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Lecture No. 9: Python Modules

Subject Teacher
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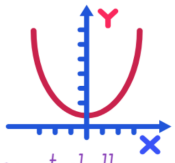

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Python Modules

Python Modules

Date and Time in Python:

Definition:

Python provides a module named datetime to deal with dates and times.
It allows you to set date , time or both date and time using the date() , time() and datetime() functions respectively, after importing the datetime module.

Python Modules

Date and Time in Python:

Example:

```
import datetime
feb_16_2019= datetime.date(year=2019, month=2,
day=16)
feb_16_2019 = datetime.date(2019, 2, 16)
print(feb_16_2019)                          #2019-02-16
time_1_48min_5sec =
```

Python Modules

Date and Time in Python:

Example:

```
datetime.time(hour=13, minute=48, second=5)
time_13_48min_5sec = datetime.time(13, 48, 5)
print(time_13_48min_5sec)          #13:48:05 timestamp=
datetime.datetime(year=2019, month=2, day=16,
hour=13, minute=48, second=5)
timestamp = datetime.datetime(2019, 2, 16, 13, 48, 5)
print (timestamp)                  #2019-01-02 13:48:05
#Output:
2019-02-16
13:48:05
2019-02-16 13:48:05
```

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Date and Time in Python:

Output:

File Edit View Run Kernel Settings Help Trusted

Code Python 3

```
[4]: import datetime
feb_16_2019 = datetime.date(year=2019, month=2, day=16)
feb_16_2019 = datetime.date(2019, 2, 16)
print(feb_16_2019) #2019-02-16
time_13_48min_5sec = datetime.time(hour=13, minute=48, second=5)
time_13_48min_5sec = datetime.time(13, 48, 5)
print(time_13_48min_5sec) #13:48:05
timestamp= datetime.datetime(year=2019, month=2, day=16, hour=13, minute=48, second=5)
timestamp = datetime.datetime(2019, 2, 16, 13, 48, 5)
print (timestamp) #2019-01-02 13:48:05
```

```
2019-02-16
13:48:05
2019-02-16 13:48:05
```

```
[ ]:
```

Python Modules

Aliasing with 'as' keyword:

Definition:

In Python, the as keyword can be used to give an alternative name as an alias for a Python module or function.

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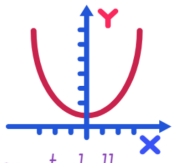

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Aliasing with 'as' keyword:

Example:

Aliasing matplotlib.pyplot as plt
from matplotlib import pyplot as plt
plt.plot(x, y)
Aliasing calendar as c
import calendar as c
print(*c.month_name*[1])

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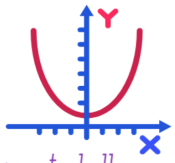

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Import Python Modules:

Definition:

The Python import statement can be used to import Python modules from other files.
Modules can be imported in three different ways: import module , from module import functions , or from module import * . from module import * is discouraged, as it can lead to a cluttered local namespace and can make the namespace unclear.

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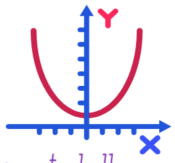

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Import Python Modules:

Example:

```
# Three different ways to import modules:
# First way
import module
module.function()
# Second way from module import function
function()
# Third way
from module import *
function()
```

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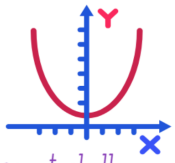

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random.randint() and random.choice():

Definition:

In Python, the random module offers methods to simulate non-deterministic behavior in selecting a random number from a range and choosing a random item from a list.
The randint() method provides a uniform random selection from a range of integers. The choice() method provides a uniform selection of a random element from a sequence.

Python Modules

random.randint() and random.choice():

Example:

```
# Returns a random integer N in a given range, such that start ≤ N ≤ end
# random.randint(start, end)
r1 = random.randint(0, 10)
print(r1)              # Random integer where 0 ≤ r1 ≤ 10
# Prints a random element from a sequence
seq = ["a", "b", "c", "d", "e"]
r2 = random.choice(seq)
print(r2)              # Random element in the sequence
```

Python Modules

Module importing:

Definition:

In Python, you can import and use the content of another file using import filename , provided that it is in the same folder as the current file you are writing.

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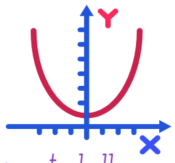

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Module importing:

Example:

```
# file1 content
# def f1_function():
# return "Hello World"
# file2
import file1
# Now we can use f1_function, because we imported
file1
f1_function()
```