**LAB 8**

**TASK 1**

**﻿**class BMI:

def \_\_init\_\_(self, name, age, weight, height):

self.\_\_name = name

self.\_\_age = age

self.\_\_weight = weight

self.\_\_height = height

def get\_name(self):

return self.\_\_name

def get\_BMI(self):

a = self.\_\_weight/2.205

b = self.\_\_height/39.37

BMI = a/(b\*\*2)

return BMI

def status(self):

if self.get\_BMI() < 18.5:

print("Under weight")

elif self.get\_BMI() > 18.5 and self.get\_BMI() < 24.9:

print("Normal")

elif self.get\_BMI() > 25 and self.get\_BMI() < 29.9:

print("Over weight")

elif self.get\_BMI() > 30.0:

print("Obese")

def main():

p1 = BMI("John Doe", 18, 145, 70)

p2 = BMI("Peter King", 50, 215,70)

print(p1.get\_BMI())

p1.status()

print(p2.get\_BMI())

p2.status()

main()

**TASK 2**

**﻿**import math

class RegularPolygon:

def \_\_init\_\_(self, n=3, side=1, x=0, y=0):

self.\_\_n = n

self.\_\_side = side

self.\_\_x = x

self.\_\_y = y

def getN(self):

return self.\_\_n

def setN(self, n):

self.\_\_n = n

def getSide(self):

return self.\_\_side

def setSide(self, side):

self.\_\_side = side

def getX(self):

return self.\_\_x

def setX(self, x):

self.\_\_x = x

def getY(self):

return self.\_\_y

def setY(self, y):

self.\_\_y = y

def getParameter(self):

return self.\_\_n \* self.\_\_side

def getArea(self):

a = self.\_\_n \* (self.\_\_side)\*\*2

b = 4 \* math.tan(math.pi/self.\_\_n)

return a/b

def main():

r1 = RegularPolygon()

r2 = RegularPolygon(6, 4)

r3 = RegularPolygon(10, 4, 5.6, 7.8)

print(r1.getParameter(), r1.getArea())

print(r2.getParameter(), r2.getArea())

print(r3.getParameter(), r3.getArea())

main()

**UML**

|  |
| --- |
| RegularPolygon |
| * n : int * side : float * x : float * y : float |
| RegularPolygon(): None  getN(): None  setN(n: int): int  getSide(): None  setSide(side: float): float  getX(): None  setX(x: float): float  getY(): None  setY(y: float): float  getParameter(): float  getArea(): float |