

~~body~~ Applications a Binary Integer.

- ~~stab~~
- 1) Internal data representation.
- 2) Machine language.
- 3) Image processing.
- 4) Audio or video processing.

30/10/22

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Decimal to Binary

$$\textcircled{1} \quad (15)_{10} \rightarrow (0B111)_2$$

$$\begin{array}{r} 2 | 15 \\ -2 | 7 \\ -2 | 3 \\ -2 | 1 \\ -2 | 1 \\ \hline & 1 \end{array}$$

Binary to Decimal

$$(0B101)_2 \rightarrow (5)_{10}$$

$$\begin{aligned} &= 2^0 \times 1 + 2^1 \times 0 + 2^2 \times 1 \\ &= 1 + 0 + 4 \\ &= \textcircled{5} \end{aligned}$$

$$\textcircled{2} \quad (5)_{10} \rightarrow \begin{array}{l} (0B101)_2 \\ (0B101)_2 \end{array}$$

$$\begin{array}{r} 2 | 5 \\ -2 | 2 \\ -2 | 0 \\ -2 | 1 \\ \hline & 1 \end{array}$$

g>> account no 512345

>> account no.

12345

Eg - Color = 0xFF0000

>> color

16711680

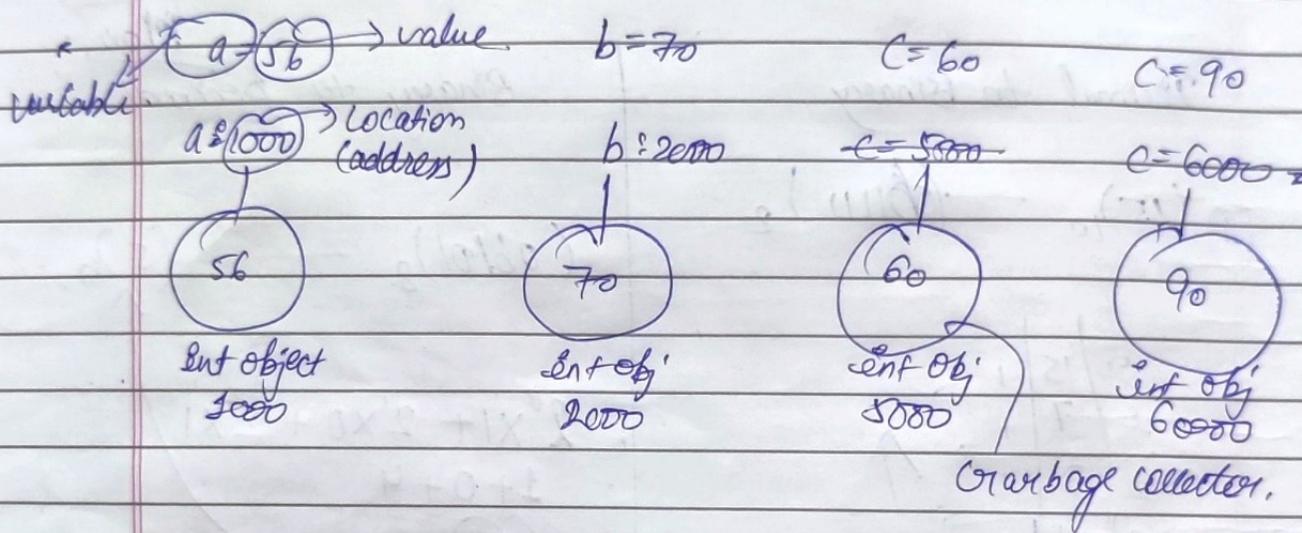


red color.
 $\ggg \text{color} = 0xFF$

$\ggg \text{color}$

255

All scalar data types are ~~immutable~~ → can't change,
 → After creating object, value cannot modify or
 after creating object changes cannot be done.



How to find Id or address of object?

Every object in memory is identified.

Ex:-

$\ggg a = 60$

$\ggg a$
60

$\ggg \text{id}(a)$

14071679---

$\ggg b = 80$

$\ggg b$
80

$\ggg \text{id}(b)$

1402345 --- 412357 ---

$\ggg a = 90$

$\ggg a$
90

$\ggg \text{id}(a)$

1402345 --- 412357 ---

Q How many variable & objects are created in following code?

- (a) $a = 10$
- (b) $b = 20$
- (c) $c = b - a$
- (d) $d = a + c$

Base conversion functions :-

Python provides 3 base

Float data type:-

float literal or value is represented in python using float data type or class.

float value is a numeric value with fractional part.

The size of float data type is 8 bytes.

Ex- If we want info of float we can use library.

```
>>> import sys  
>>> sys.float_info.
```

⇒ o/p will come.

```
>>> a = 1.5  
>>> a  
1.5  
type(a)  
'class' float>
```

Eg:-
 $\gg a = 123.123123123123123$
 $\gg a$
 $\Rightarrow 123.123123123123$

Float value is stored in three formats or notations.
 1) Fixed notation or fixed format.
 2) Scientific notation/exponent notation or scientific format.

Eg:-
 $\gg f_1 = 12.456$
 $\gg f_1$
 12.456

Eg:-
 $\gg f_2 = 1.245$
 $\gg f_2$
 1.245

Eg:-
 $\gg f_3 = 12456e3$
 $\gg f_3$
 $12.456.$

Eg:-
 $f_4 = 12456e2$
 $\gg f_4$
 124.56

// Complex data type:

- Complex data type or class is used to represent complex number/ Electrical.
- Complex numbers is having two values.

- 1) Real
 2) Imaginary.

```

 $\gg c_1 = 1 + 2j$ 
 $\gg c_1$ 
 $(1+2j)$ 
 $\gg \text{type}(c_1)$ 
<class 'complex'>
 $\gg c_1.\text{real}$ 
1.0
 $\gg c_1.\text{img}$ 
2.0
 $\gg c_2 = 2j$ 
 $c_2$ 
 $2j$ 
 $\gg \text{type}(c_2)$ 
<class 'complex'>
 $\gg c_2.\text{real}$ 
0.0
 $\gg c_2.\text{img}$ 
2.0
    
```

bool data type :-

→ This data types is used to represent Boolean values.
→

e.g:- a = True
a

True.

type(a)
<'class 'bool'>

e.g:- a = 10 > 2

a = True

type(a)
<'class 'bool'>

None data Type :-

NoneType represent None value.

In python None is represent as missing value or no value.

C8t6W3f
Njhf626.

~~Eg~~) Roll no =
=> name = None
=> fee = 4000.0
=> roll no
= 1

>> name
— (blank because name is none)

>> fee

4000.0

>> a = None
type(a)
<class('NoneType')>

/