

Lembar Soal & Jawaban UTS
Prodi S1 Teknologi Informasi USU
Pemrograman Integrative
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Petunjuk:

Cantumkan tanggapan layar (screenshot) untuk kode yang dituliskan dan hasil yang diperoleh sehingga saya bisa mengetahui bahwa Anda sendiri yang mengerjakan ujian ini.

Apabila ditemukan jawaban yang identik sama dari hasil screenshot-nya, maka hasil ujian dari setiap mahasiswa tersebut akan dibatalkan.

Letakkan file soal beserta jawaban ini pada platform kelas.usu.ac.id dalam format .pdf. Letakkan juga semua kode program berektensi .py hasil pengerjaan UTS ini pada akun GitHub masing-masing peserta ujian, lalu cantumkan link GitHub tersebut pada kelas.usu.ac.id.

1. Write a Python program that reads in a whole number and divides it by number of days this year and displays the result with eleven decimal places if they exist (rounded up).
2. Write a Python program that reads a number (today's test date) and prints the product of all the values from 1 to that number.
3. Write a Python program that reads in a number and prints the date that number of days from now in this format: Monday on 25 March 2024.
4. Write a Python class that calculates and stores the height and weight of a person in metric. The BMI is calculated using this formula:

$$\text{Weight/Height}^2$$

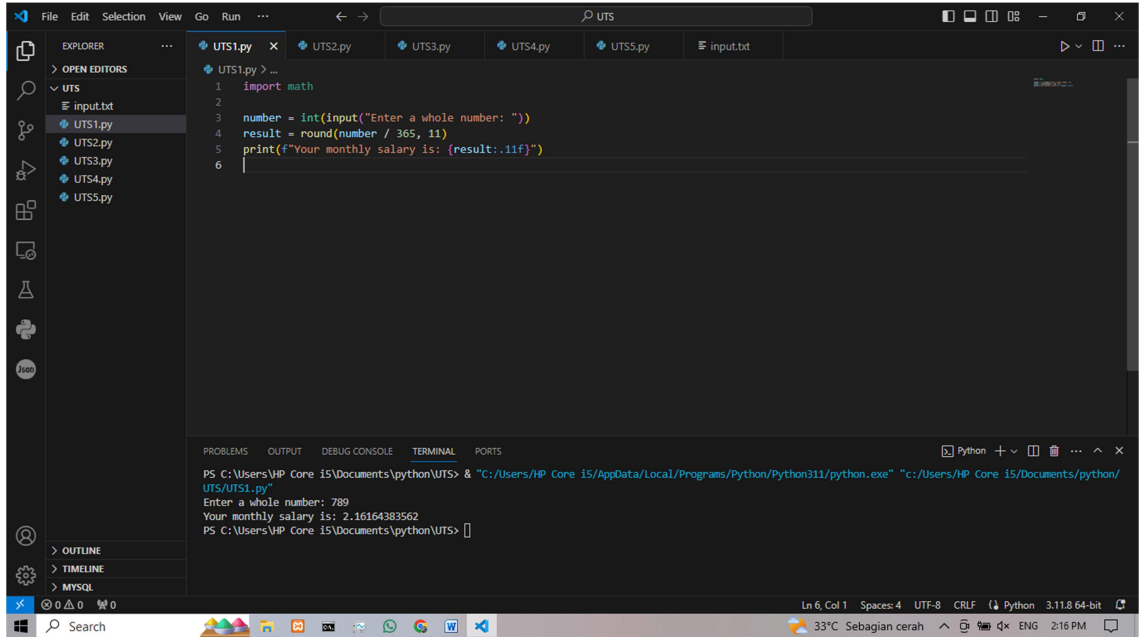
Weight is in pound and height is in feet.

The class should have two properties named: Weight and Height

The class should have two methods:

- BMI_Value – This takes no arguments and returns a decimal value of the BMI;
 - Equals – This should override the equals method from the object class to compare the weight and height of two BMI objects. To override the equal method you should implement this method: `__eq__(self, other)` and return a boolean.
5. Write a program that reads in integer numbers from a text file named input.txt in the same directory as the executing program.
Print the sum of the numbers with comma separators and three digits.

1. Screenshot Jawaban dari Soal ke-1.

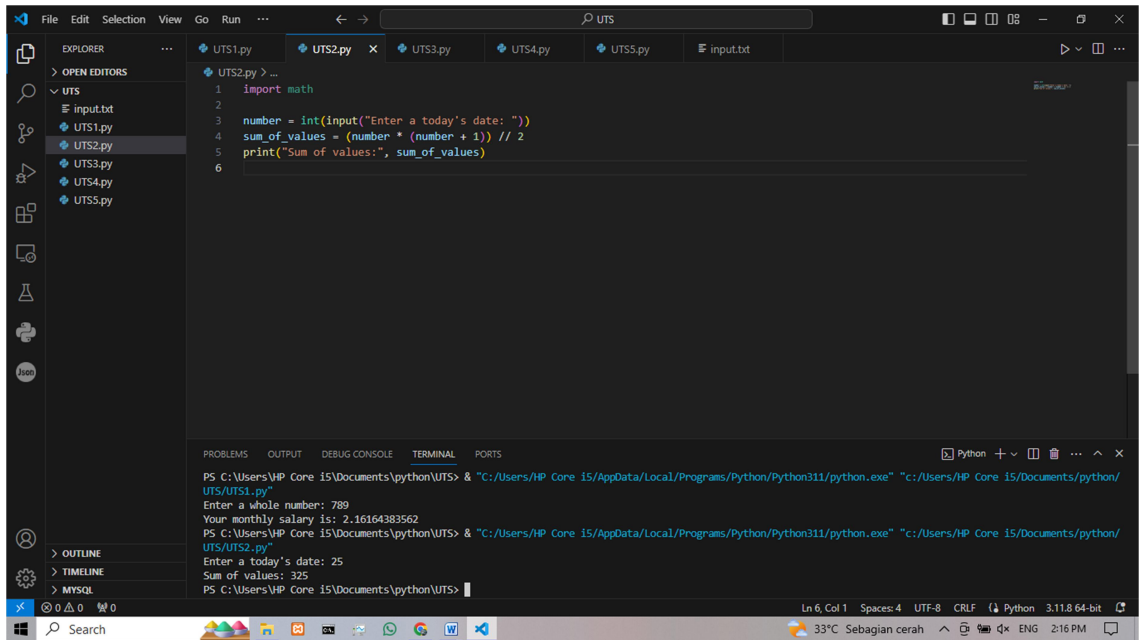


The screenshot displays the Visual Studio Code (VS Code) interface. The Explorer panel on the left shows a project named 'UTS' containing files 'input.txt', 'UTS1.py', 'UTS2.py', 'UTS3.py', 'UTS4.py', and 'UTS5.py'. The main editor window is open to 'UTS1.py', which contains the following Python code:

```
1 import math
2
3 number = int(input("Enter a whole number: "))
4 result = round(number / 365, 11)
5 print(f"Your monthly salary is: {result:.11f}")
6
```

Below the editor, the TERMINAL panel shows the execution of the script. The command prompt is at 'PS C:\Users\HP Core i5\Documents\python\UTS>'. The user has run 'python UTS1.py', which prompts 'Enter a whole number: 789'. The script then outputs 'Your monthly salary is: 2.16164383562'. The terminal ends with 'PS C:\Users\HP Core i5\Documents\python\UTS>'. The status bar at the bottom indicates 'Ln 6, Col 1', 'Spaces: 4', 'UTF-8', 'CRLF', 'Python', and '3.11.8 64-bit'.

2. Screenshot Jawaban dari Soal ke-2.



The screenshot displays a Python IDE with a dark theme. The Explorer panel on the left shows a project named 'UTS' containing files 'input.txt', 'UTS1.py', 'UTS2.py', 'UTS3.py', 'UTS4.py', and 'UTS5.py'. The 'UTS2.py' file is open in the editor, showing the following code:

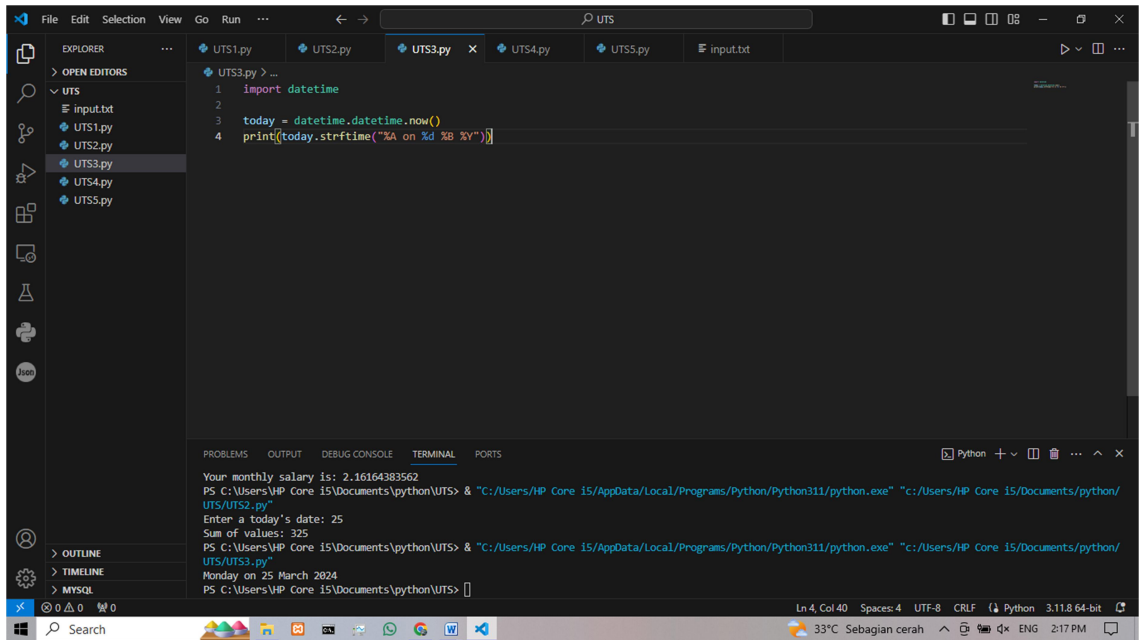
```
1 import math
2
3 number = int(input("Enter a today's date: "))
4 sum_of_values = (number * (number + 1)) // 2
5 print("Sum of values:", sum_of_values)
6
```

The Terminal panel at the bottom shows the execution of the script. It displays the command prompt path, the execution of 'UTS1.py' (which prompts for a whole number and outputs a salary), and the execution of 'UTS2.py' (which prompts for a date and outputs the sum of values).

```
PS C:\Users\HP Core i5\Documents\python\UTS> & "C:/Users/HP Core i5/AppData/Local/Programs/Python/Python311/python.exe" "c:/Users/HP Core i5/Documents/python/UTS/UTS1.py"
Enter a whole number: 789
Your monthly salary is: 2.16164383562
PS C:\Users\HP Core i5\Documents\python\UTS> & "C:/Users/HP Core i5/AppData/Local/Programs/Python/Python311/python.exe" "c:/Users/HP Core i5/Documents/python/UTS/UTS2.py"
Enter a today's date: 25
Sum of values: 325
PS C:\Users\HP Core i5\Documents\python\UTS>
```

The status bar at the bottom indicates the current line and column (Ln 6, Col 1), indentation (Spaces: 4), encoding (UTF-8), line endings (CRLF), interpreter (Python), and architecture (3.11.8 64-bit).

3. Screenshot Jawaban dari Soal ke-3.



The screenshot shows a Python IDE with a dark theme. The Explorer panel on the left shows a project named 'UTS' with files 'input.txt', 'UTS1.py', 'UTS2.py', 'UTS3.py', 'UTS4.py', and 'UTS5.py'. The editor window displays the code in 'UTS3.py':

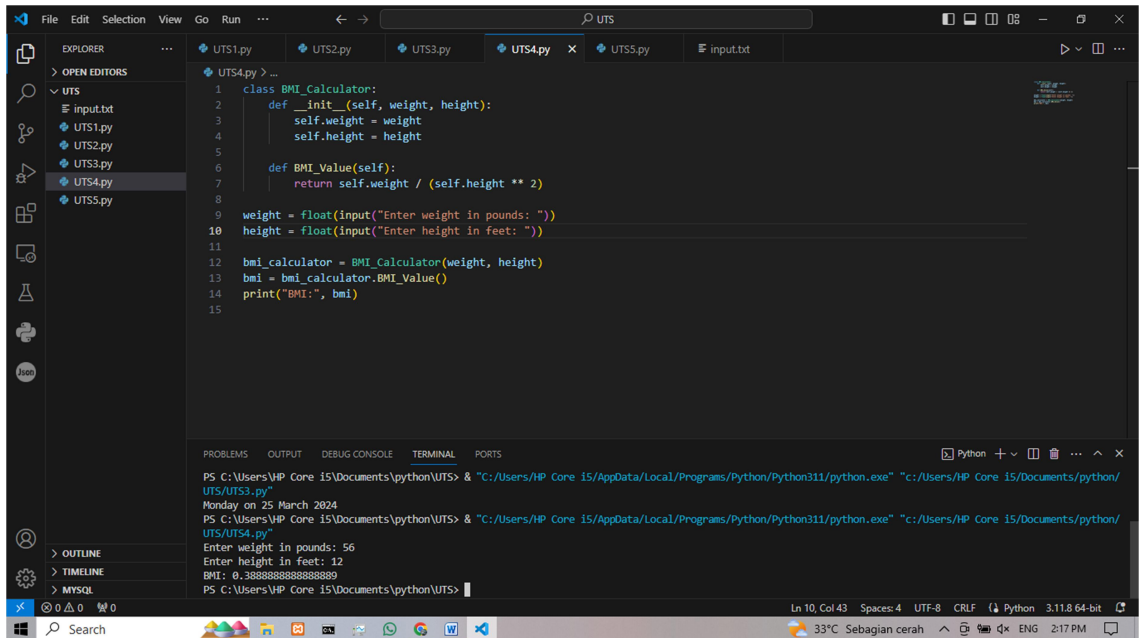
```
1 import datetime
2
3 today = datetime.datetime.now()
4 print(today.strftime("%A on %d %B %Y"))
```

The Terminal panel at the bottom shows the execution output:

```
Your monthly salary is: 2.16164383562
PS C:\Users\HP Core 15\Documents\python\UTS> & "C:/Users/HP Core 15/AppData/Local/Programs/Python/Python311/python.exe" "c:/Users/HP Core 15/Documents/python/UTS/UTS2.py"
Enter a today's date: 25
Sum of values: 325
PS C:\Users\HP Core 15\Documents\python\UTS> & "C:/Users/HP Core 15/AppData/Local/Programs/Python/Python311/python.exe" "c:/Users/HP Core 15/Documents/python/UTS/UTS3.py"
Monday on 25 March 2024
PS C:\Users\HP Core 15\Documents\python\UTS>
```

The status bar at the bottom indicates the cursor is at line 4, column 40, with 4 spaces, UTF-8 encoding, CRLF line endings, and Python 3.11.8 64-bit.

4. Screenshot Jawaban dari Soal ke-4.



The screenshot displays a Python IDE with a file explorer on the left showing a project named 'UTS' containing files 'input.txt', 'UTS1.py', 'UTS2.py', 'UTS3.py', 'UTS4.py', and 'UTS5.py'. The main editor window shows the code for 'UTS4.py'.

```
1 class BMI_Calculator:
2     def __init__(self, weight, height):
3         self.weight = weight
4         self.height = height
5
6     def BMI_Value(self):
7         return self.weight / (self.height ** 2)
8
9 weight = float(input("Enter weight in pounds: "))
10 height = float(input("Enter height in feet: "))
11
12 bmi_calculator = BMI_Calculator(weight, height)
13 bmi = bmi_calculator.BMI_Value()
14 print("BMI:", bmi)
15
```

The terminal window at the bottom shows the execution of the program:

```
PS C:\Users\HP Core i5\Documents\python\UTS> & "C:/Users/HP Core i5/AppData/Local/Programs/Python/Python311/python.exe" "c:/Users/HP Core i5/Documents/python/UTS/UTS3.py"
Monday on 25 March 2024
PS C:\Users\HP Core i5\Documents\python\UTS> & "C:/Users/HP Core i5/AppData/Local/Programs/Python/Python311/python.exe" "c:/Users/HP Core i5/Documents/python/UTS/UTS4.py"
Enter weight in pounds: 56
Enter height in feet: 12
BMI: 0.3888888888888889
PS C:\Users\HP Core i5\Documents\python\UTS>
```

The status bar at the bottom indicates the current position is Line 10, Column 43, with 4 spaces, UTF-8 encoding, CRLF line endings, and a 3.11.8 64-bit Python interpreter.

5. Screenshot Jawaban dari Soal ke-5.

The screenshot shows a Visual Studio Code editor with a Python script named `UTS5.py` and an input file `input.txt`.

input.txt content:

```
1 80
2 90
3 50
```

UTS5.py code:

```
1 path = r"C:\Users\HP Core i5\Documents\python\UTS"
2
3 def sum_of_numbers_from_file(filename):
4     total = 0
5     with open(filename, 'r') as file:
6         for line in file:
7             total += int(line.strip())
8     return total
9
10 filename = path + '\\input.txt'
11 result = sum_of_numbers_from_file(filename)
12 print("{:.3f}".format(result))
13
```

Terminal output:

```
PS C:\Users\HP Core i5\Documents\python\UTS> & "C:/Users/HP Core i5/AppData/Local/Programs/Python/Python311/python.exe" "c:/Users/HP Core i5/Documents/python/UTS/UTS4.py"
Enter weight in pounds: 56
Enter height in feet: 12
BMI: 0.3888888888888889
PS C:\Users\HP Core i5\Documents\python\UTS> & "C:/Users/HP Core i5/AppData/Local/Programs/Python/Python311/python.exe" "c:/Users/HP Core i5/Documents/python/UTS/UTS5.py"
220.000
PS C:\Users\HP Core i5\Documents\python\UTS>
```

The status bar at the bottom indicates the current line is 6, column 26, using UTF-8 encoding with CRLF line endings. The system tray shows a temperature of 33°C and the time is 2:18 PM.