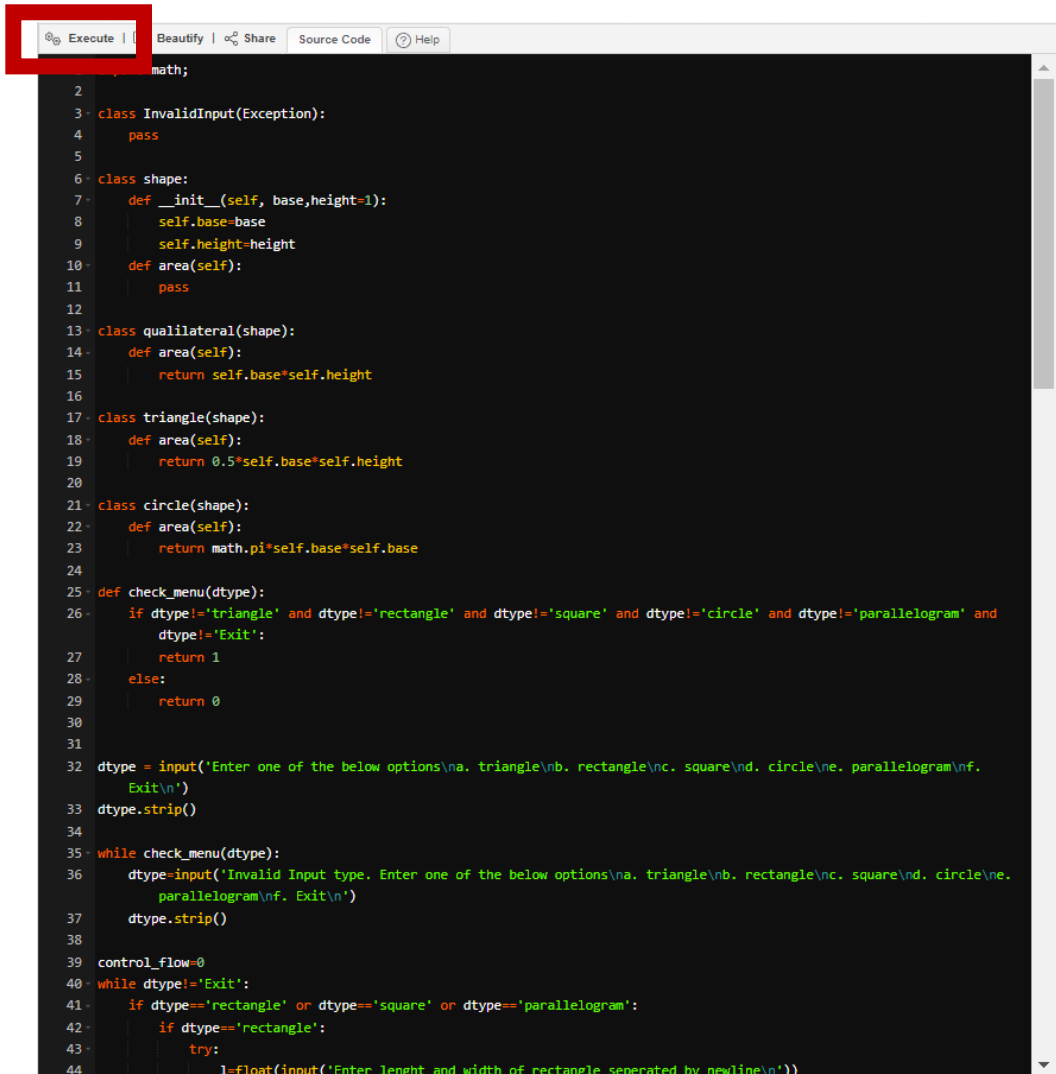


Write a program/function in any Object-Oriented programming language that will perform the following functions, when the program is executed, to demonstrate the features of an OOP language—ADT, inheritance, and polymorphism:

Steps for execution

1. Copy the code from ***“Advanced Software Paradigms_CSCI_6221_10_Sagar_Sheth_HW6.txt”***.
2. Open the below link in the web browser.
 - a. https://www.tutorialspoint.com/online_python_compiler.php
3. Paste the Code in and Click on the Execute Button.



```
1 import math;
2
3 class InvalidInput(Exception):
4     pass
5
6 class shape:
7     def __init__(self, base,height=1):
8         self.base=base
9         self.height=height
10    def area(self):
11        pass
12
13 class qualilateral(shape):
14     def area(self):
15         return self.base*self.height
16
17 class triangle(shape):
18     def area(self):
19         return 0.5*self.base*self.height
20
21 class circle(shape):
22     def area(self):
23         return math.pi*self.base*self.base
24
25 def check_menu(dtype):
26     if dtype!='triangle' and dtype!='rectangle' and dtype!='square' and dtype!='circle' and dtype!='parallelogram' and dtype!='Exit':
27         return 1
28     else:
29         return 0
30
31
32 dtype = input('Enter one of the below options\na. triangle\nb. rectangle\nc. square\nd. circle\ne. parallelogram\nf. Exit\n')
33 dtype.strip()
34
35 while check_menu(dtype):
36     dtype=input('Invalid Input type. Enter one of the below options\na. triangle\nb. rectangle\nc. square\nd. circle\ne. parallelogram\nf. Exit\n')
37     dtype.strip()
38
39 control_flow=0
40 while dtype!='Exit':
41     if dtype=='rectangle' or dtype=='square' or dtype=='parallelogram':
42         if dtype=='rectangle':
43             try:
44                 l=float(input('Enter lenght and width of rectangle seperated by newline\n'))
```

4. The below output should be displayed on the terminal.

```
Terminal
Enter one of the below options
a. triangle
b. rectangle
c. square
d. circle
e. parallelogram
f. Exit
triangle
Enter Base and Height of triangle seperated by newline
10
5
Area of Triangle is
25.0
Enter one of the below options
a. triangle
b. rectangle
c. square
d. circle
e. parallelogram
f. Exit
circle
Enter radius of Circle
9
Area of Circle is
254.46900494077323
Enter one of the below options
a. triangle
b. rectangle
c. square
d. circle
e. parallelogram
f. Exit
rectangle
Enter lenght and width of rectangle seperated by newline
a
Input Value can not be a string.
Value has to be a real positive number
Enter lenght and width of rectangle seperated by newline
9
10
Area of Rectangle is
90.0
Enter one of the below options
a. triangle
b. rectangle
c. square
d. circle
```

Enter one of the below options

- a. triangle
- b. rectangle
- c. square
- d. circle
- e. parallelogram
- f. Exit

square

Enter side of Square

4

Area of Square is

16.0

Enter one of the below options

- a. triangle
- b. rectangle
- c. square
- d. circle
- e. parallelogram
- f. Exit

Exit