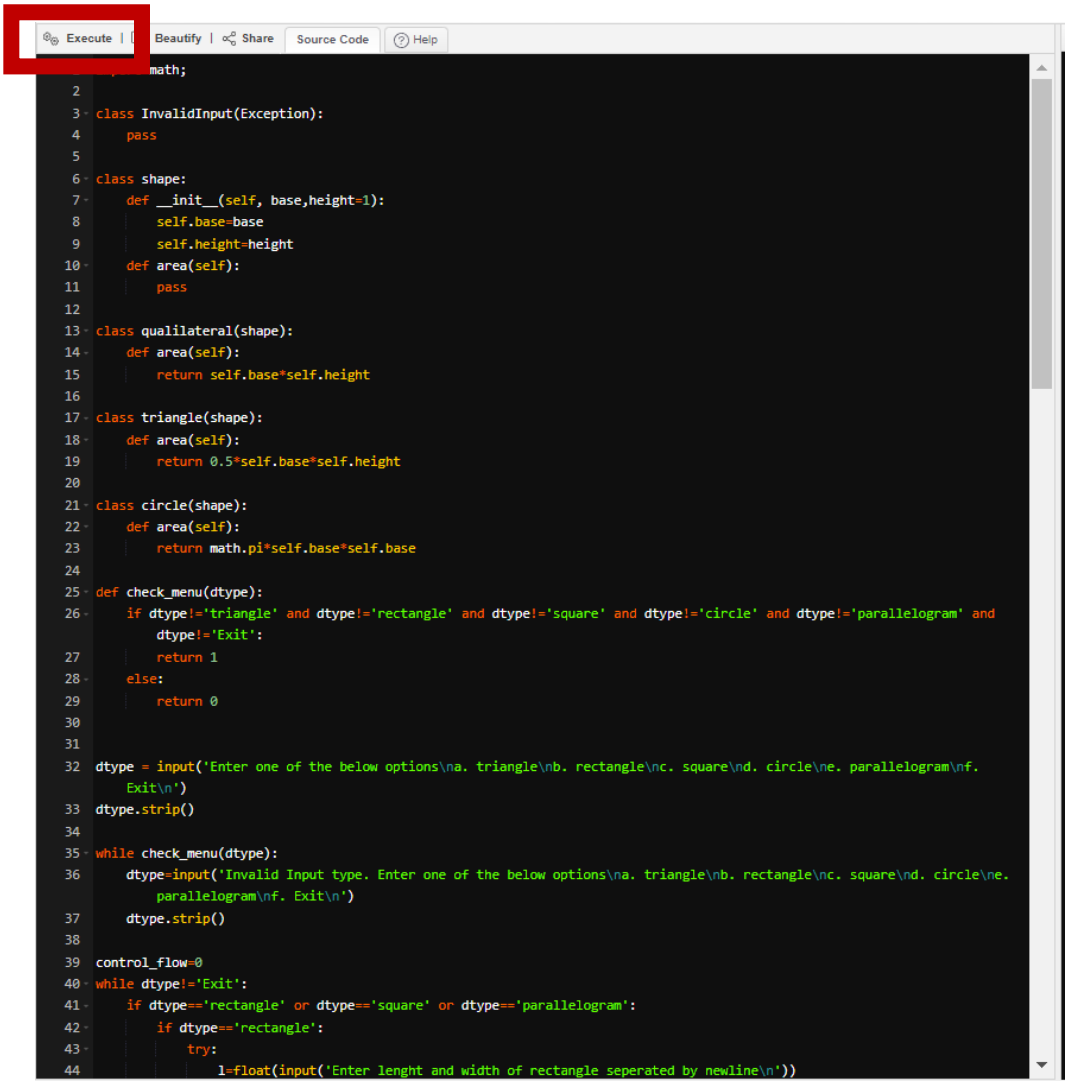
Write a program/function in any Object-Oriented programming language that will perform the following functions, when the program is executed, to demonstrate the features of an OOP language—ADT, inheritance, and polymorphism:

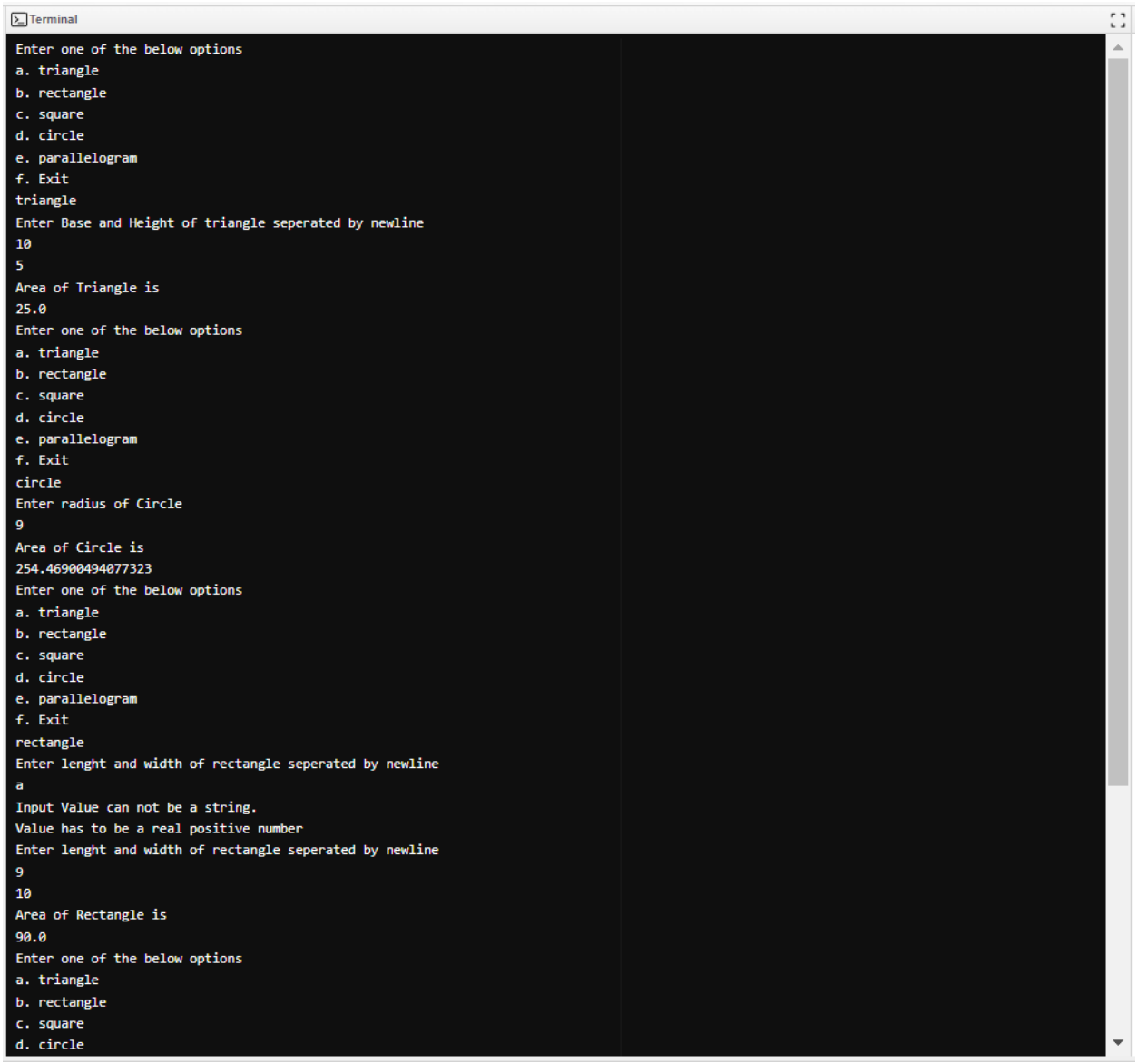
Steps for execution

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.




```
math;

class InvalidInput(Exception):
    pass

class shape:
    def __init__(self, base,height=1):
        self.base=base
        self.height=height
    def area(self):
        pass

class qualilateral(shape):
    def area(self):
        return self.base*self.height

class triangle(shape):
    def area(self):
        return 0.5*self.base*self.height

class circle(shape):
    def area(self):
        return math.pi*self.base*self.base

def check_menu(dtype):
    if dtype!='triangle' and dtype!='rectangle' and dtype!='square' and dtype!='circle' and dtype!='parallelogram' and
        dtype!='Exit':
        return 1
    else:
        return 0


dtype = input('Enter one of the below options\na. triangle\nb. rectangle\nc. square\nd. circle\ne. parallelogram\nf.
    Exit\n')
dtype.strip()

while check_menu(dtype):
    dtype=input('Invalid Input type. Enter one of the below options\na. triangle\nb. rectangle\nc. square\nd. circle\ne.
        parallelogram\nf. Exit\n')
    dtype.strip()

control_flow=0
while dtype!='Exit':
    if dtype=='rectangle' or dtype=='square' or dtype=='parallelogram':
        if dtype=='rectangle':
            try:
                l=float(input('Enter lenght and width of rectangle seperated by newline\n'))
```

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



```
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
```