**MODULES IN PYTHON**

Every Python Script or Python File is a module, which is nothing but a group of functions, variables and classes saved to a file which can be reused across other modules.

**Create a new module in a project :**

Step 1:

A screenshot of a computer

Description automatically generated

Step 2:

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Step 3:

Leave the package (for time being), give the module name without any extension (screen shot below) and save Finish.

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Once you hit Finish, the below list will be populated.

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Initially select <Empty> and click Ok.

A white rectangular object with a shadow

Description automatically generated

This will create as below:

A white rectangular object with blue lines

Description automatically generated with medium confidence

**Create a module and use in another script / using alias name too:**

**Module**

*'''*

*Created on 25 Mar 2024*

**@author:** *kamal*

*'''*

def **sumOfTwoNumbers**(x,y):

return x+y

def **diffOfTwoNumbers**(x,y):

return x-y

**Code:**

import myMaths as ma

valA = int(input(*"Enter the value for value A : "*))

valB = int(input(*"Enter the value for value B : "*))

print(*"Addition of A+B : "*, ma.sumOfTwoNumbers(valA, valB))

print(*"Subtraction of A+B : "*, ma.diffOfTwoNumbers(valA, valB))

**Output:**

Enter the value for value A : 100

Enter the value for value B : 25

Addition of A+B : 125

Subtraction of A+B : 75

**Create a module and use in alternative way without import:**

**Module**

*'''*

*Created on 25 Mar 2024*

**@author:** *kamal*

*'''*

def **sumOfTwoNumbers**(x,y):

return x+y

def **diffOfTwoNumbers**(x,y):

return x-y

**Code:**

from myMaths import \*

valA = int(input(*"Enter the value for value A : "*))

valB = int(input(*"Enter the value for value B : "*))

print(*"Addition of A+B : "*,sumOfTwoNumbers(valA, valB))

print(*"Subtraction of A+B : "*,diffOfTwoNumbers(valA, valB))

**Output:**

Enter the value for value A : 25

Enter the value for value B : 15

Addition of A+B : 40

Subtraction of A+B : 10

**Use in built Maths Module:**

**Code:**

from math import \*

print(sqrt(9))

print(ceil(8.2))

print(floor(7.9))

print(fabs(-2.25))

**Output:**

3.0

9

7

2.25

**Display all functions in Maths Module:**

**Code:**

# PRINT ALL THE MEMBERS OF THE math MODULE

lst = list(dir())

# THIS FUNCTION BELOW WILL DISPLAY THE DETAILED DESCRIPTION ABOUT THE MODULE PASSED

# help(math) 🡪 WILL PROVIDE ALL THE DETAILS REGARDING MATH

for i in lst:

print(*" Maths Functions - "*, i)

**Output:**

**INBUILT MEMBERS (available for every python file which we create by default**

Maths Functions - \_\_annotations\_\_

Maths Functions - \_\_builtins\_\_

Maths Functions - \_\_cached\_\_

Maths Functions - \_\_doc\_\_

Maths Functions - \_\_file\_\_

Maths Functions - \_\_loader\_\_

Maths Functions - \_\_name\_\_

Maths Functions - \_\_package\_\_

Maths Functions - \_\_spec\_\_

**MATH MEMBERS**

Maths Functions - acos

Maths Functions - acosh

Maths Functions - asin

Maths Functions - asinh

Maths Functions - atan

Maths Functions - atan2

Maths Functions - atanh

Maths Functions - cbrt

Maths Functions - ceil

Maths Functions - comb

Maths Functions - copysign

Maths Functions - cos

Maths Functions - cosh

Maths Functions - degrees

Maths Functions - dist

Maths Functions - e

Maths Functions - erf

Maths Functions - erfc

Maths Functions - exp

Maths Functions - exp2

Maths Functions - expm1

Maths Functions - fabs

Maths Functions - factorial

Maths Functions - floor

Maths Functions - fmod

Maths Functions - frexp

Maths Functions - fsum

Maths Functions - gamma

Maths Functions - gcd

Maths Functions - hypot

Maths Functions - inf

Maths Functions - isclose

Maths Functions - isfinite

Maths Functions - isinf

Maths Functions - isnan

Maths Functions - isqrt

Maths Functions - lcm

Maths Functions - ldexp

Maths Functions - lgamma

Maths Functions - log

Maths Functions - log10

Maths Functions - log1p

Maths Functions - log2

Maths Functions - modf

Maths Functions - nan

Maths Functions - nextafter

Maths Functions - perm

Maths Functions - pi

Maths Functions - pow

Maths Functions - prod

Maths Functions - radians

Maths Functions - remainder

Maths Functions - sin

Maths Functions - sinh

Maths Functions - sqrt

Maths Functions - sumprod

Maths Functions - tan

Maths Functions - tanh

Maths Functions - tau

Maths Functions - trunc

Maths Functions - ulp

**Random Modules:**

**random**

The random function will always display the randomly generated number between 0 and 1.

It will not include 0 or 1

**Code:**

#RANDOM DEMO

from random import \*

for i in range(10):

print(random())

**Output:**

0.12066970036862923

0.3480864885188443

0.32056945631995004

0.8534991209831239

0.4260690920470094

0.7728986194505809

0.06267534401715602

0.3446050531733902

0.6431337690189786

0.4430200966340845

**randint**

The randint function will take two number ie from number and two number.

It will include both the two numbers

**Code:**

from random import \*

#RANDINT

for i in range(5):

print(randint(1,50))

**Output:**

7

37

15

4

40

**uniform**

The uniform function will take two number ie from number and two number and generate floating numbers.

It will not include both the two numbers

**Code:**

from random import \*

#RANDINT

for i in range(5):

print(uniform(1,50))

**Output:**

43.267162441743594

40.012645622741175

45.89005710837705

24.44348397706375

6.107067865298575

**randrange**

The range function will generate random numbers with in the range. We can also pass in the stop and the step value too..

It will not include both the two numbers

**Code:**

#RANDRANGE

for i in range(7):

print(randrange(20))

#RANDRANGE WITH START AND END VALUE

for i in range(5):

print(randrange(100,150))

#RANDRANGE WITH START AND END VALUE WITH STEP

for i in range(5):

print(randrange(100,150,5))

**Output:**

1

15

7

19

11

12

4

109

109

145

132

105

140

120

100

130

145

**choice**

The choice function will randomly pick the course from the list what we provided. Since we have the range 10, it keeps picking the items from the list 9 times.

**Code:**

#CHOICE FUNCTION

lst = [*"java"*, *"python"*, *"c#"*, *"c"*, *"c++"*, *"devops"*, *"aws"*]

for i in range(9):

print(choice(lst)

**Output:**

c

java

c

aws

java

python

c#

aws

c#

**QUIZ**

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