

Function prototype

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- ▶ A function should be always defined before it is called
- ▶ However if you want to define a function later on you can use function prototype

```
returnType functionName(dataType1, dataType2, ...);
```

```
// function prototype
void add(int, int);

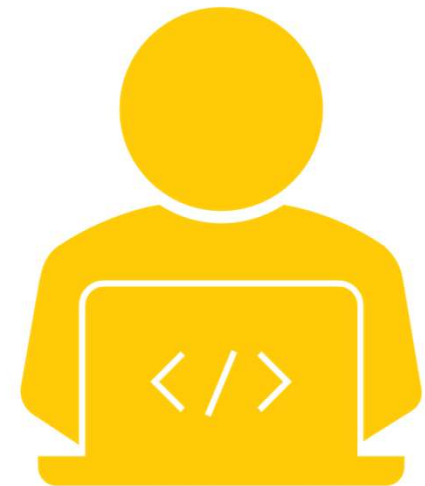
int main() {
    // calling the function before declaration.
    add(5, 3);
    return 0;
}

// function definition
void add(int a, int b) {
    cout << (a + b);
}
```

Function Prototype

Parameters

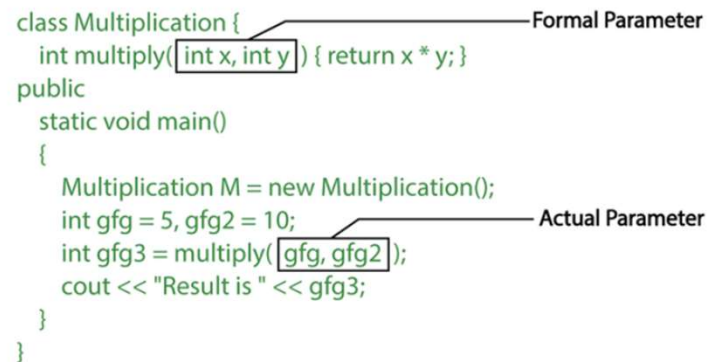
- ▶ In programming, parameters are variables or values that are passed into a function when it is called.
- ▶ They provide a way to send data to a function so that the function can perform a task or computation based on that data.
- ▶ Parameters are defined in the function's signature, and the values passed as arguments when the function is called are assigned to these parameters.



The parameters passed to the function are called **actual parameters**. For example, in the program below, 5 and 10 are actual parameters.

The parameters received by the function are called **formal parameters**. For example, in the above program x and y are formal parameters.

```
class Multiplication {  
    int multiply(int x, int y) { return x * y; }  
public  
    static void main()  
    {  
        Multiplication M = new Multiplication();  
        int gfg = 5, gfg2 = 10;  
        int gfg3 = multiply(gfg, gfg2);  
        cout << "Result is " << gfg3;  
    }  
}
```



Formal Parameter and Actual Parameter

Formal Parameters and Actual Parameters

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

int add(int a,int b=9){
    cout<<a+b;
}

int main(){

add(4);

}
```

Function with default arguments

```
int array_traverse(int arr[5]){  
    for(int i=0; i<5; i++){  
        cout<<arr[i]<<endl;  
    }  
}
```

```
int main(){  
    int arr1[5]={12,13,14,15,16};  
    array_traverse(arr1);  
}
```

C++ Passing an array to function

C++ Passing an array to function

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- ▶ Write a C++ code to create a function which can find count of even numbers from an array of 10 elements

Math Library

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- ▶ Include Library using `#include<cmath>`
- ▶ Few Functions:
 - ▶ `double sin(double)`
 - ▶ `double cos(double)`
 - ▶ `double tan(double)`
 - ▶ `double sqrt(double)`
 - ▶ `double power(double,double)`
 - ▶ `double floor(double)`
 - ▶ `double ceil(double)`
 - ▶ `double round(double)`
 - ▶ `Int abs(int)`

Explore math library

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- ▶ [https://www.programiz.com/cpp-programming/library-function/cmath/round#:~:text=The%20round\(\)%20function%20in,in%20the%20cmath%20header%20file](https://www.programiz.com/cpp-programming/library-function/cmath/round#:~:text=The%20round()%20function%20in,in%20the%20cmath%20header%20file).