

package

package is a collection of modules

eg: numpy,pandas,matplotlib...etc

module

module is a collection of functions

eg:math , datetime ... etc

function

function is a collection of statements

- **inbuilt functions** (add(),remove(),pop()...etc)
- **user defined functions**

math module

- add()
- sub()
- mul()

Rename a string 'fine' to 'dine'

```
a='fine'  
b=a[0]  
b='d'
```

b+'ine'

help()

provide help and enter -- q to exit

id()

gives the address memory location of a variable

constructor (**init**) internally assign the memory space

python is a variable concept there is no concept of constant

swap variable in python

```
a1 = 5  
b1 = 6
```

swaping values using two variables

```
a1,b1 = b1,a1  
  
print(a1)  
print(b1)  
  
6  
5  
  
a1= a1 + b1  
b1 = a1 - b1  
a1 = a1 - b1  
  
print(a1)  
print(b1)  
  
6  
5
```

swaping values using three variables

```
a1 = 5  
b1 = 6  
  
temp = a1  
a1 = b1  
b1 = temp
```

```
print(a1)
print(b1)
```

```
6
5
```

math module

```
import math as m
```

```
m.sqrt(25)
```

```
5.0
```

floor() --- gives the minimum value

```
m.floor(2.9)  # gives the minimum value
```

```
2
```

ceil() ---gives the maximum value

```
m.ceil(2.4)
```

```
3
```

pow() -- gives the exponentiation of value

```
m.pow(3,2)
```

```
9.0
```

```
m.pi
```

```
3.141592653589793
```

```
m.e
```

```
2.718281828459045
```

```
round(pow(3,6))
```

```
729
```

```
round(4.6)
```

```
5
```

optimization

Reduce length of code to speedup code to open frontend application

eg: amazon website,flipkart....etc

CIL

Command line interpreter