Basic data types

Numbers

int

10
0
15
60
-45
-36

float

16.71
200.02
14.56
-0.29

Strings

'Python'

"Python"

''' Python '''

bool

True

False

$\underline{\underline{int}}$

16

2^7	2^6	2^5	2^4	2^3	2^2	2^1	2^0
0	0	0	1	0	0	0	0

$$2 \underline{|16}$$
$$2 \underline{|8-0}$$
$$2 \underline{|4-0}$$
$$2 \underline{|2-0}$$
$$1-0$$

$10000_{(2)}$

$2^7 * 0 + 2^6 * 0 + 2^5 * 0 + 2^4 * 1 + 2^3 * 0 + 2^2 * 0 + 2^1 * 0 + 2^0 * 0$

$0 + 0 + 0 + 16 + 0 + 0 + 0 + 0$

$\underline{\underline{16}}$

float

3.14

2|3
 1—1
$11_{(2)}$

2|14
2|7—0
2|3—1
 1—1

$1110_{(2)}$

2^7	2^6	2^5	2^4	2^3	2^2	2^1	2^0	2^7	2^6	2^5	2^4	2^3	2^2	2^1	2^0
0	0	0	0	0	0	1	1	0	0	0	0	1	1	1	0

montesa

$2^7 * 0 + 2^6 * 0 + 2^5 * 0 + 2^4 * 0 + 2^3 * 0 + 2^2 * 0 + 2^1 * 1 + 2^0 * 1 = 3$

$2^7 * 0 + 2^6 * 0 + 2^5 * 0 + 2^4 * 0 + 2^3 * 1 + 2^2 * 1 + 2^1 * 1 + 2^0 * 0 = 14$
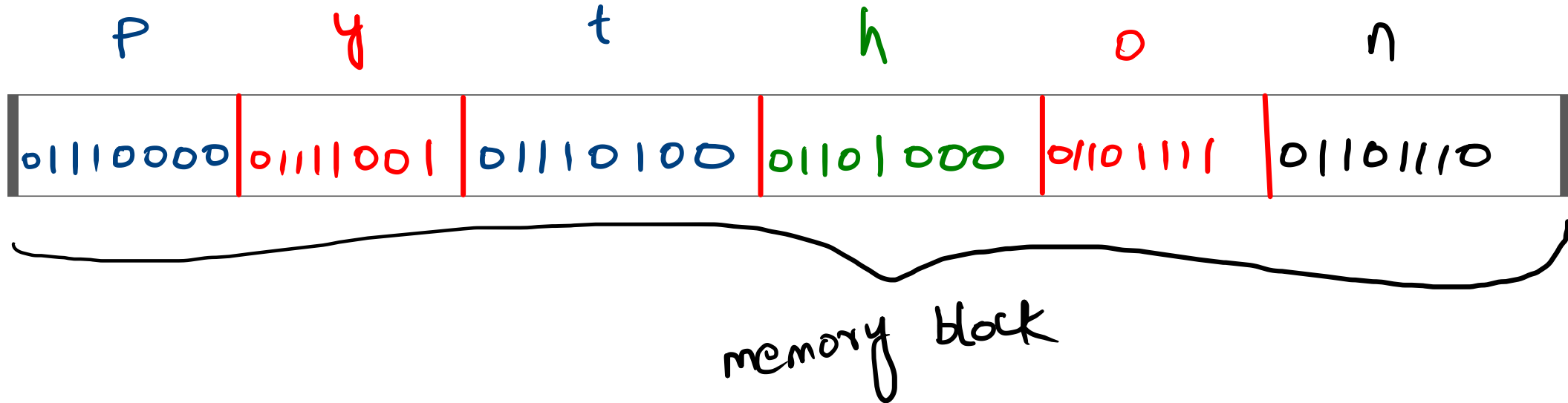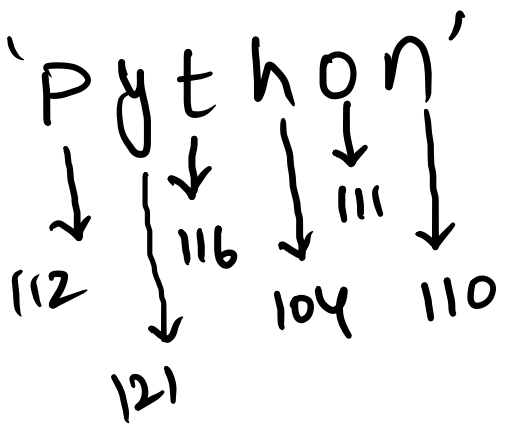
$3 + 14 * 10^{-2}$

$3 + 14 * \dfrac{1}{10^2}$

$3 + 14 * \dfrac{1}{100}$

$3 + 0.14$

3.14

'Python'

P → 112
y → 121
t → 116
h → 104
o → 111
n → 110

P	y	t	h	o	n
01110000	01111001	01110100	01101000	01101111	01101110

memory block

```
2 | 112
2 | 56 - 0
2 | 28 - 0
2 | 14 - 0
2 | 7 - 0
2 | 3 - 1
    1 - 1
```

```
2 | 116
2 | 58 - 0
2 | 29 - 0
2 | 14 - 1
2 | 7 - 0
2 | 3 - 1
    1 - 1
```

```
2 | 111
2 | 55 - 1
2 | 27 - 1
2 | 13 - 1
2 | 6 - 1
2 | 3 - 0
    1 - 1
```

```
2 | 121
2 | 60 - 1
2 | 30 - 0
2 | 15 - 0
2 | 7 - 1
2 | 3 - 1
    1 - 1
```

```
2 | 104
2 | 52 - 0
2 | 26 - 0
2 | 13 - 0
2 | 6 - 1
2 | 3 - 0
    1 - 1
```

```
2 | 110
2 | 55 - 0
2 | 27 - 1
2 | 13 - 1
2 | 6 - 1
2 | 3 - 0
    1 - 1
```

bool

True — 1
False — 0

$i = 10$ ⟶ int

② ①

memory will be allocated

$j = i$

val ? ⟶ memory will be allocated

var ? ⟶ memory will not be allocated

i ⟶ 10 ⟵ int

j ⟶ immutable

1726