1) From mycourses download this pdf, dxp_Lab8_a1.asm, and CapTouchOverview.pdf.
2) The **objective** of this lab is to enhance the reading of the state of the capacitive touch sensors.

3) **Part 1:** **Build, run and understand the dxp_Lab8_a1.asm code.**

4) This part assumes that the capacitive booster pack is still installed on your board.

5) Create a new assembly only project in your workspace named fmlxxxx_Lab8_a1. Create a copy of the assembly code dxp_Lab8_a1.asm in the project folder, and rename it fmlxxxx_Lab8_a1.asm. Build the project, enter debug mode, and run the program.

6) Select to see the memory content starting at 0x200.

7) Set a breakpoint so that you can see when a new value is added to the baseline measurement array. No fingers on the touch sensor during this time

8) Set a breakpoint so that you can see when a new value is added to the current measurement array. Run once without any finger touching the array.

9) Set a breakpoint in the detect sensor routine and run step by step through it to see how **sensor_status** is updated.

10) Re-run steps 8 and 9 several times with various sensors touched. Confirm the right value in **sensor_status**.

11) Now, complete this program by adding the necessary code in the display LED routine, **as described in the header of the file**. Use your code from Lab6 as a template.

12) **Part 2:** **Modify the fmlxxxx_Lab8_a1.asm code to fmlxxxx_Lab8_c1.c.**

13) Create the same functionality in C code. Use previous C code examples as guides and templates. A while(1) loop and multiple subroutine calls will be the main structures of your code.

14) Make sure you write the report explaining what was done and upload it along with your project archives on mycourses. As time permits, demo the intermediate steps to the TA.

15) **Grading**:

    a. Part 1 = 20 points

    b. Part 2 = 20 points.