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What does main() return in C and C++?

C

According to coding standards, a good return program must exit the main function with **0**. Although we are using `void main()` in **C**, In which we have not suppose to write any kind of return statement but that doesn't mean that C code doesn't require 0 as **exit code**. Let's see one example to clear our thinking about need of **return 0** statement in our code.

Example #1 :

```c
#include <stdio.h>

void main()
{

    // This code will run properly
    // but in the end,
    // it will demand an exit code.
    printf("It works fine");
}
```

Output:

```
It works fine
```

Runtime Error:

```
NZEC
```

As we can see in the output the compiler throws a runtime error **NZEC**, Which means that **Non Zero Exit Code**. That means that our main program exited with non zero exiting code so if we want to be a developer than we make these small things in our mind.

Correct Code for C :

```c
#include <stdio.h>

int main()
{

    // This code will run properly
    // but in the end,
    // it will demand an exit code.
    printf("This is correct output");
    return 0;
}
```

Output:

```
This is correct output
```

Note: Returning value other than zero will throw the same runtime error. So make sure our code return only 0.

Example #2 :

```c
#include <stdio.h>

int main()
{

    printf("GeeksforGeeks");
```

```
    return "gfg";
}
```

Output:

```
 It works fine
```

Runtime Error:

```
 NZEC
```

Correct Code for C :

```c
#include <stdio.h>

int main()
{

    printf("GeeksforGeeks");
    return 0;
}
```

Output:

```
 GeeksforGeeks
```

C++

In case of C++, We are not able to use **void** keyword with our `main()` function according to coding namespace standards that's why we only intend to use **int** keyword only with main function in C++. Let's see some examples to justify these statements.

Example #3 :

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

void main()
{
    cout << "GeeksforGeeks";
}
```

Compile Errors:

```
 prog.cpp:4:11: error: '::main' must return 'int'
  void main()
           ^
```

Correct Code for C++ :

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

int main()
{
    cout << "GeeksforGeeks";
    return 0;
}
```

Output:

```
 GeeksforGeeks
```

Example #4 :

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

char main()
{
    cout << "GeeksforGeeks";
    return "gfg";
}
```

Compile Errors:

```
prog.cpp:4:11: error: '::main' must return 'int'
 char main()
           ^
prog.cpp: In function 'int main()':
prog.cpp:7:9: error: invalid conversion from 'const char*' to 'int' [-fpermissive]
   return "gfg";
           ^
```

Correct Code for C++ :

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

int main()
{
    cout << "GeeksforGeeks";
    return 0;
}
```

Output:

```
GeeksforGeeks
```

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