Python

Input & Output

in programming

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????

Diagrammatic representation

Input → Process → output

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Input

Developers often have a need to interact with users, either to get data or to provide some sort of result

For taking basic input from user python has one simple function

```
input()
```

The input() method reads a line from input, converts into a string and returns it

The syntax of input( ) method is

```
input([prompt])
```
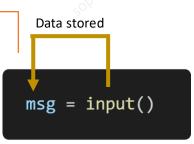
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Input

How input( ) works in Python?

The **input( )** function takes a single optional argument called **prompt**

The **input()** method reads a line from the input (usually from the user), converts the line into string and returns it.

Data stored

```
msg = input()
```

A string that is written to standard output (usually screen) without trailing newline

```
hero = input('Who is your fav hero? ')
```

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The datatype of user input

Code

```python
name = input('enter your name : ')
age = input('enter your age : ')
school = input('enter your school name:')
```

3 variables

name　　**age**　　**school**

All of string datatype

The value returned from **input( )** function is always string data type

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Casting in python

```
age = input("enter ur age:")

type(age)
```

str

```
age = input("enter ur age:")

age = int(age)

type(age)
```

Casting is when you convert a variable value from one type to another.

int

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In python, its done with functions such as int() or float() or str().
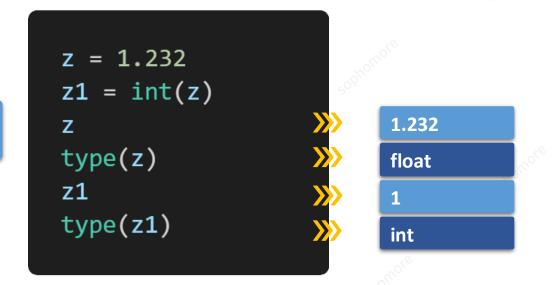
```
x = '100'
y = '-90'
```

Because string values don't work like math

```
x + y
```
⟩⟩⟩⟩⟩ '100-90'

```
x = int(x)
y = int(y)
x + y
```
⟩⟩⟩⟩ 10

Run all code lines in different cell for better understanding

```
z = 1.232
z1 = int(z)
z
type(z)
z1
type(z1)
```
⟩⟩ 1.232
⟩⟩ float
⟩⟩ 1
⟩⟩ int

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Activity 1

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Write down the datatype given in code below ?

```python
a = input('your name >>>')
type(a)
```

```python
pi = 3.145
p = int(pi)
type(p)
```

```python
b = input('age of tiger')
type(b)
```

```python
num = 0
val = bool(num)
type(val)
```

```python
x = 5
x = str(5)
type(x)
```

```python
married = 'yes'
m = bool(married)
type(m)
```

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Input & Output in python

????

Diagrammatic representation

Input → Process → output

input() and **print()** are widely used for standard input and output operations respectively

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- print( ) function
- Output formatting

Output formatting is when you want to display the output making it more attractive and understandable

The syntax of print function is simple until you want to understand all options.

We use the print() function to output data to the standard output device (screen)

you can pass zero or more expressions separated by commas

```python
print("One can believe in a story without believing it happened")
```

```python
print('Brandon Sanderson', 'Oathbringer')
```

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Print function

output

→ print( ) function

When you just put a variable in cell to see output, its known as raw output

When we display output using **print( )** function its called formatted output

So, to understand the program ourselves we can use both but to display information correctly we have to use print() function

Passing data

As you can see, we can pass variable in print. Also we can mix other datatypes in one print( ) function

```python
name = 'Harry potter'

name

print(name)
```

≫ 'Harry potter'

≫ Harry potter   Clean output

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Formatting print

output

print( ) function

```python
print(1, 2, 3, 4)

print(1, 2, 3, 4, sep='*')

print(1, 2, 3, 4, sep='#', end='&')
```

>>> 1 2 3 4

>>> 1*2*3*4

>>> 1#2#3#4&

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Formatting print

Output formatting

```
# the f strings

qty = 10
fruit = 'apple'

print('i will purchase',qty,fruit,'today')
```

>>> **i will purchase 10 fruit today**

```
name = "digipodium"
type_of_company = "Educational"

# enclose your variable within the {}
# to display it's value in the output
print(f"{name} is an {type_of_company} company.")
```

>>> **digipodium is an Educational company.**

formatting?

Attractively designing your string using formatting techniques provided by the particular programming language.

We have different string formatting techniques in Python.

the new f-string formatting technique, is the best way to format output. There are older techniques that we will discuss later

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THE END

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