

Activity No: 6.1**Activity Title: Functions**

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Objectives

This activity aims to develop programming skills using functions.

Instructions

The students should be able to:

2.1 Create a program in C++ that will add, subtract, divide, multiply for a 2 user-input integer values. Use functions in the program.

2.2 Create a program in C++ that will convert a user-input Farenheight to Celcius and vice versa. Use functions in the program.

2.3 Create a program in C++ that will convert dollars into pesos and vice versa. Use functions in the program.

Output/Answer

The screenshot shows a code editor interface with a sidebar of icons for various languages. The main area displays a C++ program named `main.cpp`. The code includes functions for addition, subtraction, multiplication, and division, along with a `main()` function that prompts the user for two integers and prints their results. The output panel shows the execution results for the input 32, including the sum (64), difference (0), product (1024), and quotient (1). The status bar at the bottom indicates a successful execution.

```
main.cpp

1 #include <iostream>
2 using namespace std;
3
4 int add(int a, int b);
5 int subtract(int a, int b);
6 int multiply(int a, int b);
7 float divide(int a, int b);
8
9 int main() {
10     int num1, num2;
11
12     cout << "Enter two integers: ";
13     cin >> num1 >> num2;
14
15     cout << "Addition: " << add(num1, num2) << endl;
16     cout << "Subtraction: " << subtract(num1, num2) << endl;
17     cout << "Multiplication: " << multiply(num1, num2) << endl;
18     if (num2 != 0) {
19         cout << "Division: " << divide(num1, num2) << endl;
20     } else {
21         cout << "Cannot divide by zero!" << endl;
22     }
23
24     return 0;
25 }
26
27 int add(int a, int b) {
28     return a + b;
29 }
30
31 int subtract(int a, int b) {
32     return a - b;
33 }
34
35 int multiply(int a, int b) {
36     return a * b;
37 }
38
```

Output

```
Enter two integers: 32
32
Addition: 64
Subtraction: 0
Multiplication: 1024
Division: 1

== Code Execution Successful ==
```

The screenshot shows a code editor interface with a sidebar of file icons on the left and a main workspace divided into tabs and sections.

File Tabs: The active tab is "main.cpp". Other visible tabs include "C", "JS", "TS", "go", and "php".

Toolbar: The toolbar includes icons for copy, paste, share, and run, along with a "Run" button.

Output Section: This section displays the execution results of the code. It starts with a prompt for a conversion type, followed by the user's choice (2), the input temperature (12), and the resulting Fahrenheit output (53.6°F). A success message is also present.

```
1 #include <iostream>
2 using namespace std;
3
4 float fahrenheitToCelsius(float fahrenheit);
5 float celsiusToFahrenheit(float celsius);
6
7 int main() {
8     float temperature;
9     int choice;
10
11     cout << "Choose a conversion type:\n";
12     cout << "1. Fahrenheit to Celsius\n";
13     cout << "2. Celsius to Fahrenheit\n";
14     cout << "Enter your choice (1 or 2): ";
15     cin >> choice;
16
17     cout << "Enter the temperature: ";
18     cin >> temperature;
19
20     if (choice == 1) {
21         cout << "Temperature in Celsius: " << fahrenheitToCelsius(temperature) << "°C" << endl;
22     } else if (choice == 2) {
23         cout << "Temperature in Fahrenheit: " << celsiusToFahrenheit(temperature) << "°F" << endl;
24     } else {
25         cout << "Invalid choice!" << endl;
26     }
27
28     return 0;
29 }
30
31 float fahrenheitToCelsius(float fahrenheit) {
32     return (fahrenheit - 32) * 5 / 9;
33 }
34
35 float celsiusToFahrenheit(float celsius) {
36     return (celsius * 9 / 5) + 32;
37 }
38
```

The screenshot shows a code editor interface with a sidebar of file icons on the left. The main area displays a C++ program named 'main.cpp'. The code includes functions for converting dollars to pesos and pesos to dollars, and a menu system for selecting the conversion type. The output panel shows the execution results, including the choice of conversion type (Pesos to Dollars), the input amount (12), and the resulting amount (0.666667 USD). A message at the bottom indicates successful code execution.

```
1 #include <iostream>
2 using namespace std;
3
4 float dollarsToPesos(float dollars);
5 float pesosToDollars(float pesos);
6
7 int main() {
8     float amount;
9     int choice;
10
11    cout << "Choose a conversion type:\n";
12    cout << "1. Dollars to Pesos\n";
13    cout << "2. Pesos to Dollars\n";
14    cout << "Enter your choice (1 or 2): ";
15    cin >> choice;
16
17    cout << "Enter the amount: ";
18    cin >> amount;
19
20    if (choice == 1) {
21        cout << "Amount in Pesos: " << dollarsToPesos(amount) << " MXN" << endl;
22    } else if (choice == 2) {
23        cout << "Amount in Dollars: " << pesosToDollars(amount) << " USD" << endl;
24    } else {
25        cout << "Invalid choice!" << endl;
26    }
27
28    return 0;
29 }
30
31 float dollarsToPesos(float dollars) {
32     return dollars * 18.0; // Example conversion rate: 1 USD = 18 MXN
33 }
34
35 float pesosToDollars(float pesos) {
36     return pesos / 18.0; // Example conversion rate: 1 USD = 18 MXN
37 }
38
```

Supplementary Activity (if any)

Conclusion

Assessment Rubric: SO 7