Number system coverstion (bit-binary digit)

binary : base (0-1) --> please divide 15/2 & count in reverse order

octal : base (0-7)

hexadecimal : base (0-9 & then a-f)

In [1]:
```
40
```

Out[1]:
```
40
```

In [2]:
```
bin(40)
```

Out[2]:
```
'0b101000'
```

In [3]:
```
bin(35)
```

Out[3]:
```
'0b100011'
```

In [4]:
```
bin(15)
```

Out[4]:
```
'0b1111'
```

In [5]:
```
hex(50)
```

Out[5]:
```
'0x32'
```

In [6]:
```
hex(10)
```

Out[6]:
```
'0xa'
```

In [7]:
```
hex(5)
```

Out[7]:
```
'0x5'
```

Swap Variable in Python

(a,b=10,30) After swap we should get ==>(a,b=30,10)

In [8]:
```
a=10
b=30
```

In [12]:
```
a=b
b=a
```

In [10]:
```
a,b=b,a
```

In [11]:
```
print(a)
print(b)
```

```
30
30
```

In [13]:
```
# in above scenario we lost the value 5
a1=7
b1=10
```

In [14]:
```
temp=a1
a1=b1
b1=temp
```

In [15]:
```
print(a1)
print(b1)
```

```
10
7
```

In [17]:
```
a2=8
b2=6
```

In [18]:
```
# Swap variable formulas
a2=a2+b2
b2=a2-b2
a2=a2-b2
```

In [20]:
```
print(0b101) # 101 is 3 bit
print(0b110) # 110 also 3bit
```

```
5
6
```

In [21]:
```
# But when we use a2+b2 then we get 11 that means we will which 1 bit extra.
a2=a2^b2
b2=a2^b2
a2=a2^b2
```

In [22]:
```
print(a2)
print(b2)
```

```
8
6
```

In [23]:
```
print(a2)
print(b2)
```

```
8
6
```

In [24]:
```
a2,b2=b2,a2
```

In [25]:
```
print(a2)
print(b2)
```

```
6
8
```

Completed