Assignment: Using Explicit Type Conversion in Python

Objective

This assignment will help you understand how to use **explicit type conversion** to handle user inputs and perform accurate calculations in Python. You will fix two scripts (`exercise1.py` and `exercise2.py`) to ensure variables are of the correct type and outputs are accurate.

Exercise 1: Ensuring Correct Types

Task

Your goal is to modify the script `exercise1.py` so that user inputs match the specified types.

Requirements

- `name` : **string**
- `age` : **integer**
- `height` : **float**
- `loyalty` : **boolean**

Instructions

1. Open the file `exercise1.py` .
2. Modify the code to ensure each variable (`name` , `age` , `height` , `loyalty`) matches its required type.
3. Use explicit type conversion functions like `str()` , `int()` , `float()` , and `bool()` where necessary.

Provided Code

```
# Using explicit type conversion, change the following
# inputs so the types match with the following below
#
# name = type string
# age = type int
# height = type float
```

```
# loyalty = type boolean

# Modify the line below
name = input('What is your name? ')

print(f"Type of name variable is: {type(name)}. It should be <class 'str'>")

# Modify the line below
age = int(input('What is your age? '))

print(f"Type of age variable is: {type(age)}. It should be <class 'int'>")

# Modify the line below
height = float(input('What is your height in meters? '))

print(f"Type of height variable is: {type(height)}. It should be <class 'float'>")

# Modify the line below
loyalty = bool(input('Are you part of our loyalty program? '))

print(f"Type of loyalty variable is: {type(loyalty)}. It should be <class 'bool'>")
```

Expected Output

When the script is run, it should:

1. Prompt the user to input their name, age, height, and loyalty status.
2. Display the type of each variable, confirming that it matches the expected type.

Exercise 2: Calculating Total Bill

Task

Fix the script `exercise2.py` to calculate the total cost of items accurately and display it rounded to two decimal places.

Scenario

You will collect prices for three items:

- 1 coffee
- 1 sandwich
- 1 cake

Instructions

1. Open the file `exercise2.py`.
2. Ensure inputs are converted to `float` for accurate calculations.
3. Calculate the total bill and display it rounded to **two decimal places**.

Provided Code

```
# The below script will ask for 3 inputs. Each input will be based
# on the price of the items - the price is determined by you. The output
# should print the total of the 3 inputs rounded to 2 decimal places e.g
#
#   1 coffee @ $ 2.00
#   1 sandwich @ $ 4.99
#   1 cake @ $ 2.75
#
#   Your total bill is $ 9.74

# Modify the line below
coffee = float(input('1 coffee @: $ '))

# Modify the line below
sandwich = float(input('1 sandwich @: $ '))

# Modify the line below
cake = float(input('1 cake @: $ '))

bill_total = coffee + sandwich + cake

print('Your total bill is ${:4}'.format(bill_total))
```

Expected Output

1. The script should prompt for prices of coffee, sandwich, and cake.
2. Calculate and display the total bill rounded to **two decimal places**.
3. Example:

```
1 coffee @: $ 2.00
1 sandwich @: $ 4.99
1 cake @: $ 2.75
Your total bill is $9.74
```