

strip()	Remove spaces at the beginning and at the end of the string:
startswith()	Returns true if the string starts with the specified value
title()	Converts the first character of each word to upper case
translate()	Returns a translated string
upper()	Converts a string into upper case

VIII. Resources required

Sr. No.	Name of Resource	Specification	Quantity	Remarks (If any)
1.	Computer System	Computer (i3-i5 preferable RAM>2GB)	As per Batch Size	For ALL Experiments
2.	Operating System	Windows/Linux		
3.	Development Software	Pyhton IDE		

IX. Resources used (Additional)

Sr. No.	Name of Resource	Specification	Quantity	Remarks (If any)
1.	Computer System	RYZEN 5500		
2.	Operating System	WINDOWS 10	1	—
3.	Development Software	PYCHARM		

X. Practical related Questions

Note: Below given are few sample questions for reference. Teachers must design more such questions to ensure the achievement of identified CO.

1. Describe about string formatting operator with example.
2. Give the syntax and example of title() and capitalize() methods.
3. Give the syntax and significance of string functions: title() and strip().

(Space for answers)

ANS.1

— THE "%s" OPERATION IS FOLLOWED BY
A FORMAT STRING CONTAINING
PLACE HOLDERS AND THE VALUES TO
REPLACE THEM AFTER A "%s"

Eg. name = "SPECFIRE"
str_my = "My name is %s" % (name)

ANS. 2

`toupper()`

— RETURNS A COPY OF THIS STRING WITH THE FIRST CHARACTER OF EACH WORD CONVERTED TO UPPERCASE AND REST TO LOWERCASE

SYN → `string.toupper()`

Eg → `s = "Hello word"`

`print(s.toupper()) # Hello Word`

XI. Exercise

Note: Faculty must ensure that every group of students use different input value.

(Use blank space for answers or attach more pages if needed)

1. Write a Python function that accepts a string and calculate the number of upper case letters and lower case letters.
2. Write a Python program to generate a random float where the value is between 5 and 50 using Python math module.

(Space for answers)

`capitalize()`

— RETURNS COPY OF STRING WITH FIRST LETTER UPPERCASE AND REST UNCHANGED

SYN → `string.capitalize()`

Eg → `s = "John"`

`print(s.capitalize()) # John`

ANS. 3

Schnupf

— USED TO REMOVE LEADING
AND TRAILING WHITESPACE
CHARACTERS.

~~S.M.~~ → S. Shipp C.J.

IX. Resources used (Additional)

Sr. No.	Name of Resource	Specification	Quantity	Remarks (If any)
1.	Computer System	HYDRI 5500		
2.	Operating System	WIN 10	1	—
3.	Development Software	PYCHARM		

X. Practical related Questions

Note: Below given are few sample questions for reference. Teachers must design more such questions to ensure the achievement of identified CO.

1. What is the output of the following program?

```
def myfunc(text, num):
    while num > 0:
        print(text)
        num = num - 1
myfunc('Hello', 4)
```

2. What is the output of the following program?

```
num = 1
def func():
    num = 3
    print(num)
func()
print(num)
```

(Space for answers)

ANS. 1

INFINITE LOOP THAT PRINTS "Hello"

ANS. 2

VIII. Resources required

Sr. No.	Name of Resource	Specification	Quantity	Remarks (If any)
1.	Computer System	Computer (i3-i5 preferable RAM>2GB)	As per Batch Size	For ALL Experiments
2.	Operating System	Windows/Linux		
3.	Development Software	Pyhton IDE		

IX. Resources used (Additional)

Sr. No.	Name of Resource	Specification	Quantity	Remarks (If any)
1.	Computer System	IN 2 AM 5 560		
2.	Operating System	WIN 10	1	—
3.	Development Software	PYTHON		

X. Practical related Questions

Note: Below given are few sample questions for reference. Teachers must design more such questions to ensure the achievement of identified CO.

1. What is the output of the following program?

```
import math
print math.sqrt(25)
print math.pi
print math.degrees(2)
print math.radians(60)
print math.sin(2)
print math.cos(0.5)
print math.tan(0.23)
print math.factorial(4)
```

2. What is the output of the following program?

```
import random
print random.randint(0, 5)
print random.random()
print random.random() * 100
List = [1, 4, True, 800, "Python", 27, "hello"]
print random.choice(List)
```

3. What is the output of the following program?

```
import datetime
from datetime import date
import time
print time.time()
print date.fromtimestamp(454554)
```

(Space for answers)

ANS. 1

SYNTAX ERROR - MISSING PARENTHESIS

DEBUGGED → 5.0

3.141592653589793
114.59155902616465
1.047197551115128
0.90929752276237
0.8775818804691
0.234112832542
24

ANS. 2

SYNTAX ERROR → MISSING PARENTHESIS

DEBUGGED → 2

0.324878172564

31.18187952314

Python

XI. Exercise

Note: Faculty must ensure that every group of students use different input value.

(Use blank space for answers or attach more pages if needed)

1. Write a Python program to create a user defined module that will ask your college name and will display the name of the college.
2. Write a Python program that will calculate area and circumference of circle using inbuilt Math Module
3. Write a Python program that will display Calendar of given month using Calendar Module

(Space for answers)

ANS. 3

SYNTAX ERROR - MISSING PARENTHESIS

D GBUQED —

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1970-01-06

QUESTION ANSWERED BY [REDACTED]

ANSWER PROVIDED BY [REDACTED]

MISSING PARENTHESIS

ANSWER PROVIDED BY [REDACTED]

```
print("Models of Mahendra")
for model in self.models:
    print("\t%s '% model)
```

3. Finally we create an `__init__.py` file inside the directory, to let Python know that the directory is a package.

Filename=`__init__.py`

`from Maruti import Maruti`

`from Mahindra import Mahindra`

4. To access package car, create `sample.py` file and access classes from directory car

Filename=`sample.py`

`from Maruti import Maruti`

`from Mahindra import Mahindra`

`ModelMaruti=Maruti()`

`ModelMaruti.PModel()`

`ModelMahindra=Mahindra()`

`ModelMahindra.PModel()`

Output:

Models of Maruti

800

Alto

WagonR

Models of Mahendra

Scorpio

Bolero

Xylo

VIII. Resources required

Sr. No.	Name of Resource	Specification	Quantity	Remarks (If any)
1.	Computer System	Computer (i3-i5 preferable RAM>2GB)	As per Batch Size	For ALL Experiments
2.	Operating System	Windows/Linux		
3.	Development Software	Pyhton IDE		

IX. Resources used (Additional)

Sr. No.	Name of Resource	Specification	Quantity	Remarks (If any)
1.	Computer System	RYZEN 5 5500		
2.	Operating System	WIN 10	1	~
3.	Development Software	P YTHON		

X. Practical related Questions

Note: Below given are few sample questions for reference. Teachers must design more such questions to ensure the achievement of identified CO.

1. Describe Numpy Array
2. Why should we use Numpy rather than Matlab, Octave or Yorick?

(Space for answers)

ANS.1

- NumPy ARRAY IS A CENTRAL DATA STRUCTURE OF NumPy LIBRARY, PACKAGE FOR SCIENTIFIC COMPUTING IN PYTHON.
- IT PROVIDE MULTI-DIMENSIONAL ARRAYS AND MATRICES ALONG WITH MATH FUNCTIONS TO OPERATE ON THESE ARRAYS.

ANS.2

- OPEN SOURCE
- COMMUNITY SUPPORT
- PERFORMANCE
- PYTHON Ecosystem

XI. Exercise

Note: Faculty must ensure that every group of students use different input value.

(Use blank space for answers or attach more pages if needed)

1. Write a Python program to create two matrices and perform addition, subtraction, multiplication and division operation on matrix.
2. Write a Python program to concatenate two strings.
3. Write a NumPy program to generate six random integers between 10 and 30.

(Space for answers)

class from which this
ass.
can access all the data
class can also provide
s.

Programming with Python (22616)

```
# variable of class A
# functions of class A
class B:
    # variable of class A
    # functions of class A
class C(A, B):
    # class C inheriting property of both class A and B
    # add more properties to class C
```

Example:

```
class Add:
    def Addition(self,a,b):
        return a+b;
class Mul:
    def Multiplication(self,a,b):
        return a*b;
class Derived(Add,Mul):
    def Divide(self,a,b):
        return a/b;
d = Derived()
print(d.Addition(10,20))
print(d.Multiplication(10,20))
print(d.Divide(10,20))
```

Output:

```
30
200
0.5
```

VIII. Resources required

Sr. No.	Name of Resource	Specification	Quantity	Remarks (If any)
1.	Computer System	Computer (i3-i5 preferable RAM>2GB)	As per Batch Size	For ALL Experiments
2.	Operating System	Windows/Linux		
3.	Development Software	Pyhton IDE		

IX. Resources used (Additional)

Sr. No.	Name of Resource	Specification	Quantity	Remarks (If any)
1.	Computer System	ILY 2GN 5500		
2.	Operating System	WIN 10	1	—
3.	Development Software	PYTHON		

X. Practical related Questions

Note: Below given are few sample questions for reference. Teachers must design more such questions to ensure the achievement of identified CO.

1. State the use of inheritance
2. List different types of inheritance

ANS. 1

(Space for answers)

[USES OF INHERITANCE]

- CODE REUSABILITY
- MODULARITY
- POLYHORPHISM

ANS. 2

[TYPES]

- SINGLE
- MULTIPLE
- HIERARCHICAL
- MULTILEVEL
- HYBRID
- CYCLIC

XI. Exercise

Note: Faculty must ensure that every group of students use different input value.
(Use blank space for answers or attach more pages if needed)

1. Create a class Employee with data members: name, department and salary. Create suitable methods for reading and printing employee information
2. Python program to read and print students information using two classes using simple inheritance.
3. Write a Python program to implement multiple inheritance

(Space for answers)