

Code Academy

Data Science and AI Stream

Homework 1 - Week1: Introduction to Python Basics Due

Date: April 16th. 2025 @11:59 pm

Problem 1: Hello, Variables!

Problem Statement:

Write a Python program to declare three variables:

1. `name` (a string),
2. `age` (an integer),
3. `Height` (a float).

Print their values in the following format:

Hello, my name is [name]. I am [age] years old and my height is [height] meters.

Sample Output:

```
Hello, my name is Ali. I am 25 years old and my height is  
1.68 meters.
```

Solution:



```
assinment.py x
1 name='majeed'
2 age= 20
3 height= 1.50
4 print(f"Hello, my name is {name}. I am {20} years old and my height is {1.50} meters")

n assinment x
:
C:\Users\User11\PycharmProjects\PythonProject\.venv\Scripts\python.exe C:\Users\User11\Pycha
Hello, my name is majeed. I am 20 years old and my height is 1.5 meters

Process finished with exit code 0
```

Problem 2: Basic Arithmetic Problem

Statement:

Write a Python program that takes two numbers as input from the user and performs the following operations:

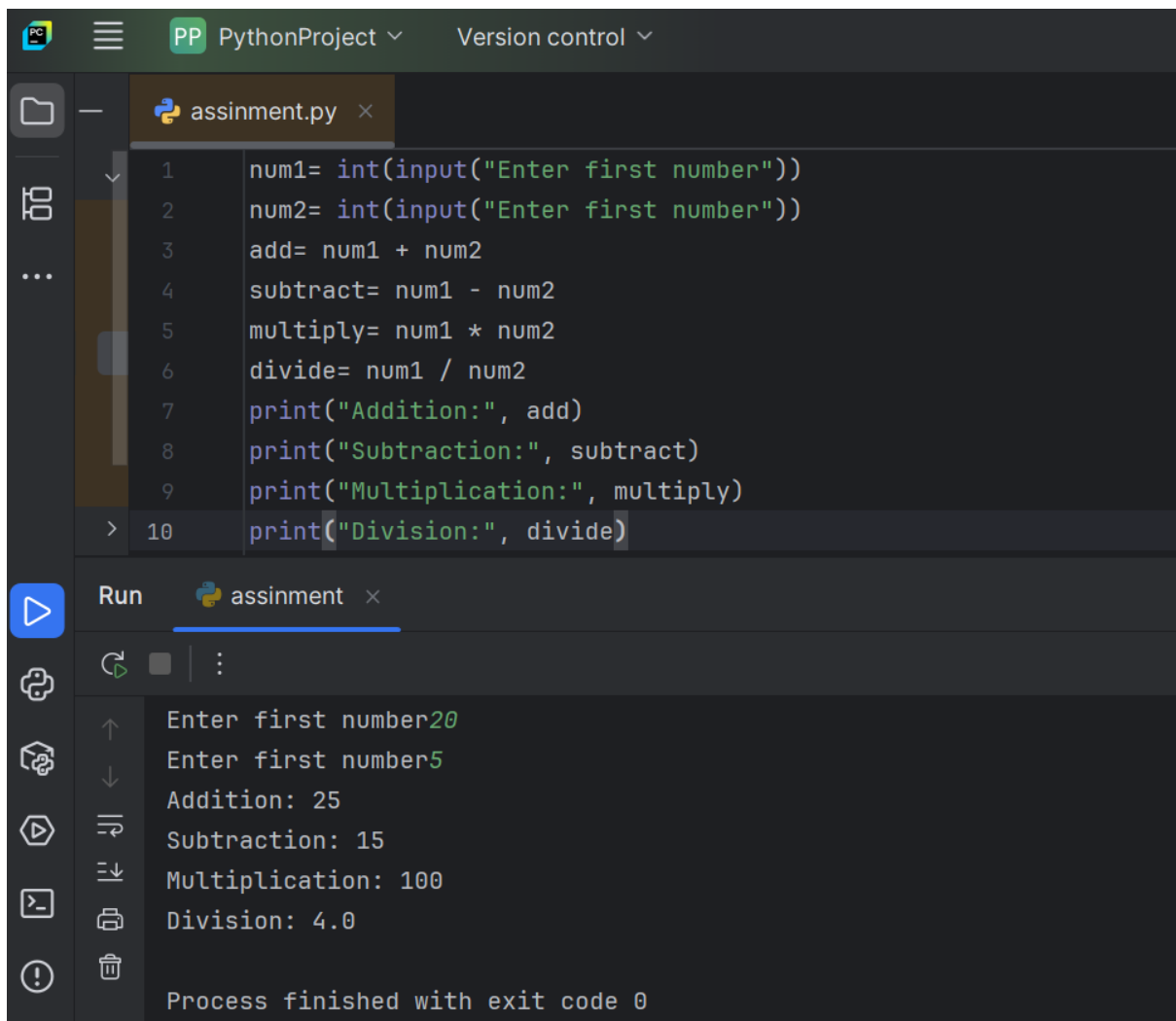
1. Adds them.
2. Subtracts the second number from the first.
3. Multiplies them.
4. Divides the first number by the second.

Display the results with appropriate labels.

Sample Output:

```
Enter first number: 10
Enter second number: 5
Addition: 15
Subtraction: 5
Multiplication: 50
Division: 2.0
```

Solution:



The screenshot shows a Python IDE with a file named 'assinment.py' open. The code in the editor performs the following operations:

```
1 num1= int(input("Enter first number"))
2 num2= int(input("Enter first number"))
3 add= num1 + num2
4 subtract= num1 - num2
5 multiply= num1 * num2
6 divide= num1 / num2
7 print("Addition:", add)
8 print("Subtraction:", subtract)
9 print("Multiplication:", multiply)
10 print("Division:", divide)
```

The 'Run' panel at the bottom shows the output of the program:

```
Enter first number20
Enter first number5
Addition: 25
Subtraction: 15
Multiplication: 100
Division: 4.0
Process finished with exit code 0
```

Problem 3: Data Type Check

Problem Statement:

Write a Python program that assigns the following values to variables:

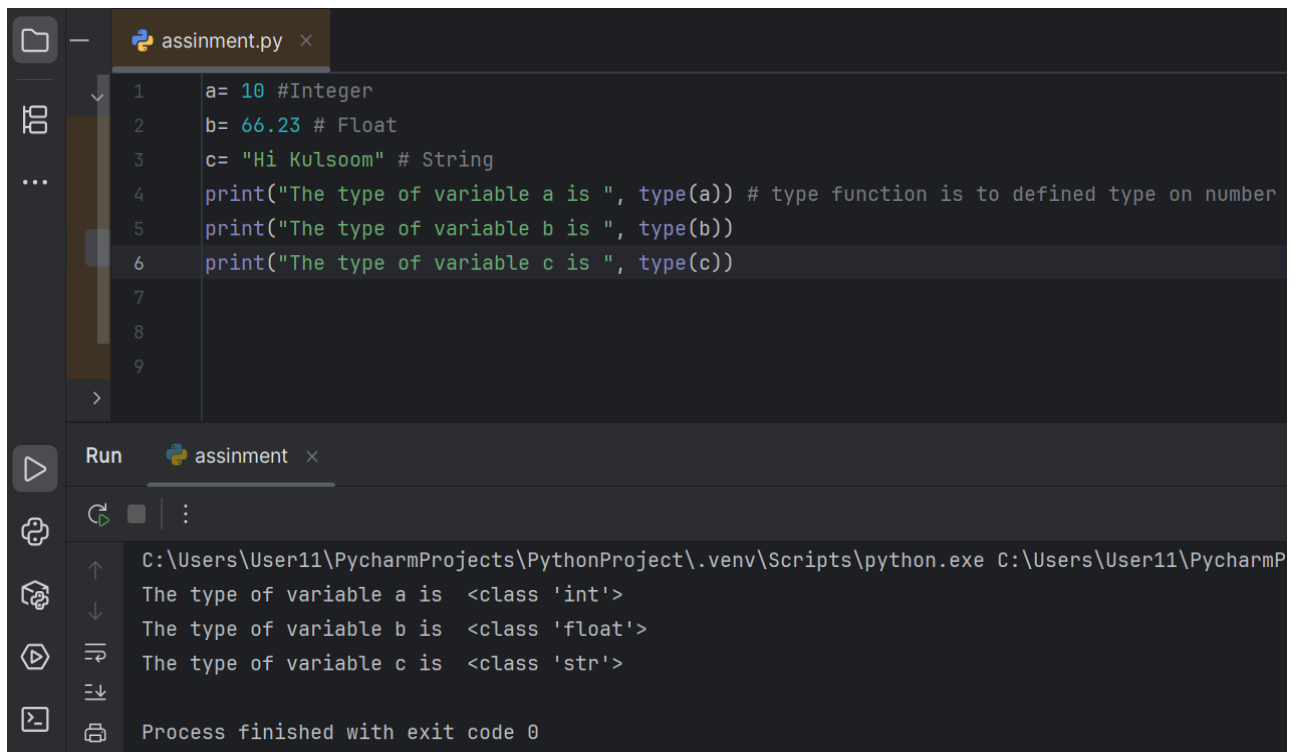
- An integer value to 'a',
- A floating-point value to 'b',
- A string value to 'c'.

Print the type of each variable using the `type()` function.

Sample Output:

```
The type of variable a is <class 'int'>
The type of variable b is <class 'float'>
The type of variable c is <class 'str'>
```

Solution:



The screenshot displays the PyCharm IDE interface. The top editor pane shows a file named `assinment.py` with the following Python code:

```
1 a= 10 #Integer
2 b= 66.23 # Float
3 c= "Hi Kulsoom" # String
4 print("The type of variable a is ", type(a)) # type function is to defined type on number
5 print("The type of variable b is ", type(b))
6 print("The type of variable c is ", type(c))
7
8
9
```

The bottom pane shows the output of running the script. The command prompt displays the following output:

```
C:\Users\User11\PycharmProjects\PythonProject\.venv\Scripts\python.exe C:\Users\User11\PycharmP
The type of variable a is <class 'int'>
The type of variable b is <class 'float'>
The type of variable c is <class 'str'>

Process finished with exit code 0
```

Problem 4: Area of a Rectangle

Problem Statement:

Write a Python program to calculate the area of a rectangle.

- Assign values to `length` and `width` variables.
- Calculate the area using the formula: `area = length * width`.
- Print the result.

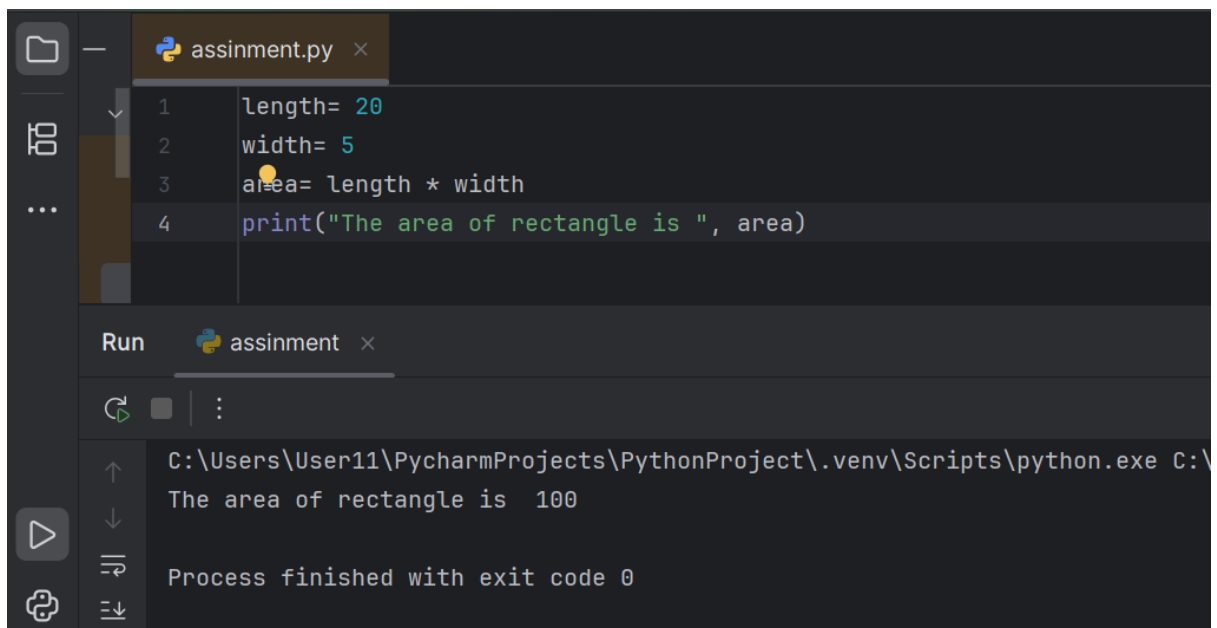
Sample Output:

Length: 10

Width: 5

The area of the rectangle is 50.

Solution:



```
1 length= 20
2 width= 5
3 area= length * width
4 print("The area of rectangle is ", area)
```

Run assinment

C:\Users\User11\PycharmProjects\PythonProject\.venv\Scripts\python.exe C:\Users\User11\PycharmProjects\PythonProject\assinment.py

The area of rectangle is 100

Process finished with exit code 0

Problem 5: Simple Interest Calculation

Problem Statement:

Write a Python program to calculate the simple interest using the formula:

Simple Interest = $(P * R * T) / 100$ Where:

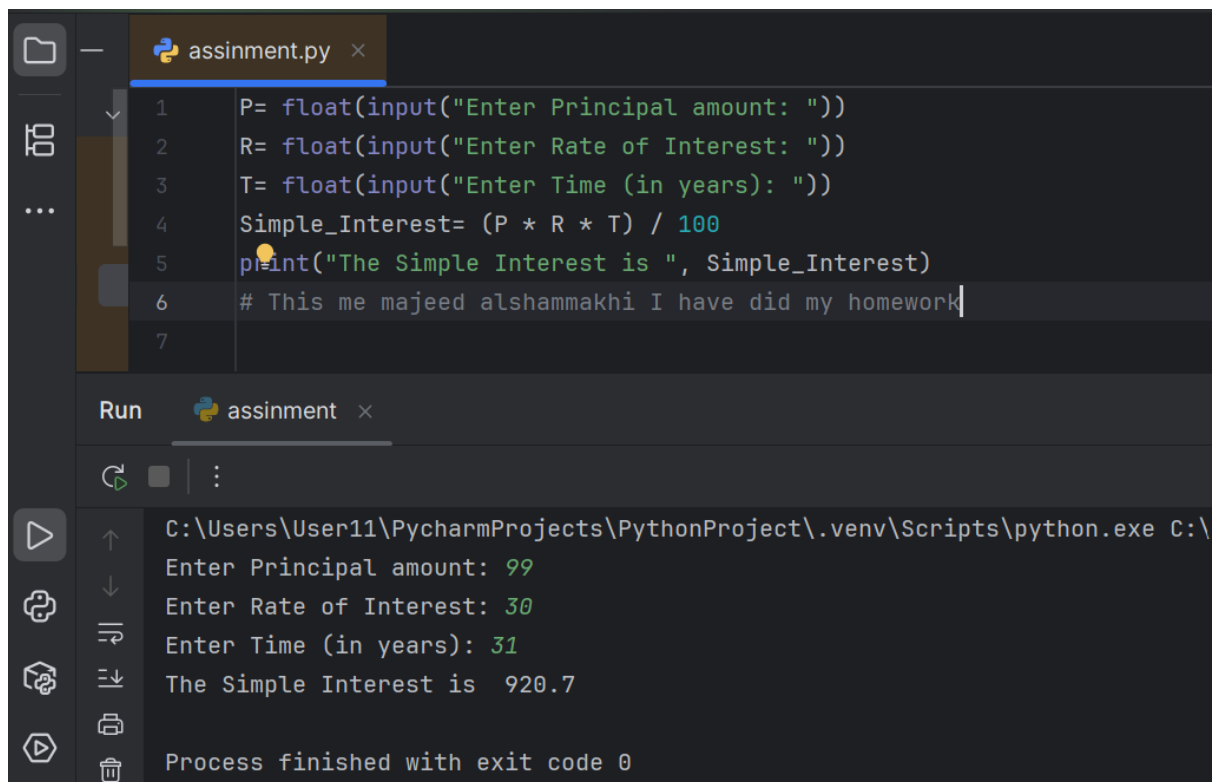
- 'P' is the principal amount.
- 'R' is the rate of interest.
- 'T' is the time in years.

Take values for 'P', 'R', and 'T' as input from the user and print the calculated simple interest.

Sample Output:

```
Enter Principal amount: 1000
Enter Rate of Interest: 5
Enter Time (in years): 2
The Simple Interest is 100.0
```

Solution:



```
assinment.py
1 P= float(input("Enter Principal amount: "))
2 R= float(input("Enter Rate of Interest: "))
3 T= float(input("Enter Time (in years): "))
4 Simple_Interest= (P * R * T) / 100
5 print("The Simple Interest is ", Simple_Interest)
6 # This me majeed alshammakhi I have did my homework
7

Run assinment
C:\Users\User11\PycharmProjects\PythonProject\.venv\Scripts\python.exe C:\
Enter Principal amount: 99
Enter Rate of Interest: 30
Enter Time (in years): 31
The Simple Interest is 920.7
Process finished with exit code 0
```