

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 :

main.cpp	Output
<pre>1 #include <iostream> 2 #include <string> 3 4 using namespace std; 5 6 int main() { 7 // Variables to store user information 8 string fullName; 9 string cnic; 10 string semester; 11 string grade; 12 13 // Prompting the user for input 14 cout << "Please enter your name : "; 15 cin >> fullName; // Only captures the first word 16 17 cout << "Please enter your CNIC: "; 18 cin >> cnic; 19 20 cout << "Please enter your semester: "; 21 cin >> semester; 22 23 cout << "Please enter your grade: "; 24 cin >> grade; 25 26 // Printing the collected information 27 cout << "\n--- Your Information ---" << endl; 28 cout << "Full Name: " << fullName << endl; 29 cout << "CNIC: " << cnic << endl; 30 cout << "Semester: " << semester << endl; 31 cout << "Grade: " << grade << endl; 32 33 return 0; 34 }</pre>	<pre>/tmp/LozlnlWGTj.o Please enter your name : Zoha Please enter your CNIC: 12345678 Please enter your semester: 1 Please enter your grade: A+ --- Your Information --- Full Name: Zoha CNIC: 12345678 Semester: 1 Grade: A+ === Code Execution Successful ===</pre>

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	Output
<pre>1 #include <iostream> 2 using namespace std; 3 4 const double PI = 3.141592653589793; 5 6 int main() { 7 // Variable to store the radius 8 double radius; 9 10 // Prompt the user for the radius 11 cout << "Enter the radius of the circle: "; 12 cin >> radius; 13 14 // Calculate area and circumference 15 double area = PI * radius * radius; 16 double circumference = 2 * PI * radius; 17 18 // Print the results 19 cout << "\n--- Circle Properties ---" << endl; 20 cout << "Area: " << area << endl; 21 cout << "Circumference: " << circumference << endl; 22 23 return 0; 24 } 25</pre>	<pre>/tmp/5DaFNycYfQ.o Enter the radius of the circle: 13.6 --- Circle Properties --- Area: 581.069 Circumference: 85.4513 === Code Execution Successful ===</pre>

Task 3:

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

Solution :

main.cpp	Output
<pre>1 #include <iostream> 2 #include <iomanip> 3 4 using namespace std; 5 6 int main() { 7 // Constants for tax and tip rates 8 const double TAX_RATE = 0.0925; // 9.25% 9 const double TIP_RATE = 0.20; // 20% 10 11 // Variable to store meal cost 12 double meal_cost; 13 14 // Prompt the user for the meal cost 15 cout << "Enter the meal cost: "; 16 cin >> meal_cost; 17 18 // Calculate tax and tip 19 double tax_amount = meal_cost * TAX_RATE; 20 double tip_amount = (meal_cost + tax_amount) * TIP_RATE; 21 double total_bill = meal_cost + tax_amount + tip_amount; 22 23 // Display the results with 2 decimal places 24 cout << fixed << setprecision(2); // Set precision for monetary values 25 cout << "\n--- Bill Summary ---" << endl; 26 cout << "Meal Cost: " << meal_cost << " Rs" << endl; 27 cout << "Tax Amount: " << tax_amount << " Rs" << endl; 28 cout << "Tip Amount: " << tip_amount << " Rs" << endl; 29 cout << "Total Bill: " << total_bill << " Rs" << endl; 30 31 return 0; 32 } 33</pre>	<pre>/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 ===</pre>

Task 4:

Write a program which takes your age as an input

Solution :

main.cpp	Output
<pre>1 #include <iostream> 2 using namespace std; 3 4 int main() { 5 // Variable to store the age 6 int age; 7 8 // Prompt the user for their age 9 cout << "Enter your age: "; 10 cin >> age; 11 12 // Display the output 13 cout << "You are " << age << " years old." << endl; 14 cout << "One year ago, you were " << (age - 1) << "." << endl; 15 cout << "In one year you will be " << (age + 1) << "." << endl; 16 17 return 0; 18 } 19</pre>	<pre>/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 ===</pre>