

PROGRAM BERORIENTASI OBYEK LANJUT (POB/OOP)
TUGAS 1

*Diajukan untuk memenuhi salah satu tugas mata kuliah Program Berorientasi Obyek Lanjutan
yang diampu oleh Freddy Wicaksono,M.Kom*

Disusun Oleh :
RIFKI PRAMAYANDI MAHESA (210511156)

Kelas D



PROGRAM STUDI TEKNIK INFORMATIKA
FAKULTAS TEKNIK
UNIVERSITAS MUHAMMADIYAH CIREBON
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Buatlah 3 buah class (Fahrenheit, Reamur, dan Kelvin) yang mengimplementasikan OOP dimana setiap class memiliki kemampuan untuk melakukan konversi ke Temperatur yang lain.

1. Sintask :
 - a. Fahrenheit

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

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

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

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

# membuat objek Fahrenheit dengan nilai 7 derajat Fahrenheit
f = Fahrenheit(7)
print("|   CONVERTER   FAHRENHEIT   |")

# konversi suhu Fahrenheit ke Celsius
c = f.to_celsius()
print("\nCelsius = ",c)

# konversi suhu Fahrenheit ke Reamur
r = f.to_reamur()
print("Reamur = ",r)

# konversi suhu Fahrenheit ke Kelvin
k = f.to_kelvin()
print("Kelvin = ",k)
print("\n|   RIFKI PRAMAYANDI MAHESA   |")
print("|           210511156           |")
print("|           KELAS D           |")
```

b. Reamur

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

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

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

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

# membuat objek Reamur dengan nilai 23 derajat Reamur
R = Reamur(23)
print("| CONVERTER REAMUR |")

# konversi suhu Reamur ke Celsius
c = R.to_celsius()
print("\nCelsius = ",c)

# konversi suhu Reamur ke Fahrenheit
f = R.to_fahrenheit()
print("Fahrenheit = ",f)

# konversi suhu Reamur ke Kelvin
k = R.to_kelvin()
print("Kelvin = ",k)
print("\n|RIFKI PRAMAYANDI MAHESA|")
print("| 210511156 |")
print("| KELAS D |")
```

c. Kelvin

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

    def to_celsius(self):
        return self.temperature - 273.15

    def to_fahrenheit(self):
        return self.temperature * 9 / 5 - 459.67

    def to_reamur(self):
        return (self.temperature - 273.15) * 4 / 5

# membuat objek Kelvin dengan nilai 14 derajat Kelvin
K = Kelvin(14)
print("|   CONVERTER   KELVIN   |")

# konversi suhu Kelvin ke Celsius
c = K.to_celsius()
print("\nCelsius = ",c)

# konversi suhu Kelvin ke Fahrenheit
f = K.to_fahrenheit()
print("Fahrenheit = ",f)

# konversi suhu Kelvin ke Reamur
r = K.to_reamur()
print("Reamur = ",r)
print("\n|RIFKI PRAMAYANDI MAHESA|")
print("|       210511156       |")
print("|       KELAS D         |")
```

2. Hasil Program :

a. Fahrenheit

The screenshot shows the Visual Studio Code interface with a Python file named `Temp - 1.py` open. The code defines a `Fahrenheit` class with methods for converting to Celsius, Reamur, and Kelvin. The program creates a `Fahrenheit` object with a value of 7 and prints the conversion results.

```
1 class Fahrenheit:
2     def __init__(self, temperature):
3         self.temperature = temperature
4
5     def to_celsius(self):
6         return (self.temperature - 32) * 5 / 9
7
8     def to_reamur(self):
9         return (self.temperature - 32) * 4 / 9
10
11    def to_kelvin(self):
12        return (self.temperature + 459.67) * 5 / 9
13
14    # membuat objek Fahrenheit dengan nilai 7 derajat Fahrenheit
15    f = Fahrenheit(7)
16    print("| CONVERTER FAHRENHEIT |")
17
18    # konversi suhu Fahrenheit ke Celsius
19    c = f.to_celsius()
20    print("\nCelsius = ",c)
21
22    # konversi suhu Fahrenheit ke Reamur
23    r = f.to_reamur()
24    print("Reamur = ",r)
25
26    # konversi suhu Fahrenheit ke Kelvin
27    k = f.to_kelvin()
28    print("Kelvin = ",k)
29    print("\n| RIFKI PRAMAYANDI MAHESA |")
30    print("| 210511156 |")
31    print("| KELAS D |")
```

The output window shows the following results:

```
[Running] python -u
"C:\Users\ASUS\Documents\R-DATABASE\Code
For\Einheiyar\Temp - 1.py"
| CONVERTER FAHRENHEIT |

Celsius = -13.888888888888889
Reamur = -11.111111111111111
Kelvin = 259.2611111111111

| RIFKI PRAMAYANDI MAHESA |
| 210511156 |
| KELAS D |

[Done] exited with code=0 in 0.479 seconds
```

b. Reamur

The screenshot shows the Visual Studio Code interface with a Python file named `Temp - 2.py` open. The code defines a `Reamur` class with methods for converting to Celsius, Fahrenheit, and Kelvin. The program creates a `Reamur` object with a value of 23 and prints the conversion results.

```
1 class Reamur:
2     def __init__(self, temperature):
3         self.temperature = temperature
4
5     def to_celsius(self):
6         return self.temperature * 5 / 4
7
8     def to_fahrenheit(self):
9         return self.temperature * 9 / 4 + 32
10
11    def to_kelvin(self):
12        return self.temperature * 5 / 4 + 273.15
13
14    # membuat objek Reamur dengan nilai 23 derajat Reamur
15    R = Reamur(23)
16    print("| CONVERTER REAMUR |")
17
18    # konversi suhu Reamur ke Celsius
19    c = R.to_celsius()
20    print("\nCelsius = ",c)
21
22    # konversi suhu Reamur ke Fahrenheit
23    f = R.to_fahrenheit()
24    print("Fahrenheit = ",f)
25
26    # konversi suhu Reamur ke Kelvin
27    k = R.to_kelvin()
28    print("Kelvin = ",k)
29    print("\n| RIFKI PRAMAYANDI MAHESA |")
30    print("| 210511156 |")
31    print("| KELAS D |")
```

The output window shows the following results:

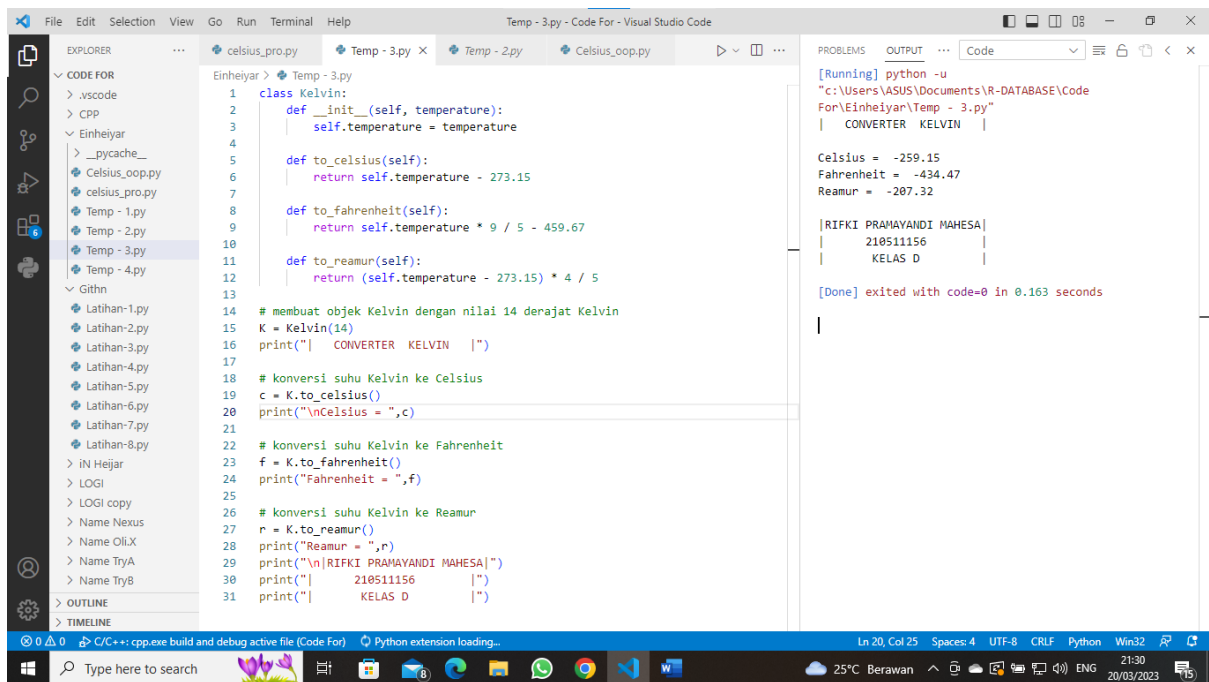
```
[Running] python -u
"C:\Users\ASUS\Documents\R-DATABASE\Code
For\Einheiyar\Temp - 2.py"
| CONVERTER REAMUR |

Celsius = 28.75
Fahrenheit = 83.75
Kelvin = 301.9

| RIFKI PRAMAYANDI MAHESA |
| 210511156 |
| KELAS D |

[Done] exited with code=0 in 0.281 seconds
```

c. Kelvin



```
File Edit Selection View Go Run Terminal Help Temp - 3.py - Code For - Visual Studio Code

EXPLORER
CODE FOR
  > .vscode
  > CPP
  > Einheiyar
    > __pycache__
    > Celsius_oop.py
    > Celsius_pro.py
    > Temp - 1.py
    > Temp - 2.py
    > Temp - 3.py
    > Temp - 4.py
  > Githn
    > Latihan-1.py
    > Latihan-2.py
    > Latihan-3.py
    > Latihan-4.py
    > Latihan-5.py
    > Latihan-6.py
    > Latihan-7.py
    > Latihan-8.py
  > iN Hejjar
  > LOGI
  > LOGI copy
  > Name Nexus
  > Name OliX
  > Name TryA
  > Name TryB
  > OUTLINE
  > TIMELINE

Temp - 3.py
1 class Kelvin:
2     def __init__(self, temperature):
3         self.temperature = temperature
4
5     def to_celsius(self):
6         return self.temperature - 273.15
7
8     def to_fahrenheit(self):
9         return self.temperature * 9 / 5 - 459.67
10
11    def to_reamur(self):
12        return (self.temperature - 273.15) * 4 / 5
13
14    # membuat objek Kelvin dengan nilai 14 derajat Kelvin
15    K = Kelvin(14)
16    print("| CONVERTER KELVIN |")
17
18    # konversi suhu Kelvin ke Celsius
19    c = K.to_celsius()
20    print("\nCelsius = ",c)
21
22    # konversi suhu Kelvin ke Fahrenheit
23    f = K.to_fahrenheit()
24    print("Fahrenheit = ",f)
25
26    # konversi suhu Kelvin ke Reamur
27    r = K.to_reamur()
28    print("Reamur = ",r)
29    print("\n|RIFKI PRAMAYANDI MAHESA|")
30    print("    210511156    |")
31    print("    KELAS D      |")

PROBLEMS OUTPUT ... Code
[Running] python -u
"C:\Users\ASUS\Documents\R-DATABASE\Code
For\Einheiyar\Temp - 3.py"
| CONVERTER KELVIN |

Celsius = -259.15
Fahrenheit = -434.47
Reamur = -207.32

|RIFKI PRAMAYANDI MAHESA|
| 210511156 |
| KELAS D |

[Done] exited with code=0 in 0.163 seconds
```