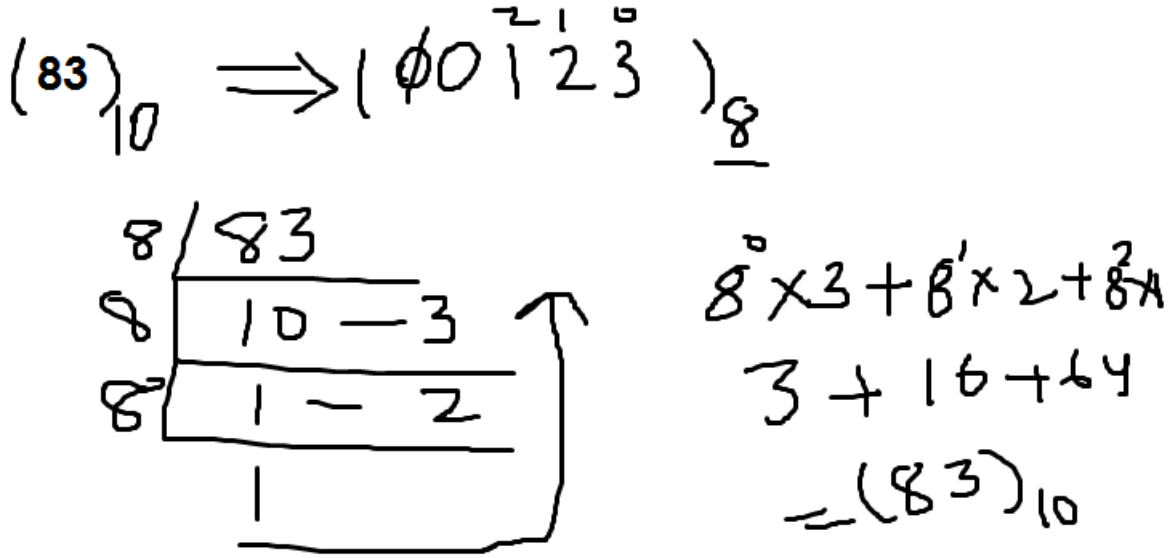
**Octal integer**
An integer value with base 8 is called octal integer.
This integer consists of or created using digits from 0-7
This integer is prefix with 0o or 0O

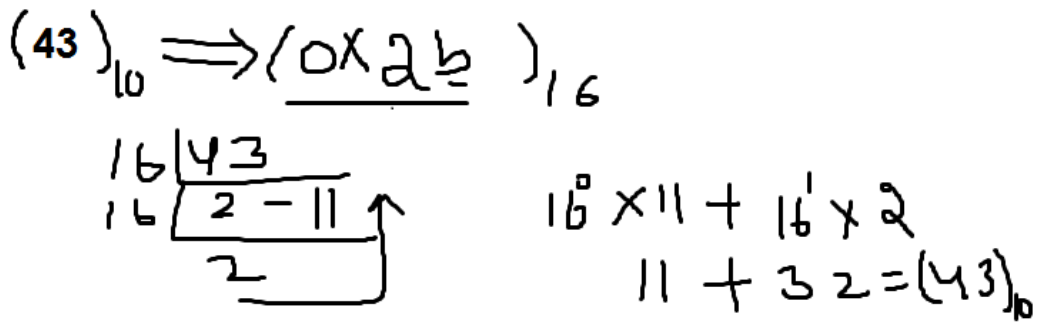
```
>>> n1=0o123
>>> n2=123
>>> n1
83
>>> n2
123
>>> oct(n1)
'0o123'
>>> oct(83)
'0o123'
>>>
```

oct() is a predefined function in python, which return octal representation of integer value. Oct() is a type conversion function.




**Hexadecimal integer**
An integer value with base 16 is called hexadecimal integer. It consists of digits from 0-9 and a-f/A-F. Larger values are represented in hexadecimal format.
Eg: Memory addresses, color values, Unicode values,…
Hexadecimal integer is prefix with 0x or 0X

| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | a | b | c | d | e | f |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | 10 | 11 | 12 | 13 | 14 | 15 |



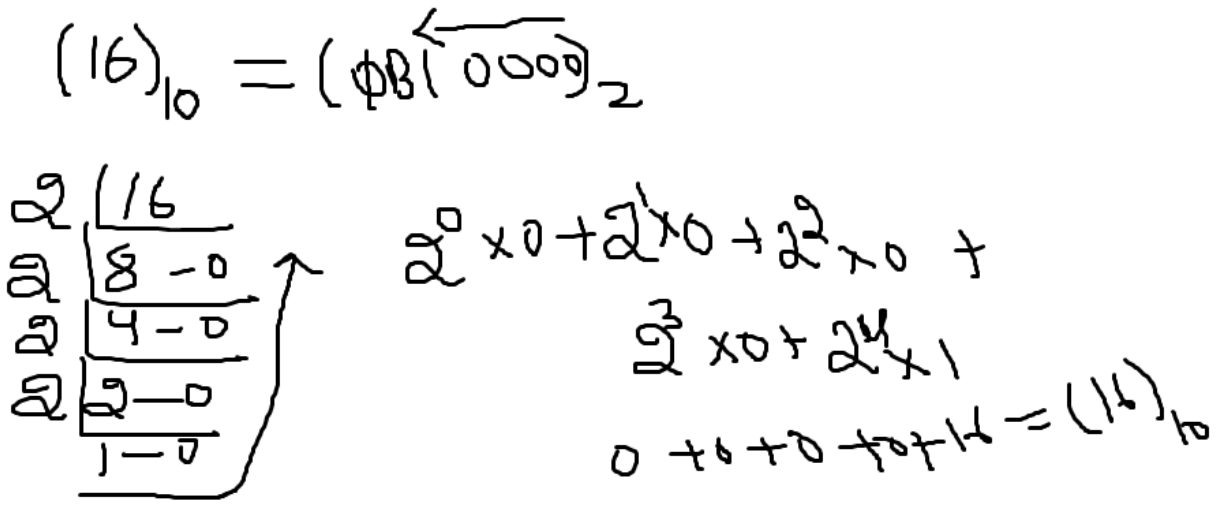

```
>>> n1=0xa
>>> n2=0xaa
>>> n1
10
>>> n2
170
>>> hex(n1)
'0xa'
>>> hex(n2)
'0xaa'
>>> hex(10)
'0xa'
>>> hex(170)
'0xaa'
>>>
```

hex() is predefined function, which return hexadecimal integer of given integer.

**Binary integer**

An integer value with base 2 is called binary integer. This integer consist of 2 digits 0,1. This integer is prefix with 0b or 0B.

Eg: Memory management, logic gates, …



```
>>> n1=0b101
>>> n1
5
>>> bin(n1)
'0b101'
>>> bin(65)
'0b1000001'
>>> bin(0xa)
'0b1010'
>>> bin(0o12)
'0b1010'
>>>
```

**Quiz:**

Which of the following is valid octal integer?

A. 0456
B. 0o789
C. 0123
D. 0o345

Ans: D

How many integer objects are created in the following code?

N1=0xa
N2=0b1010
N3=0o12
N4=10

Ans: 1 object and 4 variables

Which of the following is valid decimal integer?

A. +0123
B. -0123
C. 123
D. None

Ans: C

Which of the following is valid binary integer?

A. 1010
B. 0b10_
C. 0b101_101_101
D. None

Ans: C

**Float data type or real data type**