

PYTHON CRASH COURSE

* Running the Hello World Program

⇒ Print ("Hello Python World")

Hello Python World

* Variables

Variables are containers for storing data values

message = "Hello Python World"

Print (message)

Hello Python world!

* String

A String is a sequence of characters

name = Ada Lovelace

Print (name.upper())

Print (name.lower())

ADA LOVELACE

Ada Lovelace

-@meet_Kanth

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* Combining or concatenating Strings

⇒ ① message = "Hello, " + full_name.title() + "!"
② Print (message)

* Numbers

Integers:

you can add (+), subtract (-), multiply (*), and divide (/) integers in Python.

```
>>> 2+3
```

```
5
```

```
>>> 3-2
```

```
1
```

```
>>> 3*2
```

```
6
```

```
>>> 3/2
```

```
1.5
```

```
>>> 3**2
```

```
9
```

```
>>> 3**3
```

```
27
```

```
>>> 10**6
```

```
1000000
```

```
>>> 2+3*4
```

```
14
```

```
>>> (2+3)*4
```

```
20
```

* What is a List?

A List is a collection of items in a particular order, you can make a list that includes the letters of the alphabet, the digit from 0-9, or the name of all the people in your family, you can put anything you want in a list.

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* Accessing Elements in a List

```
bicycles = ['trek', 'cannondale', 'redline', 'specialized']
```

```
① Print (bicycles[0])
```

```
bicycles = ['trek', 'cannondale', 'redline', 'specialized']
```

```
Print (bicycles[0].title())
```

* Index Positions

```
bicycles = ['trek', 'cannondale', 'redline', 'specialized']
```

```
Print (bicycles[1])
```

```
Print (bicycles[3])
```

```
motorcycles.append('ducati')
```

```
Print (motorcycles)
```

```
['honda', 'yamaha', 'suzuki']
```

```
['honda', 'yamaha', 'suzuki', 'ducati']
```

* Removing

```
del motorcycles[1]
```

```
Print (motorcycles)
```

```
['honda', 'yamaha', 'suzuki']
```

```
['honda', 'yamaha']
```

* Popping

```
first_owned = motorcycle.pop(0)
```

```
Print (The first motorcycle I owned was a ' + first_
- owned.title() + '.')
```

The first motorcycle I owned was a Honda.

* Removing an item by value

```
motorcycles = ['honda', 'yamaha', 'suzuki', 'ducati']
```

```
Print (motorcycles)
```

```
motorcycles.remove('ducati')
```

```
Print (motorcycles)
```

* Sort

```
cars = ['bmw', 'audi', 'toyota', 'subaru']
```

```
cars.sort(revers=True)
```

```
Print (cars)
```

```
['toyota', 'subaru', 'bmw', 'audi']
```

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* Looping

① magician = ['alice', 'david', 'carolina']

② for magician in magicians:

③ printing (magicians)

* Using Range function

for value in range(1,5):

Print (value)

1
2
3
4

for value in range(1,6):

Print (value)

1
2
3
4
5

* Squares

① square = []

② for value in range(1,11):

③ square = value ** 2

④ squares.append(square)

⑤ print (squares)

[1, 4, 9, 16, 25, 36, 49, 64, 81, 100]

* Tuple

```
dimensions = (200, 50)
```

```
for dimension in dimensions:  
    print (dimension)
```

200

50

* If Statements

```
cars = ['audi', 'bmw', 'subaru', 'toyota']
```

```
for car in cars:
```

```
    ① if car == 'bmw':
```

```
        print (car.upper())
```

```
    else:
```

```
        print (car.title())
```

Audi

BMW

Subaru

Toyota

checking whether a value is not in a list

```
banned_users = ['andrew', 'caroline', 'david']
```

```
users = marie
```

① if user not in banned users:

Print (user.title() + ", you can post a response if you wish")

* Voting

age = 18

① if age >= 18

② Print ("you are old enough to vote")

you are old enough to vote!

* Amusement Park

if age < 4:

Print ("your admission cost is \$0")

* Dictionary

```
user_0 = {  
    'username': 'efermi',  
    'first': 'enrico',  
    'last': 'fermi',  
}
```

⑦ for key value in user_0.items():

⑧ print ("\nkey: " + key)

⑨ Print ("value: " + value)

for k, v in user_0.items():

⇒

alien_0 = {'colour': 'green', 'Points': 5}

alien_1 = {'colour': 'yellow', 'Points': 10}

alien_2 = {'colour': 'red', 'Points': 15}

④ aliens = [alien_0, alien_1, alien_2]

for alien in aliens:

Print alien)

{ 'colour': 'green', 'Points': 5 }

{ 'colour': 'yellow', 'Points': 10 }

{ 'colour': 'Red', 'Points': 15 }

* Input function

name = input("please enter your name: ")

Print ("Hello, " + name + " !")

Please enter your name: Eric
Hello, Eric!

⇒ Height = input("How tall are you, in inches?")
height = int(height)
if height >= 36
 Print("\nyou're tall enough to ride!")

How tall are you in inches 71
You're tall enough to ride!

* While loops

```
current_number = 1  
while current_number <= 5:  
    Print(current_number)  
    current_number += 1
```

1
2
3
4
5

⇒ pets = ['dog', 'cat', 'dog', 'goldfish', 'cat', 'rabbit', 'cat']
Print(pets)
while 'cat' in pets:
 Pets.remove('cat')
Print(pets)

* Defining a Function

- ① `def greet_user():`
- ② `""" Display a Simple greeting """`
- ③ `Print ("Hello")`
- ④ `greet_user()`

Hello !

⇒ `def make_pizza (*toppings):`
 `""" Print the list of toppings that have`
 `been requested. """`
 `Print (toppings)`
`make_pizza ('pepperoni')`
`make_pizza ('mushrooms', 'green peppers', 'extra cheese')`
`('Pepperoni',)`
`('mushrooms', 'green peppers', 'extra cheese')`

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