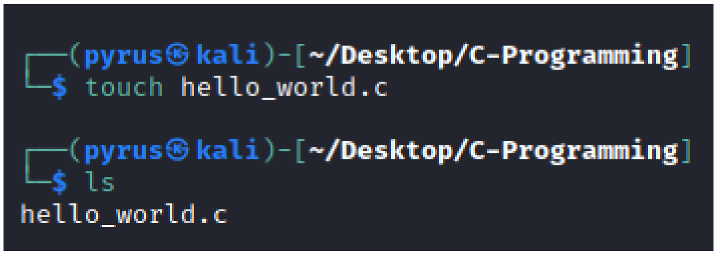
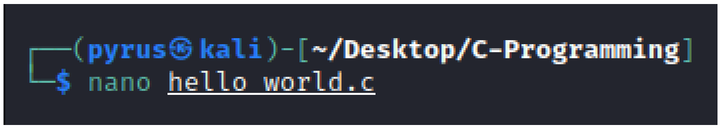
Hello World Program:

So we will be using nano to write our programs, so let's create a new file called "hello_world" with the ".c" extension which tells the OS that it is a C file.



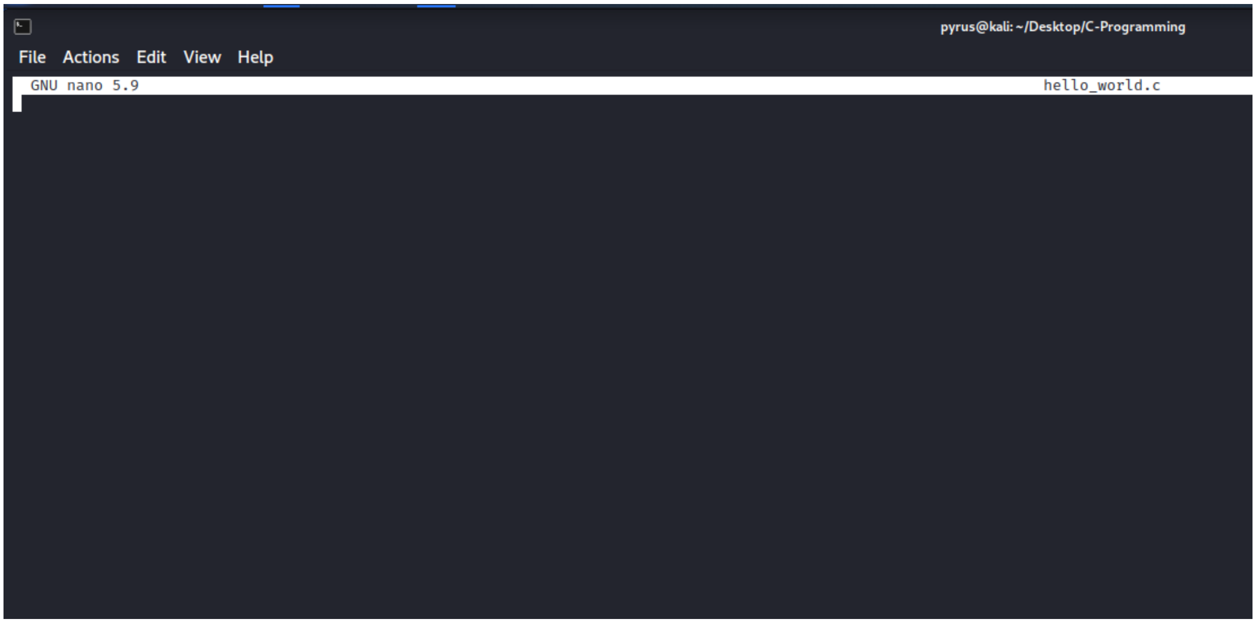
```
┌──(pyrus㉿kali)-[~/Desktop/C-Programming]
└─$ touch hello_world.c

┌──(pyrus㉿kali)-[~/Desktop/C-Programming]
└─$ ls
hello_world.c
```

Then open the file with the nano editor



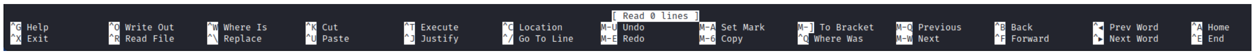
```
┌──(pyrus㉿kali)-[~/Desktop/C-Programming]
└─$ nano hello_world.c
```

We will be taken to a screen where we can type



```
 GNU nano 5.9                                                                                hello_world.c
```

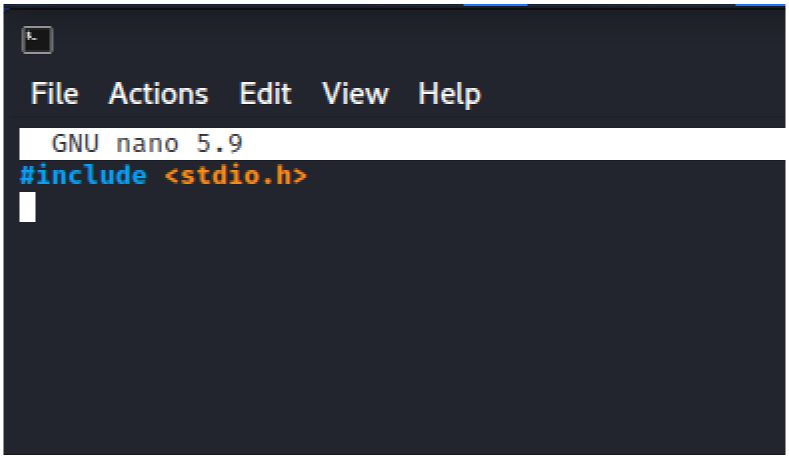
With various commands that we can use on the bottom



```
                                                         [ Read 0 lines ]
^G Help      ^O Write Out  ^W Where Is   ^K Cut        ^T Execute    ^C Location   M-U Undo      M-A Set Mark  M-] To Bracket  M-Q Previous  ^B Back       ^◀ Prev Word  ^A Home
^X Exit      ^R Read File  ^\ Replace    ^U Paste      ^J Justify    ^/ Go To Line M-E Redo      M-6 Copy      ^Q Where Was    M-W Next      ^F Forward    ^▶ Next Word  ^E End
```

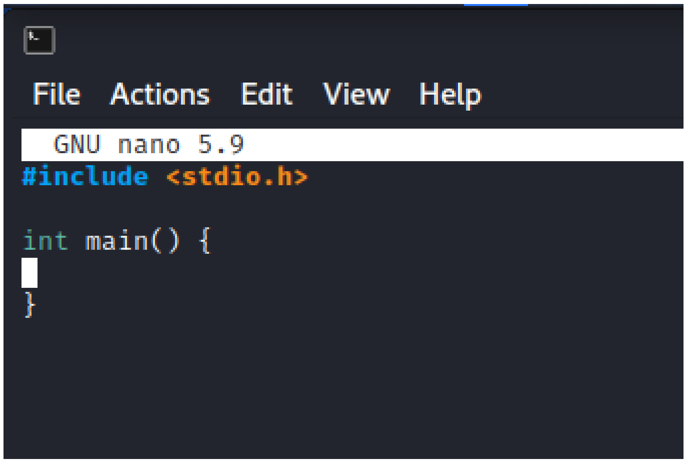
Now let's write our first C Program

We start by including the contents of a C file that we will need for this program which is the stdio.h file (Standard input and output) Let's do this



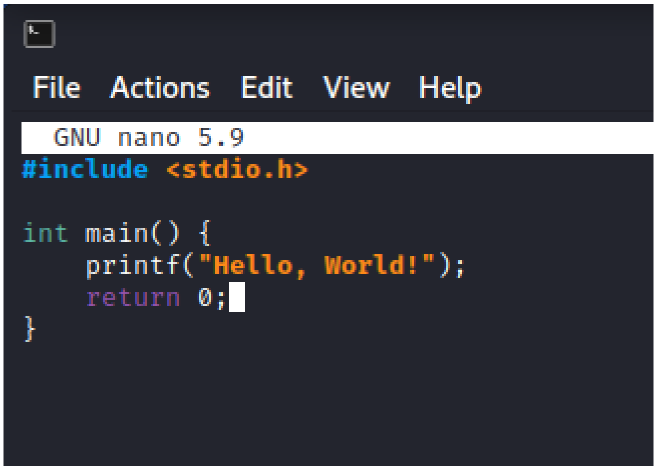
```
#include <stdio.h>
```

We are going to use functions such as printf and the stdio.h files contain these functions, so that is why we include it.
We will now make a main() function as any execution in C Programs usually start with the main() function



```
#include <stdio.h>

int main() {

}
```

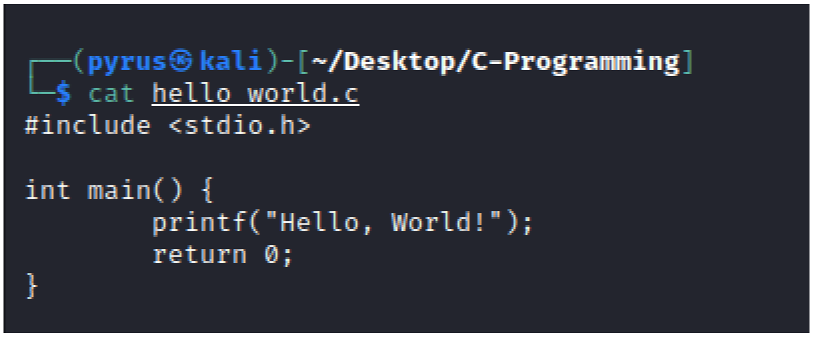
Now let's use the printf() function to print out "Hello, World!" which is the goal of this program
Now at the end of the function we have to add a "return 0;" line as it tell the program to stop after it reads it



```
  GNU nano 5.9
#include <stdio.h>

int main() {
    printf("Hello, World!");
    return 0;
}
```

Now let's save the file with Ctrl + O , hit enter and then Ctrl + X

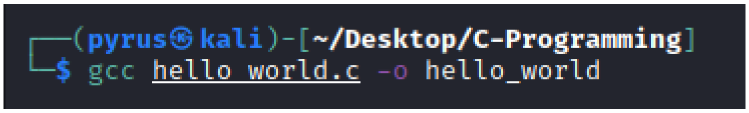
If we cat the file, we should see the contents of our Hello World Program



```
┌──(pyrus㉿kali)-[~/Desktop/C-Programming]
└─$ cat hello_world.c
#include <stdio.h>

int main() {
        printf("Hello, World!");
        return 0;
}
```

Now it's time to compile the program, which means we are converting our source code file that is written in C to a assembly language which will make it an executable (a file that is capable of being executed or run as a program)

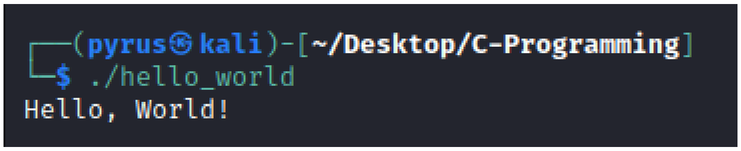
We will use GCC (GNU Compiler Collection) to do this .



```
┌──(pyrus㉿kali)-[~/Desktop/C-Programming]
└─$ gcc hello_world.c -o hello_world
```

"-o" is telling the program to save the executable in a file called "hello_world" in our case.

Now lets run the file



```
┌──(pyrus㉿kali)-[~/Desktop/C-Programming]
└─$ ./hello_world
Hello, World!
```

Awesome, you just made your first C Program!