Lab 2

1. Use the simulator to single-step and examine the register and I/O Register content after the execution of each instruction.

```
start:
    ldi r17,0b00000001
    out DDRB,r17
    ldi r18,0b00000001
    out DDRD,r18
    ldi r19,0b00000001
    out PORTB,r19
    in r16,PORTB
    out PORTD,r16
Loop:
    rjmp Loop
```

2. Use the simulator to single-step and examine the flags and register content after the execution of each instruction.

```
      LDI   R20, $27
      LDI   R21, $15
      SUB   R20, R21

      LDI   R20, $20
      LDI   R21, $15
      SUB   R20, R21

      LDI   R24, 95
      LDI   R25, 95
      SUB   R24, R25

      LDI   R22, 50
      LDI   R23, 70
      SUB   R22, R23
L1:   RJMP  L1
```

3. Write an assembly program to load a value into each location of R20 – R23. Use the COM instruction to complement the value in each register. Use the simulator to single-step and examine the flags and register content after the execution of each instruction.

4. Write and assemble a program to add the following data and then use the simulator to examine the C, H and Z flags after the execution of each addition. $92, $23, $66, $87, $F5