

Assignment 2 – Instructions

Python problems

Practical 2.1

Create a Python calculator that prompts the user to enter two numbers. The program should then add, subtract, multiply, and divide these numbers, displaying the results back to the user. Additionally, include functionality to perform integer division and find the modulus of these numbers, ensuring these results are also presented to the user.

Submit your Python file (*.py) here on eFundi, under this assignment, and make sure you attach and submit your file successfully.

Tips

- Use the ***input()*** function to read input from the user.
- Use the ***int()*** function to convert strings to integers.
- Make use of the ***print()*** function to supply output to the user;
- Save file as ***StudentNumber_Prac2-1.py***

Output

```
Python Calculator
Please enter the first number: 5
Please enter the second number: 3

5 + 3   =           8
5 - 3   =           2
5 * 3   =          15
5 / 3   =        1.6666666666666667
5 // 3  =            1
5 % 3   =            2
```

Practical 2.2

Create a Python program that asks the user to provide the radius of a circle. Then calculate and display the following rounded to two decimal places:

- Use “`import math`” to use “`math.pi`” (alternatively use $\pi = 3.14159$)
- Use “`round(variable, decimal)`” to round value
- Calculate and display the circumference of the circle. (circumference = $2\pi r$)
- Calculate and display the area of the circle. (area = πr^2)
- After the circle calculations, prompt the user to enter the height of the cylinder.
- Calculate and display the volume of the cylinder. (volume = $\pi r^2 h$)

Submit your Python file (*.py) here on eFundi, under this assignment, and make sure you attach and submit your file successfully. Save file as ***StudentNumber_Prac2-2.py***

```
Circle Calculations

Please enter the radius of the circle: 5

The circumference of the circle is: 31.42
The area of the circle is: 78.54

Please enter the height of the cylinder: 10

The volume of the cylinder is: 785.4
```

Practical 2.3

Write a Python program that calculates the interest earned on a given balance. The program should prompt the user to input their account balance. Using a fixed interest rate of 6%, the program calculates the interest amount and displays it formatted to two decimal places, indicating the final amount of interest earned.

Use the following f-string format: [variable]:[.][.precision][type]

Submit your Python file (*.py) here on eFundi, under this assignment, and make sure you attach and submit your file successfully.

Tips

- Save file as ***StudentNumber_Prac2-3.py***

Output

```
Intrest Calculator

Please enter your balance: R150000.50
The final amount is: R9,000.03
```

IMPORTANT NOTES:

- Try the Practical on your own before calling a Demi.
- Submit the **CODE**, not the shell.
- Demi's will stop helping after 17:00 and only mark your work.
 - If you are not marked by a Demi, you will receive 0. **No Excuses.**
- If you do not submit correctly, that is on yourself.
- **DO NOT HARD CODE THE EXAMPLE OUTPUTS**

Rubric

Mark allocation rubric			
Item		Mark allocation	
2,1	1. Header and user input prompt		/1
	2. Performs and displays addition, subtraction, multiplication, and division operations		/2
	3. Performs and displays integer division and modulus operations		/2
2,2	1. Header and user input prompt		/2
	2. Display the circumference rounded to 2 decimal places		/2
	3. Display the area rounded to 2 decimal places.		/2
	4. Display the volume rounded to 2 decimal places.		/2
2,3	1. Header and user input prompt		/1
	2. Display the calculated interest using the f-string		/3
Extensive comments that make sense			/2
All files saved according to specifications			/1
TOTAL			20