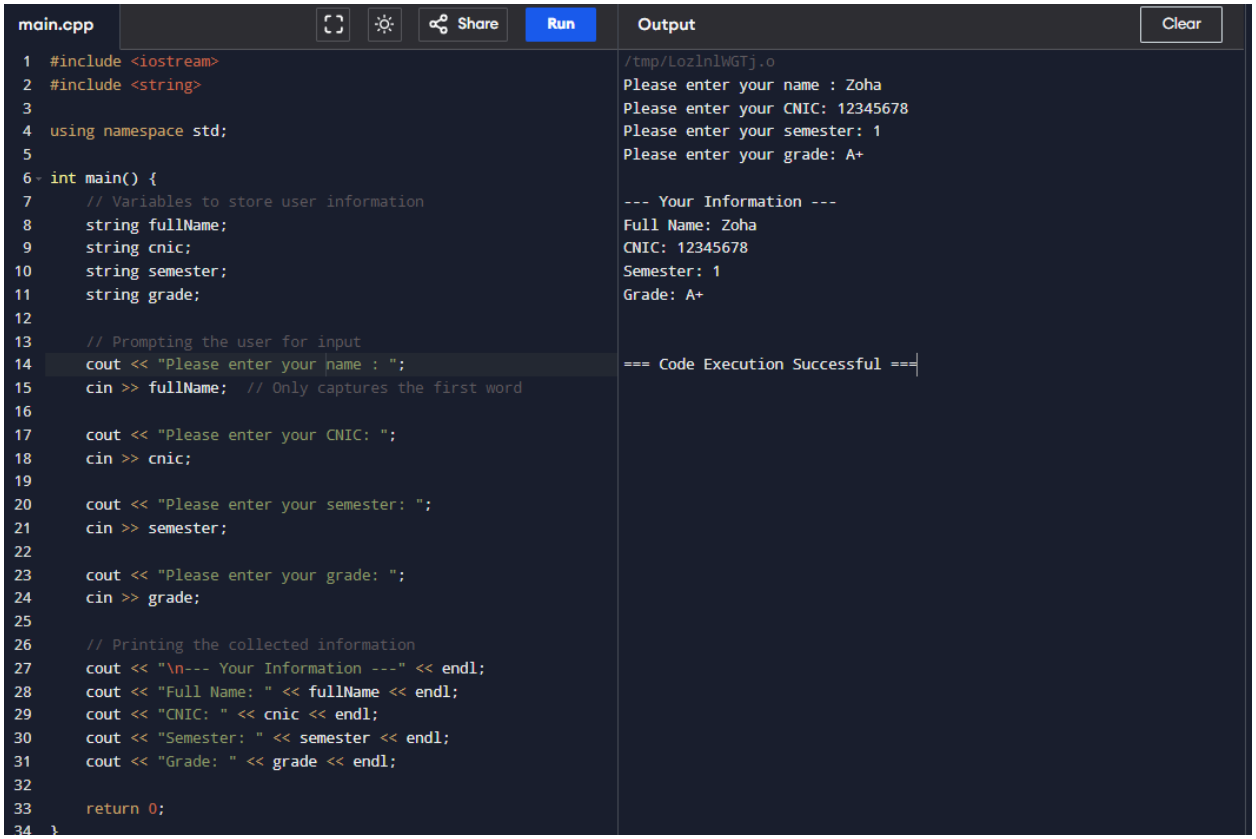
Assignment 3

Task 1:

Write a program to prompt the user to input her/his full name, CNIC, semester and grade then print your information on the screen.

Solution :



Task 2:

Write a program to calculate the area and circumference of a circle. Take all the variable with double or float datatype

Solution :

main.cpp

```cpp
#include <iostream>
using namespace std;

const double PI = 3.141592653589793;

int main() {
    // Variable to store the radius
    double radius;

    // Prompt the user for the radius
    cout << "Enter the radius of the circle: ";
    cin >> radius;

    // Calculate area and circumference
    double area = PI * radius * radius;
    double circumference = 2 * PI * radius;

    // Print the results
    cout << "\n--- Circle Properties ---" << endl;
    cout << "Area: " << area << endl;
    cout << "Circumference: " << circumference << endl;

    return 0;
}
```

Output

```
/tmp/5DaFNycYfQ.o
Enter the radius of the circle: 13.6

--- Circle Properties ---
Area: 581.069
Circumference: 85.4513


=== Code Execution Successful ===
```

Task 3:

Write a program that computes the tax and tip on a restaurant bill for a meal charge.

Solution :

main.cpp | Share | Run | Output | Clear

```cpp
#include <iostream>
#include <iomanip>

using namespace std;

int main() {
    // Constants for tax and tip rates
    const double TAX_RATE = 0.0925;  // 9.25%
    const double TIP_RATE = 0.20;     // 20%

    // Variable to store meal cost
    double meal_cost;

    // Prompt the user for the meal cost
    cout << "Enter the meal cost: ";
    cin >> meal_cost;

    // Calculate tax and tip
    double tax_amount = meal_cost * TAX_RATE;
    double tip_amount = (meal_cost + tax_amount) * TIP_RATE;
    double total_bill = meal_cost + tax_amount + tip_amount;

    // Display the results with 2 decimal places
    cout << fixed << setprecision(2); // Set precision for
        monetary values
    cout << "\n--- Bill Summary ---" << endl;
    cout << "Meal Cost:  " << meal_cost << " Rs" << endl;
    cout << "Tax Amount: " << tax_amount << " Rs"  << endl;
    cout << "Tip Amount: " << tip_amount << " Rs" << endl;
    cout << "Total Bill: " << total_bill << " Rs" << endl;

    return 0;
}
```

```
/tmp/U7rLLqJ5GM.o
Enter the meal cost: 2940

--- Bill Summary ---
Meal Cost:  2940.00 Rs
Tax Amount: 271.95 Rs
Tip Amount: 642.39 Rs
Total Bill: 3854.34 Rs


=== Code Execution Successful ===
```

Task 4:

Write a program which takes your age as an input

Solution :

main.cpp | Share | Run

```cpp
#include <iostream>
using namespace std;

int main() {
    // Variable to store the age
    int age;

    // Prompt the user for their age
    cout << "Enter your age: ";
    cin >> age;

    // Display the output
    cout << "You are " << age << " years old." << endl;
    cout << "One year ago, you were " << (age - 1) << "." <<
        endl;
    cout << "In one year you will be " << (age + 1) << "." <<
        endl;

    return 0;
}
```

Output | Clear

```
/tmp/x58YNdxZIc.o
Enter your age: 19
You are 19 years old.
One year ago, you were 18.
In one year you will be 20.


=== Code Execution Successful ===
```