**Preliminary work**

**EE 447: Lab #4**

General Purpose Timer Modules

**Berkay İPEK**

**2304814 – Sec.2**

**Question 1)**

The Timer0A module that is being used in this question in the mode of Count-Down Periodic. Therefore, it continues to count forever. Also, it is using pre-scale factor of 4. (16MHz / 4 = 4MHz)

It should be noted that I changed Startup.s file by importing my Handler subroutine. Changes are follows:

Graphical user interface, application, table

Description automatically generated

Moreover, I commented undesired exporting handler part. Then, I added my My\_Timer0A\_Handler as follows:

Table

Description automatically generated

Table

Description automatically generated with low confidence

A picture containing background pattern

Description automatically generated

Selection of LOW and HIGH values are explained in code above.

**Question 2)**

In this question, I used PB4 as timer module. Results are not perfect. I couldn’t figure out why it is not perfect. However, results are quite similar, which is satisfying. In my opinion, it is about taking captured time in my program. Results with different LOW and HIGH values are:

Graphical user interface, text, application, email

Description automatically generated

Graphical user interface, text, application, email

Description automatically generated

Graphical user interface, text, application, email

Description automatically generatedGraphical user interface, text, application, email

Description automatically generated

Let’s move to analyze my code:

Main: (B . == loop B loop)

A picture containing text

Description automatically generated

PULSE\_INIT file is the same as the one in the precious question.

DETECT\_INIT:

Table

Description automatically generated

Text

Description automatically generated with medium confidence

These are just configuration settings. There is nothing interesting. Interesting part is in the subroutine, RESULTS.

RESULTS:

Table

Description automatically generated with medium confidence

Graphical user interface, application

Description automatically generated with medium confidence