PROBLEM SET

P1. Write an 8051 assembly language program to find the largest element in a given array of N = 6 (length of the array) bytes at location 4009h (starting address). Store the largest element at location 4184h.

Before Execution:

```
4009: 01H
4010: 02H
4011: 03H
4012: 09H
4013: FFH
4013: 66H
...
4184: 00H
```

After Execution:

```
...
4184: FFH
```

P2. Write an assembly language program to find whether the given number is prime or not. If prime send `FFh` to Port 0 else send `00h` to Port 0.

P3. Write an assembly language program to perform the subtraction of two 16-bit numbers.

P4. Write an assembly language program to check whether the lower nibble is greater than upper nibble of A. If 'yes' send `00h` to Port 0 else send `FFh` to Port 0.

P5. Write an assembly language program to find the cube of a given number.

P6. Write an assembly language program to count number of ones and zeros in an 8-bit number.

P7. Write an assembly language program to find whether given 8-bit number is odd or even. If odd, store `00h` in accumulator. If even store `FFh` in accumulator.

P8. Write an assembly language program to convert a BCD number into ASCII.

P9. Write an assembly language program to convert a binary (hex) number into decimal.

P10. Check whether the given byte of data is present in an array of 'N' bytes of data. If present send 00 in Port 0 else send FF in Port 0.

Check for: *03H* ; *[N = 6]*

Before Execution:

```
D:0x40: 00H
D:0x41: 01H
D:0x42: 02H
D:0x43: 04H
D:0x44: 05H
D:0x45: 06H
D:0x46: 00H
...
```

After Execution:

```
P1: 0xFF
```