

Variadic functions in C



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The Framework



What is Variadic functions in C

- Variadic functions are functions that can take a variable number of arguments.

```
functionName(arg1, arg2, arg3)
```

Why Variadic Functions

- a variadic function adds flexibility to the program.
- It takes one fixed argument and then any number of arguments can be passed.

```
int sumOfTwoNumbers(int x, int y) {  
    return x + y;  
}
```

```
int sumOfThreeNumbers(int a, int b, int c) {  
    return a + b + c;  
}
```

```
int sumOfFourNumbers(int w, int x, int y, int z) {  
    return w + x + y + z;  
}
```

How to write Variadic functions in C

- The declaration of a variadic function uses an ellipsis as the last parameter

```
#include <stdarg.h>
int printf(const char* format, ...);
```

Macros

Defined in header `<stdarg.h>`

<code>va_start</code>	enables access to variadic function arguments (function macro)
<code>va_arg</code>	accesses the next variadic function argument (function macro)
<code>va_copy</code> (C99)	makes a copy of the variadic function arguments (function macro)
<code>va_end</code>	ends traversal of the variadic function arguments (function macro)

Type

<code>va_list</code>	holds the information needed by <code>va_start</code> , <code>va_arg</code> , <code>va_end</code> , and <code>va_copy</code> (typedef)
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Resources used

- <https://en.cppreference.com/w/c/variadic>
- <https://www.geeksforgeeks.org/variadic-function-s-in-c/>

Q/A



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Sessions**

