Lab work 3: Using Branch Instructions and Loop Techniques (PIC16F84A)

1. General Information

* Knowledge of PIC16F84A instruction set

* Understanding of registers and the `STATUS` flags

* Basic manipulation in MPLAB IDE

2. Learning Objectives

At the end of this lab, students should be able to:

1. Identify and use branch instructions* (`GOTO`, `BTFSS`, `DECFSZ`, etc.).

2. Design a loop structure in PIC assembly language.

3. Understand how the Zero flag (Z) in the `STATUS` register is managed.

4. Program Under Study

```
     org 0x00
     clrf compt2
      movlw 0x04
      movwf compt1
rec  incf compt2,f
      decf compt1,f
      btfss STATUS,z
      goto rec
      decf compt1,f
      end
```

6. MPLAB Simulation Steps

1. Create a new project named `TP_Name.asm`.

2. Select PIC16F84A as the target device.

3. Paste the above code.

4. Assemble the program (`Project → Build All`).

5. Open the Watch window and add:

   * compt1

   * compt2