

LAPORAN PRAKTIKUM

PEMROGRAMAN BERORIENTASI OBJEK LANJUT

2023



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Buatlah 3 aplikasi untuk menghitung volume dan luas permukaan selain dari contoh diatas menggunakan teknik Metaprogramming.

1. Luas permukaan kubus

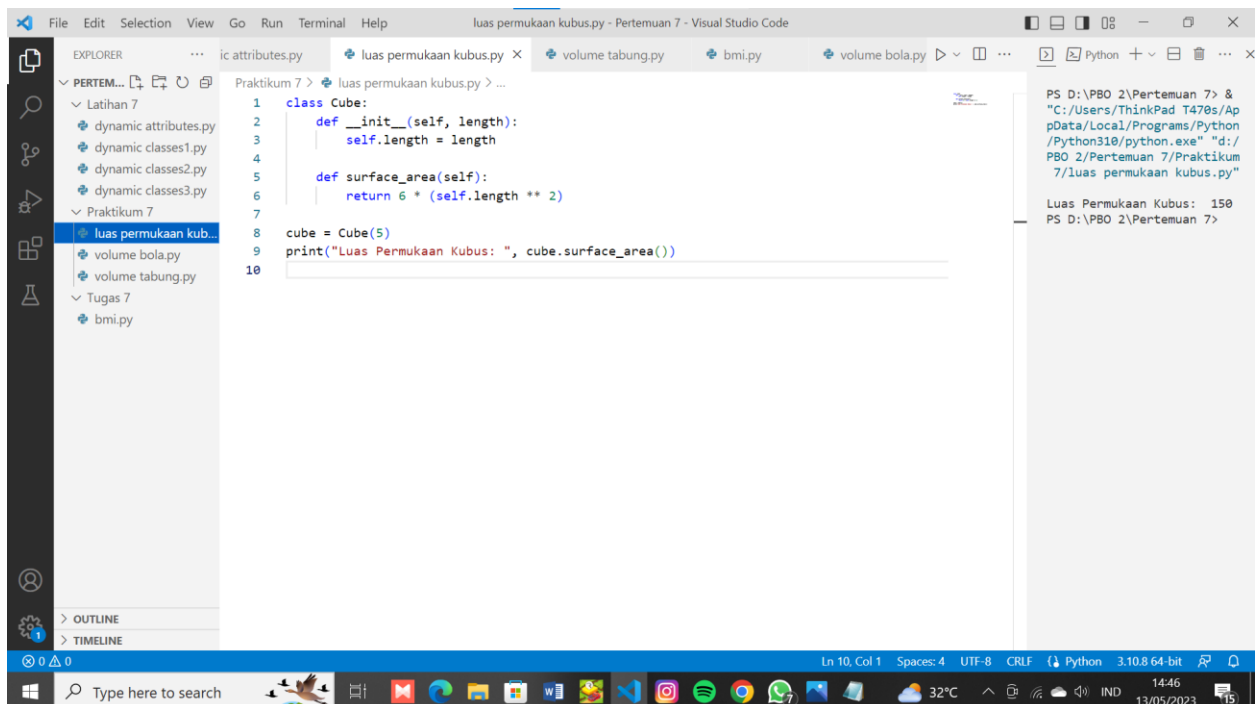
Script :

```
class Cube:
    def __init__(self, length):
        self.length = length

    def surface_area(self):
        return 6 * (self.length ** 2)

cube = Cube(5)
print("Luas Permukaan Kubus: ", cube.surface_area())
```

Output :



2. Volume bola

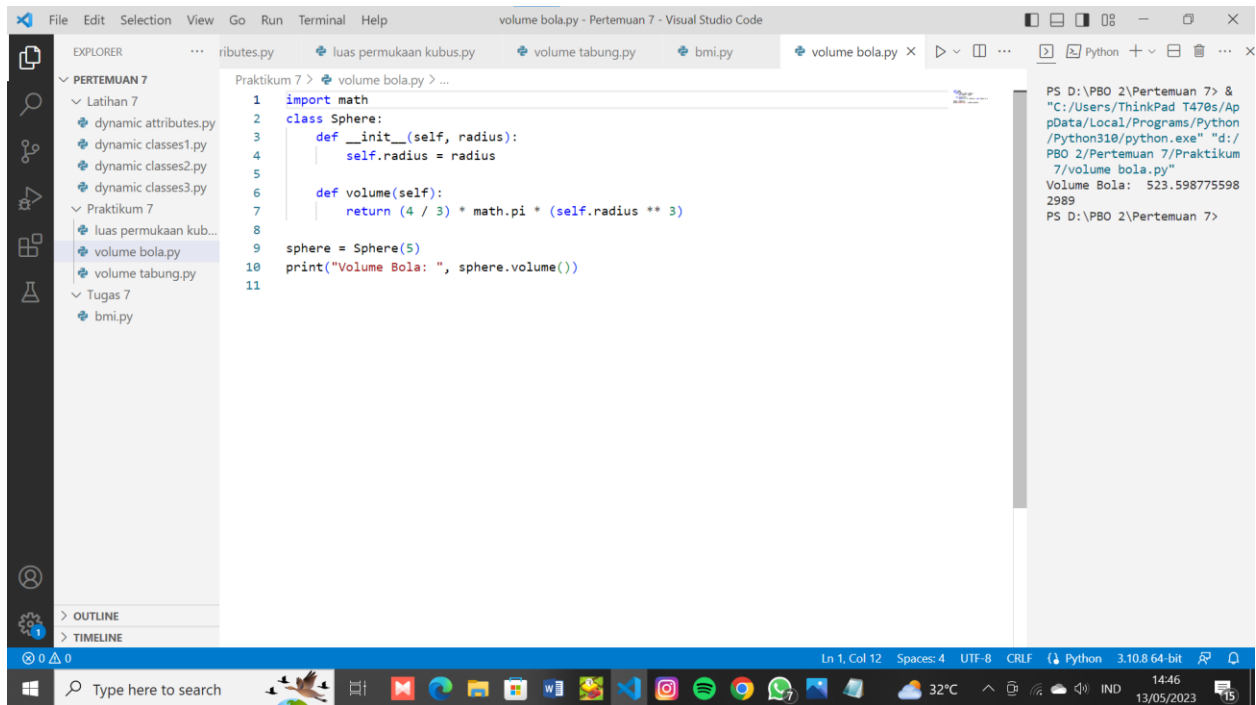
Script :

```
import math
class Sphere:
    def __init__(self, radius):
        self.radius = radius

    def volume(self):
        return (4 / 3) * math.pi * (self.radius ** 3)

sphere = Sphere(5)
print("Volume Bola: ", sphere.volume())
```

Output :



The screenshot displays the Visual Studio Code interface. The Explorer panel on the left shows a project structure with folders 'PERTEMUAN 7' and 'Tugas 7', and files like 'dynamic attributes.py', 'dynamic classes1.py', 'dynamic classes2.py', 'dynamic classes3.py', 'luas permukaan kubus.py', 'volume bola.py', 'volume tabung.py', and 'bmi.py'. The main editor window shows the 'volume bola.py' file with the following code:

```
1 import math
2 class Sphere:
3     def __init__(self, radius):
4         self.radius = radius
5
6     def volume(self):
7         return (4 / 3) * math.pi * (self.radius ** 3)
8
9 sphere = Sphere(5)
10 print("Volume Bola: ", sphere.volume())
11
```

The Output panel on the right shows the execution results:

```
PS D:\PBO 2\Pertemuan 7> &
"C:/Users/ThinkPad T470s/AppData/Local/Programs/Python/Python310/python.exe" "d:/PBO 2/Pertemuan 7/Praktikum 7/volume bola.py"
Volume Bola:  523.598775598
2989
PS D:\PBO 2\Pertemuan 7>
```

The status bar at the bottom indicates the file is 'Ln 1, Col 12', uses 'Spaces: 4', 'UTF-8' encoding, 'CRLF' line endings, and is a 'Python 3.10.8 64-bit' file.

3. Volume tabung

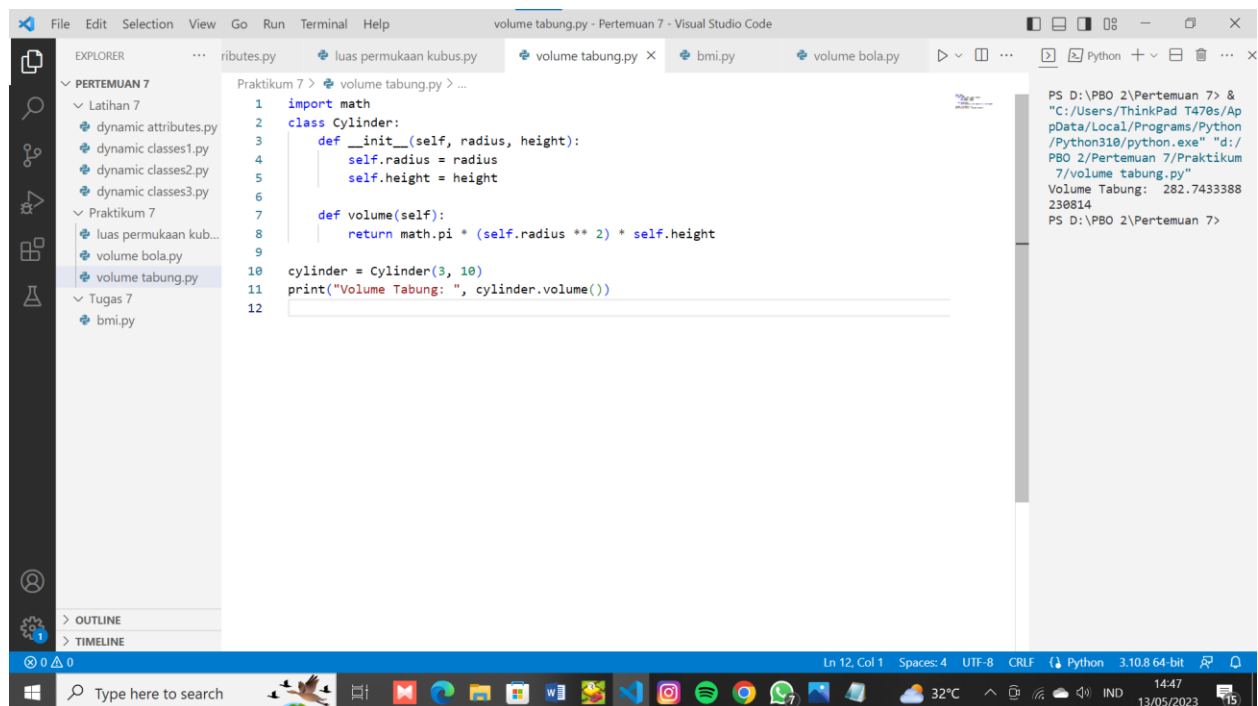
Script :

```
import math
class Cylinder:
    def __init__(self, radius, height):
        self.radius = radius
        self.height = height

    def volume(self):
        return math.pi * (self.radius ** 2) * self.height

cylinder = Cylinder(3, 10)
print("Volume Tabung: ", cylinder.volume())
```

Output :



```
File Edit Selection View Go Run Terminal Help
volume tabung.py - Pertemuan 7 - Visual Studio Code

EXPLORER
  PERTEMUAN 7
    Latihan 7
      dynamic attributes.py
      dynamic classes1.py
      dynamic classes2.py
      dynamic classes3.py
    Praktikum 7
      luas permukaan kubus.py
      volume bola.py
      volume tabung.py
    Tugas 7
      bmi.py

Praktikum 7 > volume tabung.py > ...
1 import math
2 class Cylinder:
3     def __init__(self, radius, height):
4         self.radius = radius
5         self.height = height
6
7     def volume(self):
8         return math.pi * (self.radius ** 2) * self.height
9
10 cylinder = Cylinder(3, 10)
11 print("Volume Tabung: ", cylinder.volume())
12

PS D:\PBO 2\Pertemuan 7> &
"C:/Users/ThinkPad T470s/AppData/Local/Programs/Python/Python310/python.exe" "d:/PBO 2/Pertemuan 7/Praktikum 7/volume tabung.py"
Volume Tabung: 282.7433388
238814
PS D:\PBO 2\Pertemuan 7>
```