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Introduction to Function Prototype in C

A function prototype is one of the most important features of C programming which wa originated from C++. A function prototype is a declaration in the code that instructs the compiler about the data type of the function, arguments and parameter list. As we all know that

```
returntypefunctionname( datatype paramter1 , datatype paramter2 , datatype paramter3..);
```

Example:

Code:

```
intaddition(int a, int b);
```

In the above example addition is the name of the function of integer data type is the return type and a and b are the argument of two arguments of type int passed to the function. Note that we can pass as many arguments we want in our function based on the requirement. Also in the same program we can define as many prototype we want but they should differ in either name or argument list. All you have to do is define a prototype in the code and then call it anytime by using the function name.

Examples of Function Prototype in C

Given below are the examples mentioned:

Example #1

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```
{
int num1,num2,total;
printf( " Please enters the 2 numbers you want to add : " ) ;
scanf( "%d %d" , &num1 , &num2 ) ;
total = Num_addition( num1 , num2 ) ;        // calling the
function
printf( " The total of the given numbers is = %d " , total ) ;
return 0 ;
}
int Num_addition( int i , int j )         // function definition
for prototype
{
int results;
results = i + j ;
return results ;
}
```

Output:

```
 Please enters the 2 numbers you want to add : 56
87
 The total of the given numbers is = 143
```

As you can see in the above code, initially we are declaring the function prototype for th addition of two numbers with name “ Num_addition ” of integer return type with two integer arguments named as i and j into the function. In the main class, we defined three integers

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Example #2

Code:

```
#include <stdio.h>
intNum_subtraction( inti , int j ); // prototype for the function
intmain()
{
int num1 , num2 , output ;
printf( " Please enters the 2 numbers you want to subtract : " ) ;
scanf( "%d %d" , &num1 , &num2 ) ;
output = Num_subtraction( num1 , num2 ) ;
printf( " The subtraction of the given numbers is = %d " , output
) ;
return 0 ;
}
intNum_subtraction( inti , int j )// function definition
{
intresults ;
results = i - j ;
return results ;
}
```

Output:

```
 Please enters the 2 numbers you want to subtract : 90
45
```

integer arguments named as i and j into the function. In the main class, we defined three integers num1, num2, and output. After that, we are taking input from the users then storing the subtraction results of the two given numbers in output. To call the function Num_subtraction function is used again. At last in the function definition you can see we are giving the logic to perform subtraction and store it in results.

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```
#include <stdio.h>
intNum_multiplication( inti , int j );// prototype for the
function
intmain()
{
int num1 , num2 , output ;
printf( " Please enters the 2 numbers you want to multiply : " );
scanf( "%d %d" , &num1 , &num2 ) ;
output = Num_multiplication( num1 , num2 );// calling the function
printf( " The multiplication of the given numbers is = %d " ,
output );
return 0 ;
}
intNum_multiplication( inti , int j )// function definition
{
intresults ;
results = i * j ;
return results ;// return statement to return results to user
}
```

Output:


```
 Please enters the 2 numbers you want to multiply : 4
7
 The multiplication of the given numbers is = 28
```

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the multiplication results of the two given numbers in output. To call the function Num_multiplication function is used again. At last in the function definition you can see we are giving the logic to perform multiplication and store it in results.

Conclusion

Defining a function prototype in C helps is saving a huge amount of time in debugging and when it comes to overloading the function, prototypes help in figuring out which function to call in the given code which is really helpful in avoiding ambiguity and other programming problems.

Recommended Articles

This is a guide to Function Prototype in C. Here we discuss the introduction to Function Prototype in C along with respective examples for better understanding. You may also have a look at the following articles to learn more –

1. C Literals (https://www.educba.com/c-literals/)
2. Memory Allocation in C (https://www.educba.com/memory-allocation-in-c/)
3. File Handling in C (https://www.educba.com/file-handling-in-c/)
4. Constants in C (https://www.educba.com/constants-in-c/)

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(https://www.educba.com/software-development/courses/software-development-course/?btnz=edu-blg-inline-banner3)

(https://www.educba.com/software-development/)

Android (https://play.google.com/store/apps/details?id=com.educba.www)

Resources

Free Courses (https://www.educba.com/software-development/free-courses/?source=footer)

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