Hexadecimal

- A byte (8 bits, decimal range: 0-255) in Hexadecimal is always represented by 2 Hex Characters.
- It ranges from 00 to FF, where
    - Each Hexadecimal charater represents 4 bits(a small byte aka nibble, decimal range: 0-15)
    - Exmaple:

```
Decimal    Hexadecimal    Binary

0           00              0000 0000
1           01              0000 0001
.....
128         80              1000 0000
.....
255         FF              1111 1111


If we see for 128 as  example:
In decimal it's 128,
In Binary  it's 10000000
In Hexadecimal, we are breaking the Binary representation in blocks
so after that it comes as 1000 0000 , which after converting indivic
combining both gives us 80 in Hexadecimal.
```

- Reason of breaking the binary representation in blocks of 4 is that, maximum value that a hexadecimal character can represent is 15.
    - So, if binary value is 1111 it can be represented by a single hex character
    - Anything greater (like 1111 0001) cannot be represented by a single hex character
    - So, we break the binary representation in blocks of 4, which can give maximum of (2) 1111 and 1111, which can easily be represented by 2 single hex character
    - Exmaple:

```
1111 1111 -> FF
```