

Module 11 Python Modules and Packages

Modules:

- ☐ Modules in python are simply Python files with .py extension.
- ☐ The name of the module will be the name of the file.
- ☐ Python module can have set of variables, functions and classes.

Packages:

- ☐ Packages are directories which contain modules and also subpackages.

math module:

- ☐ math module provides access to the mathematical functions.

- ☐ To use this module we need to write : import math

ceil(n) : Returns the next integer number of the given number.

floor(n): Returns the previous integer number of the given number.

sqrt(n): Returns the square root of the given number.

pow(x, y): Returns base to raise to the exp power.

sin(n): Returns sine of the given radian.

cos(n): Returns cosine of the given radian.

tan(n) :Returns tangent of the given radian.

random module:

- ☐ random module can be used to generate random integers and floating point numbers.

- ☐ We can use if for:

- ☐ Generating OTP

- ☐ Pick a random card from a deck of cards.

- ☐ Flip a coin.

- ☐ Generating passwords.

- ☐ To use this module we need to write : import random

randrange(stop):

- ☐ It will produce a random integer value in the range of 0 to stop-1.

randrange(start, stop):

- ☐ start → base value of the range(inclusive).

- ☐ stop → boundary value of the range(exclusive).

randrange(start, stop, stepsize):

- ❑ start → base value of the range(inclusive).
- ❑ stop → boundary value of the range(exclusive).
- ❑ step → value with which number is incremented. Default 0.

random():

- ❑ It will generate a random floating point number in the range of 0.0 and 1.0.

random.randint(a, b)

- ❑ Return a random integer N such that $a \leq N \leq b$. Alias for randrange(a, b+1).

datetime module:

- ❑ **datetime module** provides with classes for working with date and time.
- ❑ To use this module we need to write : import datetime

datetime.now(): This method provides current date and time.

- ❑ It also provides the following attributes:
 - ❑ day → between 1 and number of days in the given month of the given year,
 - ❑ month → between 1 and 12 inclusive,
 - ❑ year → current year,
 - ❑ hour → in range(24),
 - ❑ min → in range(60),
 - ❑ sec → in range(60)and
- ❑ microsecond → in range(1000000)

datetime.now().date(): It returns date with year, month and day

datetime.now().time(): It returns time with hour, min, sec and ms.
