

C++ Programming Assignment 1: Basic Elements of C++

Objective:

The purpose of this assignment is to help you become familiar with basic elements of C++ programming, including:

1. Declaring variables.
2. Using simple data types (int, float, char, etc.).
3. Writing assignment statements.
4. Understanding type conversion (both implicit and explicit casting).

Difficulty Level:

Beginner – This assignment is designed for students who are just starting to learn C++ programming and covers fundamental concepts of data types, variables, and type conversion.

Assignment Description:

You are required to write a simple C++ program that demonstrates the use of basic data types, variables, assignment statements, and type conversion.

Instructions:

1. Program Overview:

Create a program that declares variables of different data types (e.g., `int`, `float`, `char`, `double`).

Assign values to these variables and demonstrate type conversion (casting) where necessary. Output the results of your operations to the console.

2. Step-by-Step Guide:

1. Declare Variables:

- Declare at least one variable of each of the following types:
 - `int` age

- `float` or `double` (e.g., height)
- `char` (e.g. grade)
- `string` (e.g. Fullname)

2. Assign Values:

Assign meaningful values to the variables. For example, `age = 20;`, `height = 5.8;`, etc.

3. Perform Basic Operations:

Use assignment statements to modify values or perform simple arithmetic operations. For example, `age = age + 10;`

4. Type Conversion (Casting):

- Demonstrate implicit type conversion (e.g., assigning an `int` to a `float`).
- Use explicit type casting, e.g., casting `int` to `float` or vice versa: `(float) intVar` or `static_cast<float>(intVar)`.

5. Output Results:

Use `cout` to print the values of variables and show the result of type conversions.

3. **Program Requirements**:

- The program must compile and run without errors.
- Use proper indentation and comments to explain your code.
- Demonstrate both implicit and explicit type conversion.
- Print clear and meaningful output to the console.

Deliverables:

Submit the following:

1. Source Code: Submit your C++ code in a `.cpp` file.
2. Program Output: Include a screenshot of the output from your program after it has been successfully executed.

Grading Criteria:

- Correctness of code (40%)
- Proper use of variables and data types (20%)
- Proper use of type conversion (20%)
- Code readability, structure, and comments (20%)

Output:

```
My name is : Sumanth  
This is my first basic program in C++  
Age: 25  
Height: 5.8  
I want Grade in CISC115: A  
New Age (float): 25  
Rounded Height (int): 5
```

Input:

```
age = 15;  
height = 5.8;  
name = "Sumanth";  
grade='A';
```