

DTS202TC Foundation Of Parallel Computing

Tutorial 1

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1 C Programming Language Review

2 Setup and Demo

```
1  #include <stdio.h>
2  /* The simplest C Program */
3  int main(int argc, char **argv)
4  {
5      printf("Hello World!\n");
6      return 0;
7  }
```

- Compiling/Building process: `gcc hello.c -o hello`
 - Command: `gcc <options> <source_file.c>`
 - Options:
 - ★ **-Wall**: Shows all warnings
 - ★ **-o** output_file_name
 - ★ **-g**: Include debugging information in the binary.
- Compiler Tool
 - gcc (GNU Compiler)
 - icc (Intel C compiler)

hello:

```
gcc -g -Wall hello.c -o hello
```

pth:

```
gcc -g -Wall hello_pth.c -o hello_pth
```

clean:

```
rm -f hello hello_pth
```

C	C++
C supports procedural programming paradigm	C++ supports both procedural and object oriented programming paradigms
C uses functions for input/output. For example <i>scanf</i> and <i>printf</i> .	C++ uses objects for input output. For example <i>cin</i> and <i>cout</i> .
C provides <i>malloc()</i> and <i>calloc()</i> functions for dynamic memory allocation, and <i>free()</i> for memory de-allocation.	C++ provides <i>new</i> operator for memory allocation and <i>delete</i> operator for memory de-allocation.

<https://www.tutorialspoint.com/cprogramming/index.htm>

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