Addition of two number Using function in c++

#include <iostream>

#include <string>

using namespace std;

int addNumbers(int num1, int num2) {

return num1 + num2;

}

int main() {

cout << "Name: Mostak Shahriar" << endl << "Roll: 23303076"<< endl;

int a, b;

cout << "Enter the first number: ";

cin >> a;

cout << "Enter the second number: ";

cin >> b;

int sum = addNumbers(a, b);

cout << "The sum of " << a << " and " << b << " is: " << sum << endl;

return 0;

}

Factorial a number using function

#include <iostream>

using namespace std;

// Function to calculate factorial

int factorial(int num) {

int fact = 1;

for (int i = 1; i <= num; ++i) {

fact \*= i; // Multiply current number with fact

}

return fact;

}

int main() {

cout << "Name: Mostak Shahriar" << endl << "ID: 23303076" << endl;

int n;

// Input a number

cout << "Enter a number to calculate its factorial: ";

cin >> n;

// Factorial of negative numbers is undefined

if (n < 0) {

cout << "Factorial of a negative number is not defined." << endl;

} else {

// Call the function and display the result

cout << "The factorial of " << n << " is: " << factorial(n) << endl;

}

return 0;

}

Swaping two number using reference variable in function

#include <iostream>

using namespace std;

void swapNumbers(int &num1, int &num2) {

int temp = num1;

num1 = num2;

num2 = temp;

}

int main() {

cout << "Name: Mostak Shahriar" << endl << "ID: 23303076" << endl;

int a, b;

cout << "Enter the first number: ";

cin >> a;

cout << "Enter the second number: ";

cin >> b;

cout << "Before swapping: a = " << a << ", b = " << b << endl;

swapNumbers(a, b);

cout << "After swapping: a = " << a << ", b = " << b << endl;

return 0;

}

Swaping two number using Pointer in function

#include <iostream>

using namespace std;

void swapNumbers(int\* num1, int\* num2) {

int temp = \*num1;

\*num1 = \*num2;

\*num2 = temp;

}

int main() {

cout << "Name: Mostak Shahriar" << endl << "ID: 23303076" << endl;

int a, b;

cout << "Enter the first number: ";

cin >> a;

cout << "Enter the second number: ";

cin >> b;

cout << "Before swapping: a = " << a << ", b = " << b << endl;

swapNumbers(&a, &b);

cout << "After swapping: a = " << a << ", b = " << b << endl;

return 0;

}

Cube a number using inline function

#include <iostream>

using namespace std;

inline int cube(int num) {

return num \* num \* num;

}

int main() {

cout << "Name: Mostak Shahriar" << endl << "ID: 23303076" << endl;

int n;

cout << "Enter a number to calculate its cube: ";

cin >> n;

cout << "The cube of " << n << " is: " << cube(n) << endl;

return 0;

}

Sum of two number using recursion function

#include <iostream>

using namespace std;

int sum(int a, int b) {

if (b == 0) {

return a;

}

return sum(a + 1, b - 1);

}

int main() {

cout << "Name: Mostak Shahriar" << endl << "ID: 23303076" << endl;

int num1, num2;

cout << "Enter the first number: ";

cin >> num1;

cout << "Enter the second number: ";

cin >> num2;

cout << "The sum of " << num1 << " and " << num2 << " is: " << sum(num1, num2) << endl;

return 0;

}

Factoril using recursion function

#include <iostream>

using namespace std;

int factorial(int n) {

if (n == 0 || n == 1) {

return 1;

}

return n \* factorial(n - 1);

factorial of (n-1);

}

int main() {

cout << "Name: Mostak Shahriar" << endl << "ID: 23303076" << endl;

int num;

cout << "Enter a number to calculate its factorial: ";

cin >> num;

if (num < 0) {

cout << "Factorial of a negative number is not defined." << endl;

} else {

cout << "The factorial of " << num << " is: " << factorial(num) << endl;

}

return 0;

}

Default arguments in C++:

#include <iostream>

using namespace std;

int sum(int num1 = 0, int num2 = 0) {

return num1 + num2;

}

int main() {

cout << "Name: Mostak Shahriar" << endl << "ID: 23303076" << endl;

int a, b;

cout << "Enter the first number (or press Enter to use default 0): ";

cin >> a;

cout << "Enter the second number (or press Enter to use default 0): ";

cin >> b;

cout << "The sum of " << a << " and " << b << " is: " << sum(a, b) << endl;

cout << "The sum with default arguments is: " << sum() << endl;

return 0;

}

Const arguments in C++:

#include <iostream>

using namespace std;

int displaySum(const int num1, const int num2) {

return num1 + num2;

}

int main() {

cout << "Name: Mostak Shahriar" << endl << "ID: 23303076" << endl;

int a = 10, b = 20;

cout << "The sum of " << a << " and " << b << " is: " << displaySum(a, b) << endl;

return 0;

}