

LAPORAN PRAKTIKUM

PEMROGRAMAN BERORIENTASI OBJEK LANJUT

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Tugas 1

Buatlah 3 buah class (Fahrenheit, Reamur, dan Kelvin) yang mengimplementasikan OOP dimana setiap class memiliki kemampuan untuk melakukan konversi ke Temperatur yang lain.

Jawab :

Class Fahrenheit

Script :

```
class Fahrenheit:
    def __init__(self, temperature):
        self.temperature = temperature

    def to_celsius(self):
        celsius = (self.temperature - 32) * 5/9
        return celsius

    def to_reamur(self):
        reamur = (self.temperature - 32) * 4/9
        return reamur

    def to_kelvin(self):
        kelvin = (self.temperature + 459.67) * 5/9
        return kelvin

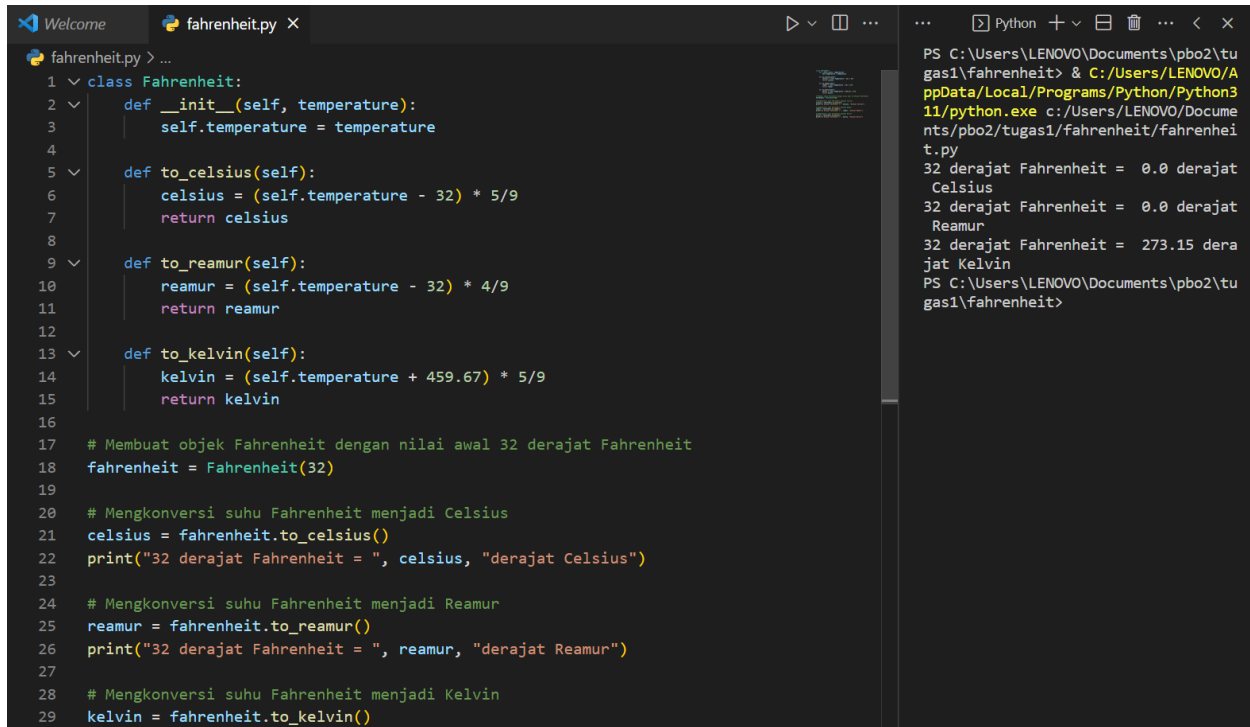
# Membuat objek Fahrenheit dengan nilai awal 32 derajat Fahrenheit
fahrenheit = Fahrenheit(32)

# Mengkonversi suhu Fahrenheit menjadi Celsius
celsius = fahrenheit.to_celsius()
print("32 derajat Fahrenheit = ", celsius, "derajat Celsius")

# Mengkonversi suhu Fahrenheit menjadi Reamur
reamur = fahrenheit.to_reamur()
print("32 derajat Fahrenheit = ", reamur, "derajat Reamur")

# Mengkonversi suhu Fahrenheit menjadi Kelvin
kelvin = fahrenheit.to_kelvin()
print("32 derajat Fahrenheit = ", kelvin, "derajat Kelvin")
```

Tampilan :



The screenshot shows a Python IDE with a file named 'fahrenheit.py'. The code defines a class 'Fahrenheit' with methods to convert temperature from Fahrenheit to Celsius, Reamur, and Kelvin. It then creates an instance of the class and performs the conversions for 32 degrees Fahrenheit.

```
1 class Fahrenheit:
2     def __init__(self, temperature):
3         self.temperature = temperature
4
5     def to_celsius(self):
6         celsius = (self.temperature - 32) * 5/9
7         return celsius
8
9     def to_reamur(self):
10        reamur = (self.temperature - 32) * 4/9
11        return reamur
12
13    def to_kelvin(self):
14        kelvin = (self.temperature + 459.67) * 5/9
15        return kelvin
16
17 # Membuat objek Fahrenheit dengan nilai awal 32 derajat Fahrenheit
18 fahrenheit = Fahrenheit(32)
19
20 # Mengkonversi suhu Fahrenheit menjadi Celsius
21 celsius = fahrenheit.to_celsius()
22 print("32 derajat Fahrenheit = ", celsius, "derajat Celsius")
23
24 # Mengkonversi suhu Fahrenheit menjadi Reamur
25 reamur = fahrenheit.to_reamur()
26 print("32 derajat Fahrenheit = ", reamur, "derajat Reamur")
27
28 # Mengkonversi suhu Fahrenheit menjadi Kelvin
29 kelvin = fahrenheit.to_kelvin()
```

The output on the right shows the execution results:

```
PS C:\Users\LENOVO\Documents\pbo2\tugas1\ahrenheit> & C:/Users/LENOVO/AppData/Local/Programs/Python/Python311/python.exe c:/Users/LENOVO/Documents/pbo2/tugas1/ahrenheit/fahrenheit.py
32 derajat Fahrenheit =  0.0 derajat Celsius
32 derajat Fahrenheit =  0.0 derajat Reamur
32 derajat Fahrenheit =  273.15 derajat Kelvin
PS C:\Users\LENOVO\Documents\pbo2\tugas1\ahrenheit>
```

Class kelvin

Script :

```
class Fahrenheit:
    def __init__(self, temperature):
        self.temperature = temperature

    def to_celsius(self):
        celsius = (self.temperature - 32) * 5/9
        return celsius

    def to_reamur(self):
        reamur = (self.temperature - 32) * 4/9
        return reamur

    def to_kelvin(self):
        kelvin = (self.temperature + 459.67) * 5/9
        return kelvin

# Membuat objek Fahrenheit dengan nilai awal 32 derajat Fahrenheit
fahrenheit = Fahrenheit(32)

# Mengkonversi suhu Fahrenheit menjadi Celsius
```

```

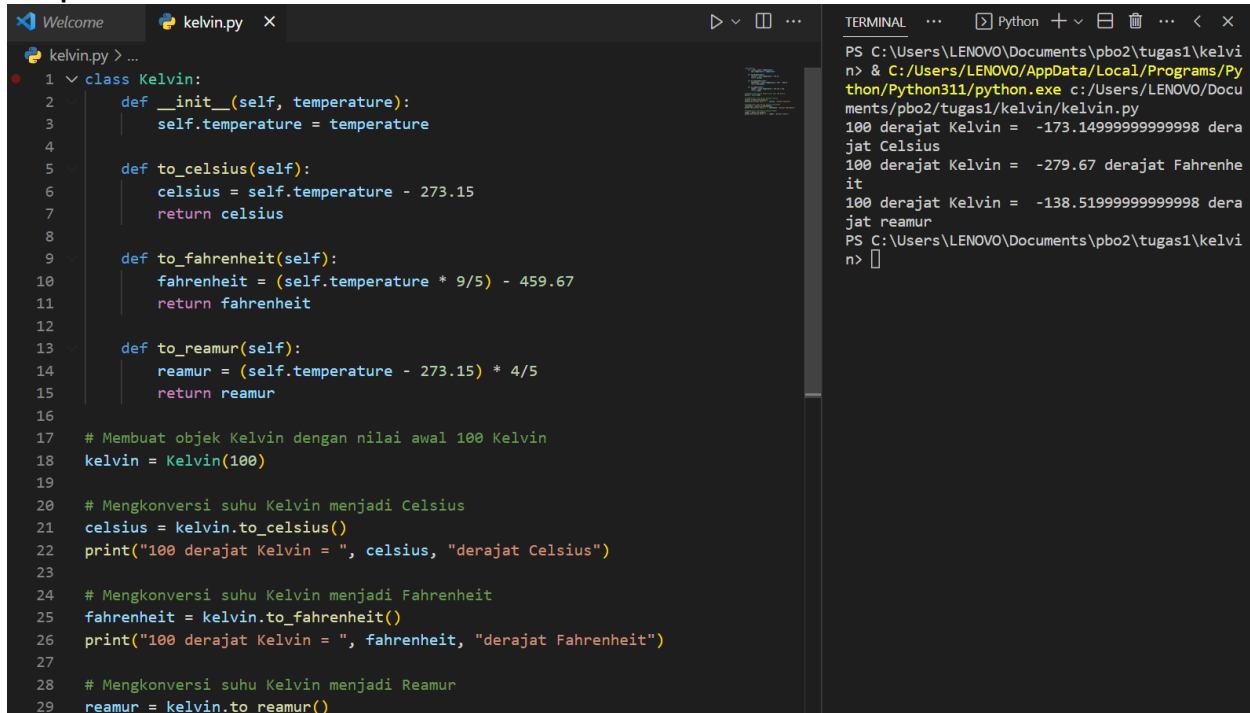
celsius = fahrenheit.to_celsius()
print("32 derajat Fahrenheit = ", celsius, "derajat Celsius")

# Mengkonversi suhu Fahrenheit menjadi Reamur
reamur = fahrenheit.to_reamur()
print("32 derajat Fahrenheit = ", reamur, "derajat Reamur")

# Mengkonversi suhu Fahrenheit menjadi Kelvin
kelvin = fahrenheit.to_kelvin()
print("32 derajat Fahrenheit = ", kelvin, "derajat Kelvin")

```

Tampilan :



```

kelvin.py > ...
1 class Kelvin:
2     def __init__(self, temperature):
3         self.temperature = temperature
4
5     def to_celsius(self):
6         celsius = self.temperature - 273.15
7         return celsius
8
9     def to_fahrenheit(self):
10        fahrenheit = (self.temperature * 9/5) - 459.67
11        return fahrenheit
12
13    def to_reamur(self):
14        reamur = (self.temperature - 273.15) * 4/5
15        return reamur
16
17    # Membuat objek Kelvin dengan nilai awal 100 Kelvin
18    kelvin = Kelvin(100)
19
20    # Mengkonversi suhu Kelvin menjadi Celsius
21    celsius = kelvin.to_celsius()
22    print("100 derajat Kelvin = ", celsius, "derajat Celsius")
23
24    # Mengkonversi suhu Kelvin menjadi Fahrenheit
25    fahrenheit = kelvin.to_fahrenheit()
26    print("100 derajat Kelvin = ", fahrenheit, "derajat Fahrenheit")
27
28    # Mengkonversi suhu Kelvin menjadi Reamur
29    reamur = kelvin.to_reamur()

```

```

TERMINAL
PS C:\Users\LENOVO\Documents\pbo2\tugas1\kelvin> & C:/Users/LENOVO/AppData/Local/Programs/Python/Python311/python.exe c:/Users/LENOVO/Documents/pbo2/tugas1/kelvin/kelvin.py
100 derajat Kelvin = -173.14999999999998 derajat Celsius
100 derajat Kelvin = -279.67 derajat Fahrenheit
100 derajat Kelvin = -138.51999999999998 derajat Reamur
PS C:\Users\LENOVO\Documents\pbo2\tugas1\kelvin>

```

Class Reamur

Script :

```

class Reamur:
    def __init__(self, temperature):
        self.temperature = temperature

    def to_celsius(self):
        celsius = self.temperature * 5/4
        return celsius

    def to_fahrenheit(self):
        fahrenheit = (self.temperature * 9/4) + 32

```

```

        return fahrenheit

    def to_kelvin(self):
        kelvin = (self.temperature * 5/4) + 273.15
        return kelvin

# Membuat objek Reamur dengan nilai awal 25 derajat Reamur
reamur = Reamur(25)

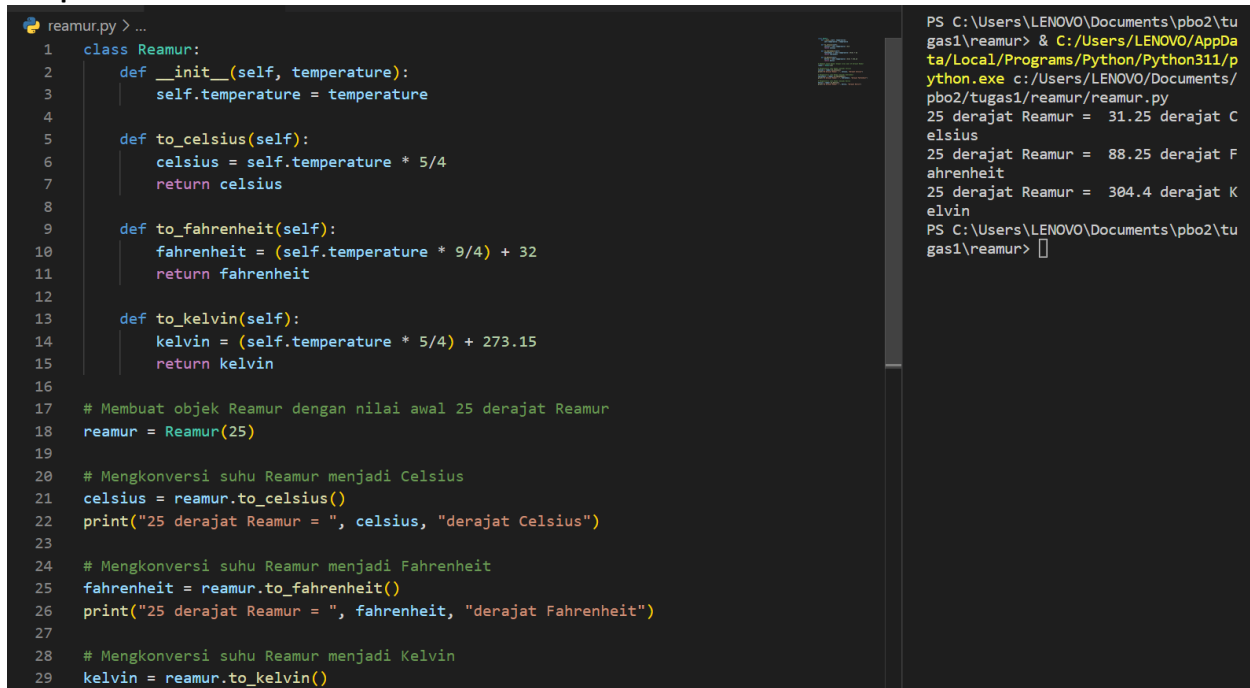
# Mengkonversi suhu Reamur menjadi Celsius
celsius = reamur.to_celsius()
print("25 derajat Reamur = ", celsius, "derajat Celsius")

# Mengkonversi suhu Reamur menjadi Fahrenheit
fahrenheit = reamur.to_fahrenheit()
print("25 derajat Reamur = ", fahrenheit, "derajat Fahrenheit")

# Mengkonversi suhu Reamur menjadi Kelvin
kelvin = reamur.to_kelvin()
print("25 derajat Reamur = ", kelvin, "derajat Kelvin")

```

Tampilan :



The screenshot displays a Python script in a code editor on the left and its execution output in a terminal window on the right. The script defines a class named 'Reamur' with methods to convert Reamur temperatures to Celsius, Fahrenheit, and Kelvin. It then creates an instance of the class with a value of 25 and calls the conversion methods, printing the results.

```

1 class Reamur:
2     def __init__(self, temperature):
3         self.temperature = temperature
4
5     def to_celsius(self):
6         celsius = self.temperature * 5/4
7         return celsius
8
9     def to_fahrenheit(self):
10        fahrenheit = (self.temperature * 9/4) + 32
11        return fahrenheit
12
13    def to_kelvin(self):
14        kelvin = (self.temperature * 5/4) + 273.15
15        return kelvin
16
17 # Membuat objek Reamur dengan nilai awal 25 derajat Reamur
18 reamur = Reamur(25)
19
20 # Mengkonversi suhu Reamur menjadi Celsius
21 celsius = reamur.to_celsius()
22 print("25 derajat Reamur = ", celsius, "derajat Celsius")
23
24 # Mengkonversi suhu Reamur menjadi Fahrenheit
25 fahrenheit = reamur.to_fahrenheit()
26 print("25 derajat Reamur = ", fahrenheit, "derajat Fahrenheit")
27
28 # Mengkonversi suhu Reamur menjadi Kelvin
29 kelvin = reamur.to_kelvin()

```

The terminal output shows the execution of the script, displaying the converted values for each unit:

```

PS C:\Users\LENOVO\Documents\pbo2\tugas1\reamur> & C:/Users/LENOVO/AppData/Local/Programs/Python/Python311/python.exe c:/Users/LENOVO/Documents/pbo2/tugas1/reamur/reamur.py
25 derajat Reamur =  31.25 derajat Celsius
25 derajat Reamur =  88.25 derajat Fahrenheit
25 derajat Reamur =  304.4 derajat Kelvin
PS C:\Users\LENOVO\Documents\pbo2\tugas1\reamur>

```