

Round () Function

- It is inbuilt function in Python
- used to round off numbers upto the specified number of decimal points

Syntax: - `round ( number, ndigits )`

- \* number is must to specify, it is the number to be rounded off.
- \* ndigits are optional, it is the number up to which the given number is rounded, by default ndigits are considered as zero.

what `round()` will return?

It will return the

- Case 1: nearest integer to the given number if ndigits is not given
- Case 2: number rounded off to ndigits digits if ndigits is given

g:- `print(round(7))`  $\Rightarrow$  7

`print(round(7.61))`  $\Rightarrow$  8

`print(round(7.5))`  $\Rightarrow$  8

`print(type(round(7.61)))`  $\Rightarrow$  int

`print(round(2.66666, 2))`  $\Rightarrow$  2.67

`print(round(2.6657, 0))`  $\Rightarrow$  3.0  $\Rightarrow$  float

in first case of return, the type would be int.

in case 2, type would be float

$\rightarrow$  if input number is integer, return value is also integer, but if input number is float, then it will return an integer value if ndigits is not given & a float value if ndigits is given. ~~And if the value after the decimal point is 0.5 then it will round up to the next integer.~~

`print(round(-8/3))`  $\Rightarrow$  -3

`print(round(-8/3, 2))`  $\Rightarrow$  -2.67

`print(round(-1.5))`  $\Rightarrow$  -2

→

$\text{round}(\text{number}, \text{ndigits})$   
↓

it can not be string, it should be integer or floating number

$\text{print}(\text{round}(2.6645786, 2)) \Rightarrow 2.66$

$\text{print}(\text{round}(674, 2)) \Rightarrow 674$

$\text{print}(\text{round}(674, -2)) \Rightarrow 700$

$\text{print}(\text{round}(674, -1)) \Rightarrow 670$

$\text{print}(\text{round}(644, -2)) \Rightarrow 600$

NOTE:- ① if ndigits is a positive value, then round off has no effect on the integer value(number).

e.g.:-  $\text{print}(\text{round}(674, 2)) \Rightarrow 674$

② if ndigits is zero value, then round off has no effect on the integer number.

e.g.:-  $\text{print}(\text{round}(674, 0)) \Rightarrow 674$

③ if ndigits is negative value then it affects the integer number.

e.g.:-  $\text{print}(\text{round}(674, -1)) \Rightarrow 670$

$\text{print}(\text{round}(677, -1)) \Rightarrow 680$

Special Cases:- (Tie Breaking)

e.g.:-  $\text{print}(\text{round}(7.5)) \Rightarrow 8$

$\text{print}(\text{round}(6.5)) \Rightarrow 6$

The number is rounded to its nearest even integer.

$\text{print}(\text{round}(8.5)) \Rightarrow ?$

$\text{print}(\text{round}(7.5)) \Rightarrow ?$



(3)

$$\text{print}(\text{round}(6.75, 1)) \Rightarrow 6.8$$

$$\text{print}(\text{round}(6.85, 1)) \Rightarrow 6.8$$

$$\text{print}(\text{round}(674.1012, -1)) \Rightarrow 670.0 \text{ (it rounds off a value to the closest multiple of } 10^{\text{nd}} \text{ digits)}$$

So here  $10^{(-(-1))} = 10^1 = \underline{10}$   
& nearest multiple of 10 closest to 674 is 670.

$$\text{print}(\text{round}(1212, -2)) \Rightarrow 1200$$

But if the absolute value of negative decimal points is greater than the number of digits in the original number then the input number becomes zero

eg:-  $\text{print}(\text{round}(674.10, -4)) = 0.0$

$$\text{print}(\text{round}(665, -1)) = ? \quad 660$$

$$\text{print}(\text{round}(675, -1)) = ? \quad 680$$