**PYTHON CODE:**

# importing math module

import math

class areas():

def \_\_init\_\_(self, side1, side2):

self.side1 = side1

self.side2 = side2

def square(self):

return self.side1 \* self.side1

def triangle(self):

print(0.5 \* self.side1 \* self.side2)

def rectangle(self):

print(self.side1 \* self.side2)

class volumes():

def \_\_init\_\_(self, radius, height):

self.radius = radius

self.height = height

def cone(self):

print(0.33 \* math.pi \* self.radius \* self.radius \* self.height)

def cylinder(self):

print(math.pi \* self.radius \* self.radius \* self.height)

class cube\_volume(areas):

def \_\_init\_\_(self, side, side1, side2):

areas.\_\_init\_\_(self, side1, side2)

self.side = side

def cube1(self):

C\_V = areas.square(self)

print(C\_V \* side)

if \_\_name\_\_ == "\_\_main\_\_":

while(True):

print("Enter the choice:")

print("1. calculate areas")

print("2. calculate volumes")

print("3. calculate volume of cube")

user\_choice = input("enter selection1\n")

user\_choice = int(user\_choice)

if user\_choice == 1:

print("select 2D shape")

print("1. square")

print("2. triangle")

print("3. rectangle")

selection1 = int(input("enter choice: "))

if selection1 == 1:

side1 = int(input("enter the side: "))

side2 = side1

o1 = areas(side1, side2)

o1.square()

elif selection1 == 2:

side1 = int(input("enter the base: "))

side2 = int(input("enter the height: "))

o1 = areas(side1, side2)

o1.triangle()

elif selection1 == 3:

side1 = int(input("enter the side1: "))

side2 = int(input("enter the side2: "))

o1 = areas(side1, side2)

o1.rectangle()

else:

print("not a valid option:")

elif user\_choice == 2:

print("select 3D shape")

print("1. cone")

print("2. cylinder")

selection2 = int(input("enter choice"))

if selection2 == 1:

print("enter the radius and height")

radius = int(input("enter radius: "))

height = int(input("enter height: "))

o2 = volumes(radius, height)

o2.cone()

elif selection2 == 2:

print("enter the radius and height")

radius = int(input("enter radius: "))

height = int(input("enter height: "))

o2 = volumes(radius, height)

o2.cylinder()

else:

print("Not a valid option")

elif user\_choice == 3:

side = int(input("enter side: "))

o3 = cube\_volume(side, side, side)

o3.cube1()

else:

print("invalid")

print("q for quit and c for continue")

a = input()

if a == 'q':

break

else:

continue

**SCREENSHOT OF PEP8:**

