

- 3) Write a sequence of instruction to toggle the upper four bits of an 8-bit number stored at memory location \$1000. Also write instructions to clear the lower four bits of the same number [e.g:- 10101010 → 01010000]

```
ldaa  $1000      ;D←m[$1000], loading the number to be
                ;manipulated in D
eora   #$F0      ;Toggles upper 4 bits in A
anda   #$F0      ;clears the lower 4 bits in A
```

Logic

Example: $A \leftarrow 10111100$

```
ldaa  $1000      ;A←10111100
eora   #$F0      ;A XOR $F0 → 10111100
                ;    XOR  11110000 → 01001100
```

So after eora $A \leftarrow 01001100$ (finished toggle part)

```
anda   #$F0      ;A AND $F) → 01001100
                ;    AND →11110000 →01000000
```

So after anda $A \leftarrow 01000000$ (finished clearing lower 4 bits)
