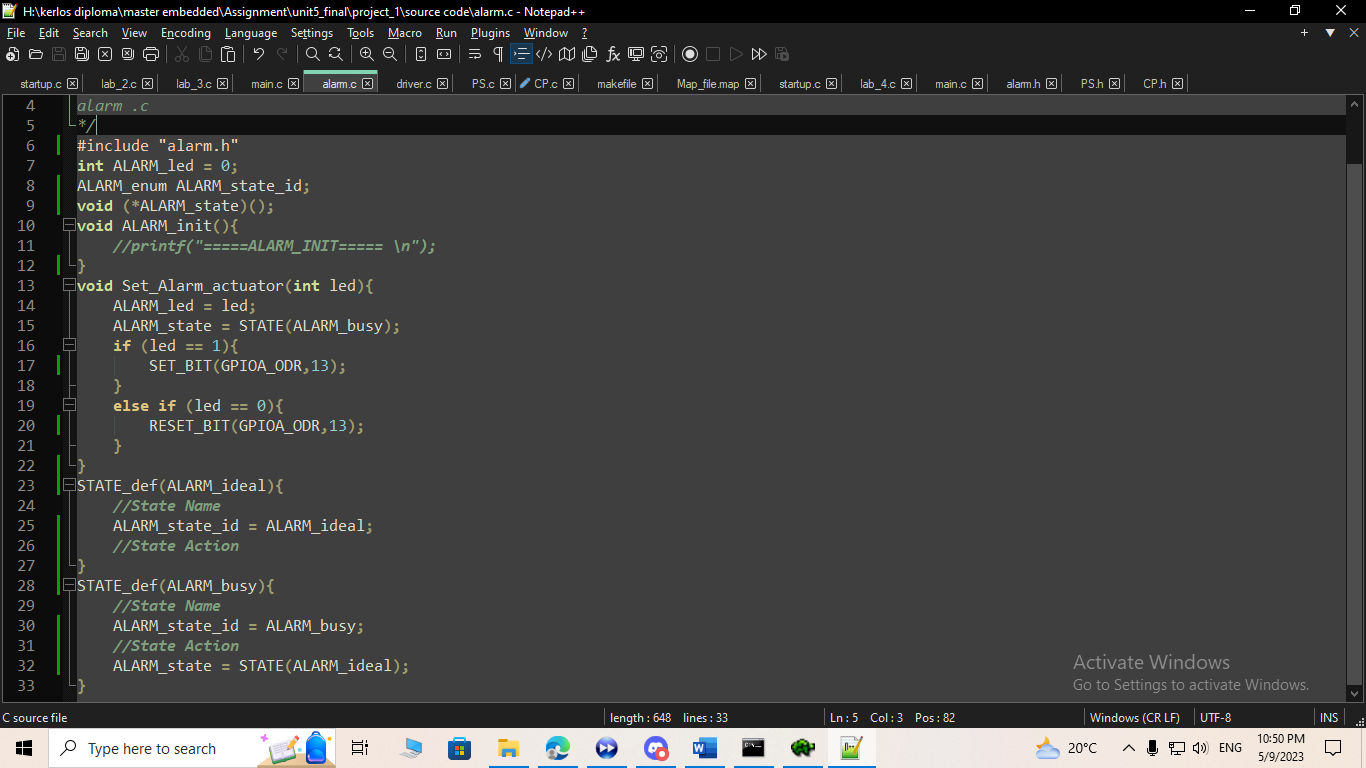


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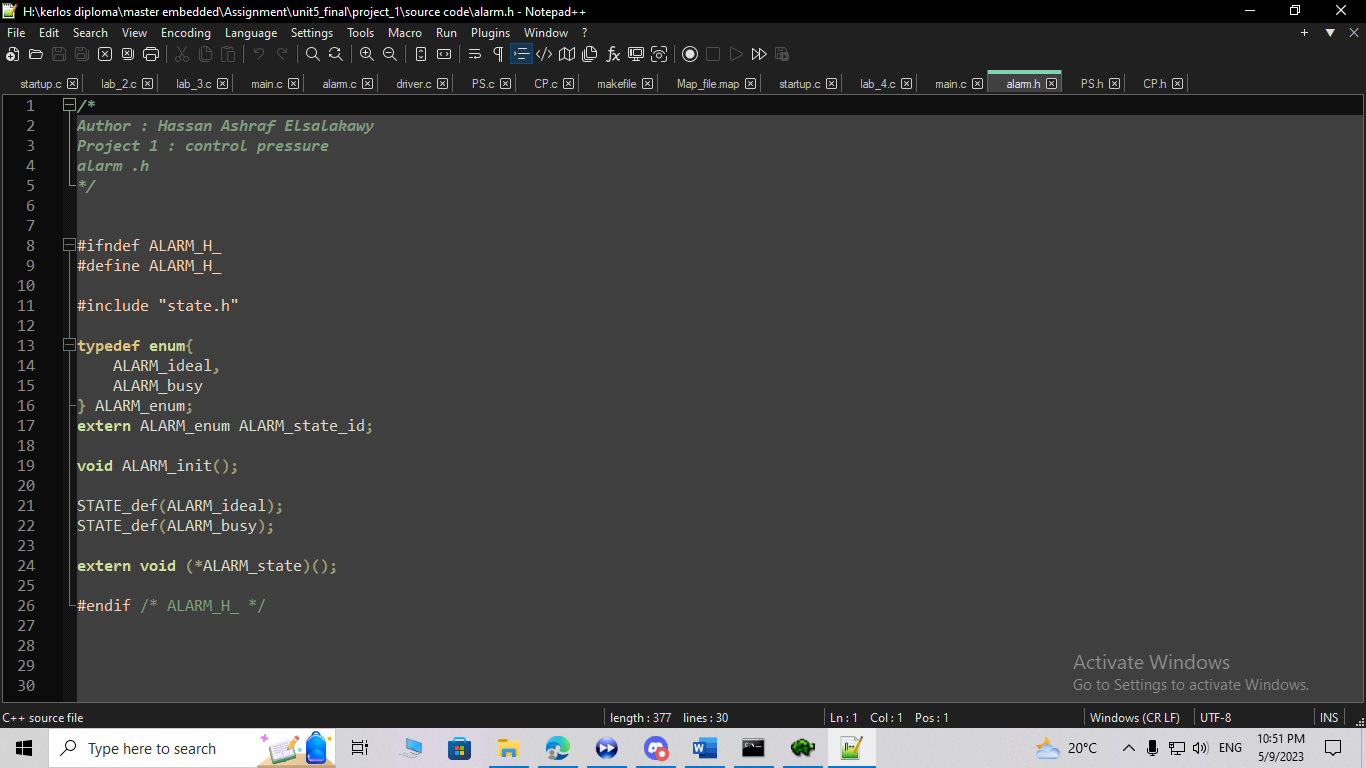
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* **CP.h**



* **alarm.c**



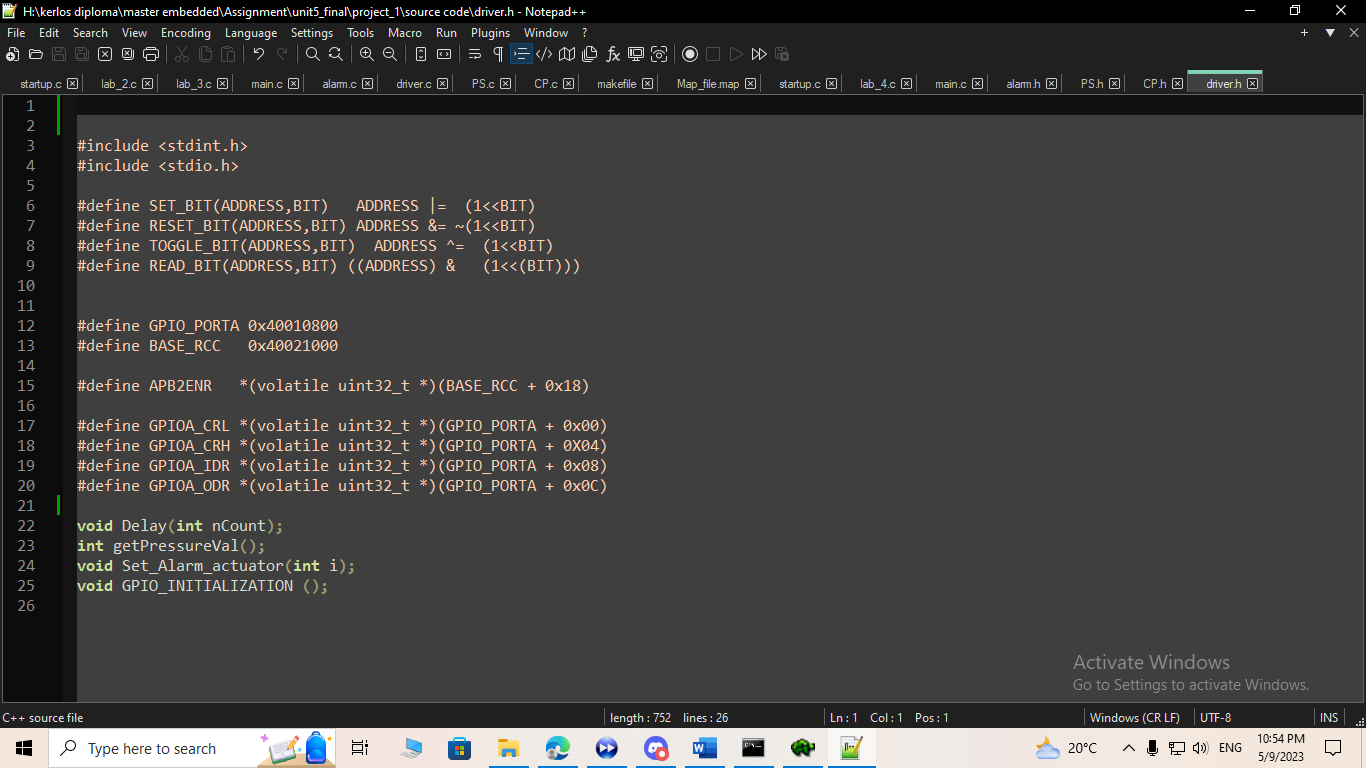
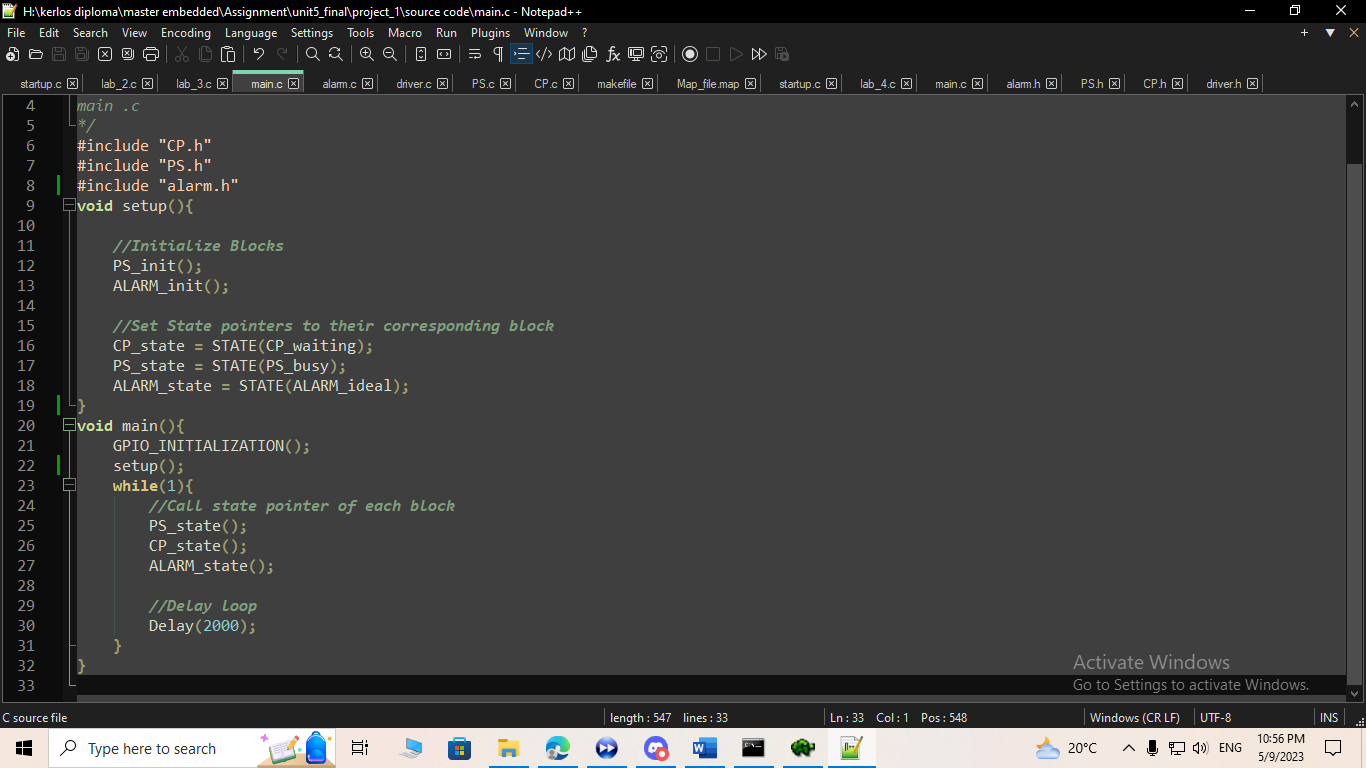
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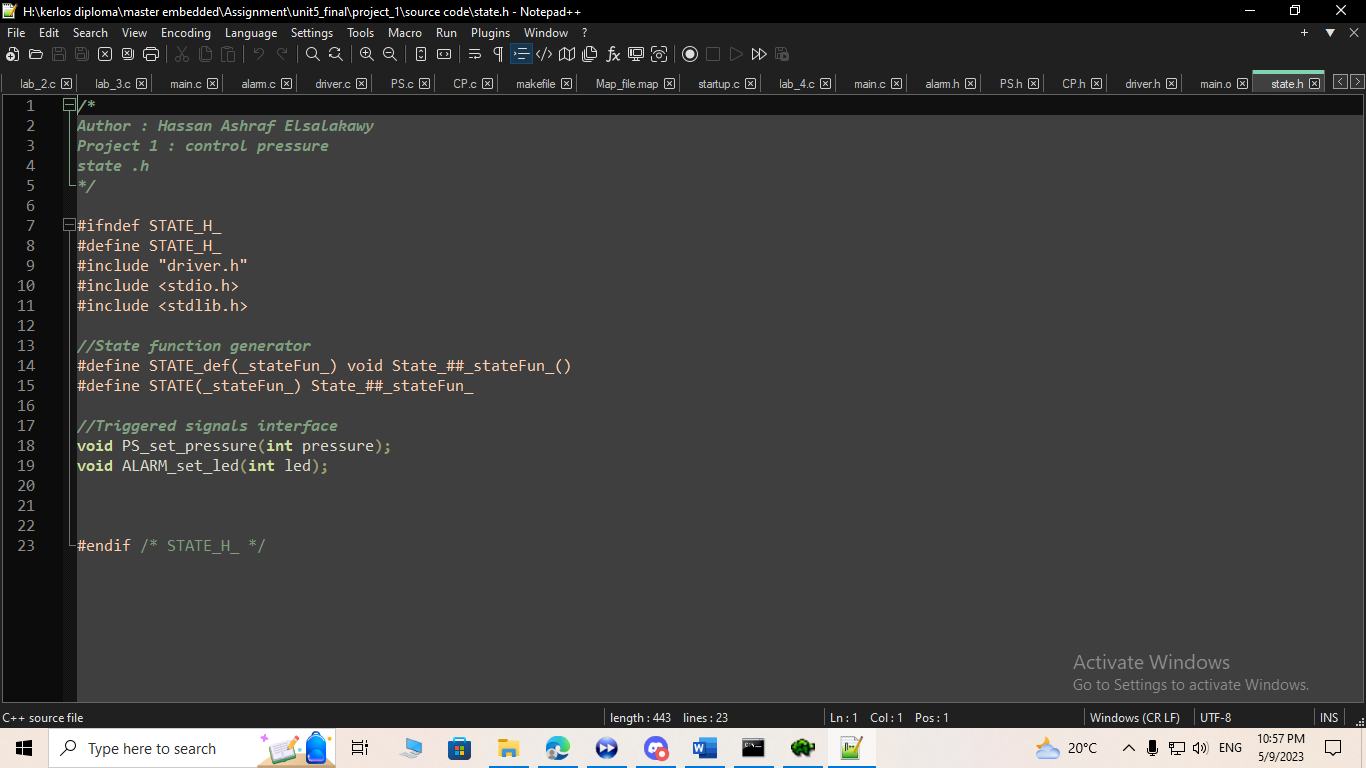


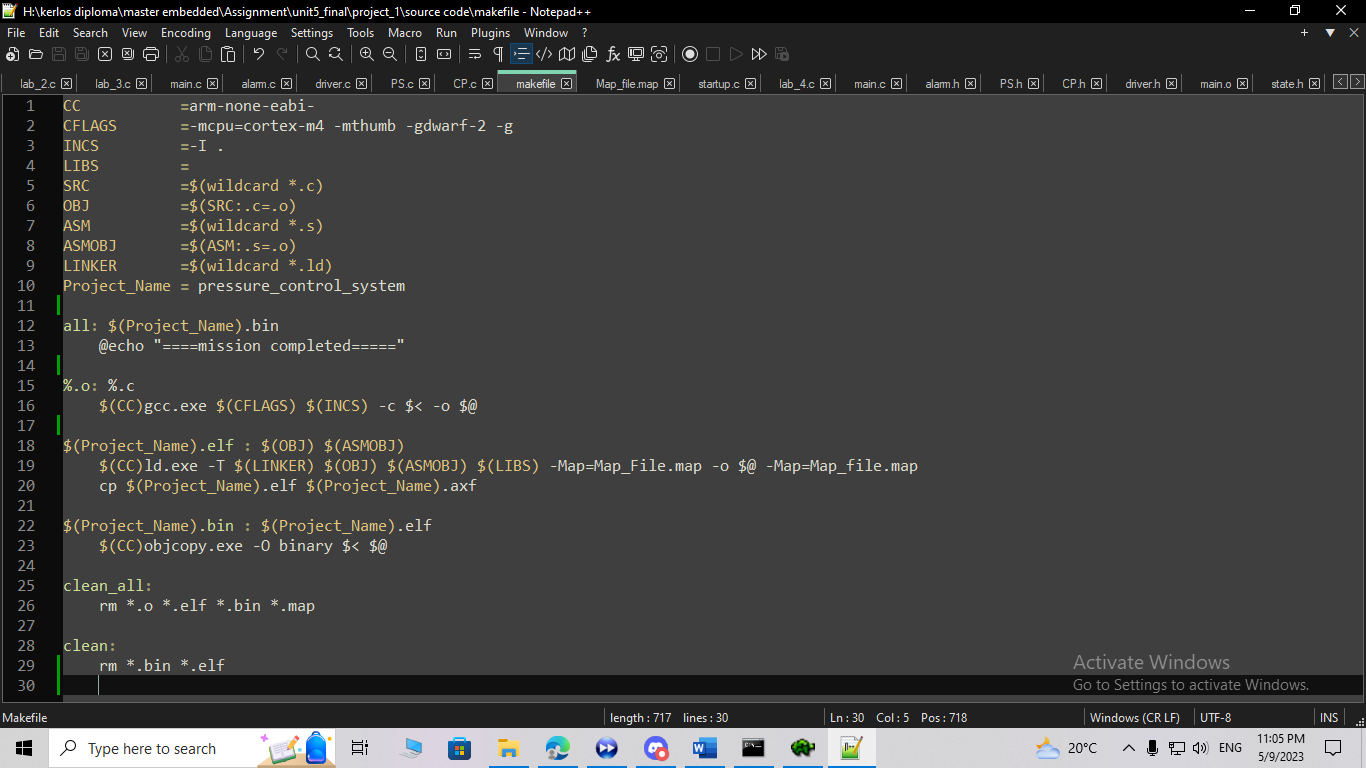
* **driver.c**

A screenshot of a computer

Description automatically generated

* **driver.h**
* **main.c**
* **state.h**



* **Makefile**
* **Linkerscript.ld**

Graphical user interface, text, application

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* **Startup.c**

Text

Description automatically generatedText

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