

Dynamic Casting Python

1. 5 basic types
2. type()

```
1 a=10
2 print(a)

10
```

Python supports dynamic casting, it means data type of a variable will be decided by the data given to it

```
1 # swapping without 3rd variable
2 a=10
3 b=20
4 print("a: ", a, "b: ", b)
5 a, b=b, a
6 print("a: ", a, "b: ", b)
```

```
➤ a: 10 b: 20
  a: 20 b: 10
```

```
1 a=10
2 b=5*2
3 c=13-3
4 print("a:", id(a), "b: ", id(b), "c: ", id(c))
5 a=a-5
6 print("a:", id(a), "b: ", id(b), "c: ", id(c))
7 b=b/2
8 print("a:", id(a), "b: ", id(b), "c: ", id(c))
```

```
a: 140360448911952 b: 140360448911952 c: 140360448911952
a: 140360448911792 b: 140360448911952 c: 140360448911952
a: 140360448911792 b: 140359191233008 c: 140360448911952
```

```
1 a=10
2 print("a is", a)
3 # each comma induces a space
4 # after each print() it puts a newline char
```

```
a is 10
```

```
1 #challenge,
2 # each comma in print() induces a space, now print as assigned on projector
3 # after each print() it puts a newline char
4 a=10
5 b=20
6 print("a is", 10, "and", b, "is b")
7 print(a, "is a and", b, "is b")
8 print(a, "value of a and b is", b)
```

```
a is 10 and 20 is b
10 is a and 20 is b
10 value of a and b is 20
```

```
1 print("line 1", end=' ')
2 print(" line 2")
3 print("line 3")
```

```
line 1 line 2
line 3
```

```
1 a, b, c=10, 20, 30
2 print(a, b, c, sep="-----")
3 print(a, b, c, sep="-----")
4 print(a, b, c, sep="-----")
```

```
10-----20-----30
10-----20-----30
10-----20-----30
```

```
1 a, b, c=10, 20, 30
2 print(a, b, c, sep="-----", end=" ") # end with single space, & separator as "-----"
3 print(a, b, c, sep="-----")
4 print(a, b, c, sep="-----")
```

```
10-----20-----30 10-----20-----30
10-----20-----30
```

```
1 a, b, c=10, 20, 30
2 print(a, b, c, sep="-----", end="\t") # end with tab space (5 spaces)
3 print(a, b, c, sep="-----")
4 print(a, b, c, sep="-----")
```

```
10-----20-----30      10-----20-----30
10-----20-----30
```

```
1 # a=input() # does not prompt any message before asking input
2 a=input("Enter your name: ")
```

```
Enter your name: surya
```

```
1 no =input("Enter a number:") # treats input as 'str'
2 print(no, type(no))
```

```
Enter a number:123
123 <class 'str'>
```

```
1 no =int(input("Enter a number:")) # casts 'str' input to 'int'
2 print(no, type(no))
```

```
Enter a number:123
123 <class 'int'>
```

```
1 # challenge
2 # read boolean False from keyboard
3 no =bool(input("Enter a number:")) # casts 'str' input to 'bool'
4 print(no, type(no)) # Absence of information is False, so no input will read False
```

```
Enter a number:
False <class 'bool'>
```

Arithmetic operators

```
1 2**3 # exponent, power
```

```
8
```

```
1 5/2 # division
```

```
2.5
```

```
1 5//2 # floor division
```

```
2
```

```
1 137%130
```

```
7
```

```
1 137%200 # remainder is 137, 0 x 200 = 0, so remainder is that divisor itself
```

```
2
```

```
137
```

```
1 1.75%0.5 #
```

```
0.25
```

```
1 5 + 12 / 6 -3
```

```
4.0
```

```
1 (5 + 12) / (6 -3)
```

```
5.666666666666667
```

```
1 5 + 7 % 3 ** 2 * 4
```

```
33
```

```
1
```

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