

# VASAVI COLLEGE OF ENGINEERING

(AUTONOMOUS)  
(Affiliated to Osmania University)  
Hyderabad - 500 031.

DEPARTMENT OF

: CSE

NAME OF THE LABORATORY : PP LAB

Name K. Sree Indira Sivani Roll No. 1602-21-733-052 Page No. 130

## PRELAB QUESTIONS:11

- 1) Give an example on creating a class and functions inside a class in python:

class student :

    count = 0

    def read(self):

        self.name = input("Enter your name: ")  
        self.rno = int(input("Enter roll no: "))

    def display(self):

        print (self.name)

        print (self.rno)

obj1 = student()

obj1.read()

obj1.display()

- 2) How to create objects of a class in python? Give example.

A: Once a class is defined; we can create object of that class. The objects can access the class variables & methods using '.' operator.

\* Example:

class details:

    def read(self):

        self.name = input (" Enter your name: ")

# VASAVI COLLEGE OF ENGINEERING

(AUTONOMOUS)  
(Affiliated to Osmania University)  
Hyderabad - 500 031.

DEPARTMENT OF : CSE

NAME OF THE LABORATORY : PPLAB.

Name K.S.I.Sivani

Roll No. 1602-21-733-052

Page No. 131

```
sey.age = int(input("Enter your age:"))

def print(self):
    print("Name:", self.name)
    print("Age:", self.age)

p = details()
p.read()
p.print()
```

- 3) What are attributes and methods in a class in python? How to modify attribute values of an instance(object) of a class in python?
- \* Attributes in a class are also called class variables since they only have a single copy for every instance/object. These do not have a separate copy for all instances instead, modifies the original copy if specified.
- \* Methods in a class consists of instance variables which creates their own copy for every instance call. All the objects created will have different/separate copy of each instance variable.
- To modify the values of instance variables we need to mention it as: **classname.classvariable + 1**

- 4) Create a class using `__init__()` method in python. When does the `__init__()` method get called?

class info:

```
def __init__(self, r):
    self.radius = r
```

# VASAVI COLLEGE OF ENGINEERING

(AUTONOMOUS)  
(Affiliated to Osmania University)  
Hyderabad - 500 031.

DEPARTMENT OF : CSE

NAME OF THE LABORATORY : PPLAB

Name K. Sri India Sivani Roll No. 1602-21-733-052 Page No. 132

~~def area(self):~~

c = info(7)  
print ("area = ", ((c \* radius) \*\* 2) \* 3.14)

- \* The constructor is called when the object of that class is created.
- 5) Write a function that returns an object of a class.
- 6) Give definitions and examples for the terms - class, constructor, attribute, initialize method, instance / object, method in python.
- \* Class: A class creates a new type / datatype and object is an instance (variable) of the class. Classes provide a blue print or a template using which objects are created.
- \* Constructor: The constructor (`__init__` method) is automatically executed when the object is created. It is used to initialize the variables of the class objects.
- \* instance / object: An object is simply a collection of data variables and methods that act on those data.
- \* attribute: Variables of classes that are shared between all of its instances

# VASAVI COLLEGE OF ENGINEERING

(AUTONOMOUS)  
(Affiliated to Osmania University)  
Hyderabad - 500 031.

DEPARTMENT OF

: CSE

NAME OF THE LABORATORY : PP LAB

Name K. Sree Indira Sivani Roll No. 1602-21-733-052 Page No. 133.

## PRELAB PROGRAMS : 11

1) Define a class which has atleast 2 methods:

getstring: to get a string from console input

printstring: to print the string in uppercase

Also please include simple test function to test the class methods.

class string:

```
def getstring(self):  
    self.s=input("Enter the string:")
```

```
def printstring(self):
```

```
    print("Edited:", self.s.upper())
```

```
s=string()
```

```
s.getstring()
```

```
s.printstring()
```

O/P:

Enter the  
string: sivani

Edited: SIVANI

2) Write a python class to reverse a string word by word.

\* class string:

```
def getstring(self):
```

```
    self.s=input("Enter the string:")
```

```
def reverse(self):
```

```
    return " ".join(reversed(self.s.split()))
```

O/P:

Enter the string:  
python programming

programming  
python

```
n=string()
```

```
n.getstring()
```

```
print(n.reverse())
```

# VASAVI COLLEGE OF ENGINEERING

(AUTONOMOUS)  
(Affiliated to Osmania University)

Hyderabad - 500 031.

DEPARTMENT OF

: CSE

NAME OF THE LABORATORY : PPLAB

Name K.Sree Indira Divani Roll No. 1602-21-733-052 Page No. 134

3) Write a python class to implement pow(x,n):

class power:

def pow(self, x, n):

if x==0 (or) x==1 (or) n==1:

return x

elif n==0:

return 1

else:

return x \* pow(x, n-1).

y = int(input("Enter the number:"))

m = int(input("Enter the exponent:"))

num = power()

print(y, "to the power", m, "is", num.pow(y, m))

O/P:

Enter the number: 5

Enter the exponent: 3

5 to the power 3 is 125.

# VASAVI COLLEGE OF ENGINEERING

(AUTONOMOUS)  
(Affiliated to Osmania University)

Hyderabad - 500 031.

DEPARTMENT OF

: CSE

NAME OF THE LABORATORY : PP LAB

Name K' Sree Indira Savani

Roll No. 1602-21-733-052 Page No. 135

## LAB PROGRAMS - 10

- 1) Write a python class named Rectangle constructed by a length and width and a method which will compute the area of a rectangle:

class Rectangle:

```
def __init__(self, l, b):  
    self.length = l  
    self.breadth = b
```

```
def area(self):
```

```
    return (self.length * self.breadth).
```

```
x = int(input("Enter the length:"))
```

```
y = int(input("Enter the breadth:"))
```

```
rect = Rectangle(x, y)
```

```
print("Area of Rectangle:", rect.area())
```

O/P:

Enter the length: 5

Enter the breadth: 4

Area of Rectangle: 20.

- 2) Create a class student with attributes name and roll no and a method dataprint() for displaying the same. Create two instances of the class and call the method for each instance

class student:

```
def details(self):
```

```
    self.name = input("Enter the name: ")
```

```
    self.no = int(input("Enter the roll no: "))
```

```
    print("Name:", self.name)
```

```
    print("Roll no:", self.no)
```

```
def dataprint(self):
```

# VASAVI COLLEGE OF ENGINEERING

(AUTONOMOUS)  
(Affiliated to Osmania University)  
Hyderabad - 500 031.

DEPARTMENT OF : CSE

NAME OF THE LABORATORY : PPLAB

Name K.S.I.Sivani Roll No. 1602-21-733-052 Page No. 136

self.details()

```
stu1 = student()
stu1.dataprint()
stu2 = student()
stu2.dataprint()
```

O/P:

Enter the name: sivani

Enter the roll no: 52

Name: sivani

Roll no: 52

Enter the name: sravani

Enter the roll no: 26

Name: sravani

Roll no: 26

- 3) Create a class car with attributes model, year and price and a method cost() for displaying price. Create 2 instances of the class and call the method for each instance.

class car:

```
def details(self):
    self.model = int(input("Enter the model code:"))
    self.year = int(input("Enter the year of launch:"))
    self.price = float(input("Enter the price:"))
```

```
def cost(self):
```

```
    print("Cost of the car: Rs", self.price)
```

# VASAVI COLLEGE OF ENGINEERING

(AUTONOMOUS)  
(Affiliated to Osmania University)

Hyderabad - 500 031.

DEPARTMENT OF : CSE

NAME OF THE LABORATORY : PP LAB

Name K.S.I.Sivani

Roll No. 1602-21-733-D52

Page No.

137

c1 = car1()  
c2 = car1()  
c1.details()  
c2.details()  
c1.cost()  
c2.cost()

O/P: Enter the model code: 1518  
Enter the year of launch: 2018.  
Enter the price: 700000  
Enter the model code: 1315.  
Enter the year of launch: 2022  
Enter the price: 2000000  
Cost of the car: Rs 70000  
Cost of the car: Rs 2000000

- 4) Create a class employee with attributes name and salary and a method displayEmployee() to display the details of employee. Create two instance and call the method for each instance. Also find the total no. of employees.

Class employee:

count = 0.

def details(self):  
    self.name = input("Enter your name: ")  
    self.salary = int(input("Enter your salary: "))  
    employee.count += 1

def display(self):  
    print("Name:", self.name)  
    print("Salary:", self.salary).

n = int(input("Enter the no. of employees: ")).

l = []

for i in range(n):

# VASAVI COLLEGE OF ENGINEERING

(AUTONOMOUS)  
(Affiliated to Osmania University)  
Hyderabad - 500 031.

DEPARTMENT OF : CSE

NAME OF THE LABORATORY : PPLAB

Name K.S.I.Sivani Roll No. 1602-21-733-D52 Page No. 138

```
l.append(employee())
l[i].details()
for i in range(n):
    l[i].display()
print("Total no. of employees:", employee.count).
```

O/P:

Enter the no. of employees: 2

Enter your name: Ram

Enter your salary: 50000

enter your name: Arjun

Enter your salary: 55000

Name: Ram

Salary: 50000

Name: Arjun

Salary: 55000

Total no. of employees: 2.