PRACTICAL NO 8

a) Open a new file in IDLE (“New Window” in the “File” menu) and save it as geometry.py in the directory where you keep the files you create for this course. Then copy the functions you wrote for calculating volumes and areas in the “Control Flow and Functions” exercise into this file and save it.Now open a new file and save it in the same directory. You should now be able to import your own module like this: import geometry Try and add print dir(geometry) to the file and run it. 26 Now write a function pointyShapeVolume(x, y, squareBase) that calculates the volume of a square pyramid if squareBase is True and of a right circular cone if squareBase is False. x is the length of an edge on a square if squareBase is True and the radius of a circle when squareBase is False. y is the height of the object. First use squareBase to distinguish the cases. Use the circleArea and squareArea from the geometry module to calculate the base areas.

Module.py Code :

```
import math
def SquareArea(side_len):
    return side_len**2;

def CircleArea(radius):
    return math.pi*radius**2;

def SqurePyramidVolume(base,height):
    return SquareArea(base)*height/3;

def ConeVolume(radius,height):
    return CircleArea(radius)*height/3;

def pointyshape_volume(x,y,SquareBase):
  if(SquareBase):
    print(f"The Volume of Square Pyramid:{SqurePyramidVolume(x,y)}")
  else:
    print(f"The volume of Cone:{ConeVolume(x,y)}")
```

Main.py Code :

```
from module import pointyshape_volume
pointyshape_volume(40,24,True)
pointyshape_volume(21,90,False)
```

Output :

```
The Volume of Square Pyramid : 12800.0
The volume of Cone           : 41580.0
```

b) Write a program to implement exception handling.

Code :

```
class InvalidAgeError(Exception):
    def __init__(self,message):
        self.message = message
        super().__init__(self.message)
class ValueTooHighError(Exception):
    def __init__(self,message):
        self.message = message
        super().__init__(self.message)

def CheckError(age):
    if age < 18 :
        raise InvalidAgeError("Age is Invalid!!")
def CheckError(value):
    if value > 1000:
        raise ValueTooHighError("Entered value is too high!!")

try :
    CheckError(int(input("Enter Age : ")))
    print("You are valid for voting")
except InvalidAgeError as e:
    print(f"Error :: {e}")
try :
    CheckError(int(input("Enter value : ")))
    print("Entered value is correct")
except ValueTooHighError as e:
    print(f"Error :: {e}")
```

Output :

```
Enter Age : 14
Error :: Age is Invalid!!

Enter Age : 22
You are valid for voting

Enter value : 4500
Error :: Entered value is too high!!

Enter value : 800
Entered value is correct
```