

# CS 2211

# Systems Programming

Command Line Arguments

# Command Line Arguments

```
int main( int argc, char *argv[])
```

The most important function of C is `main()` function.

It is mostly defined with a return type of `int` and without parameters

```
int main(void)
```

We can also give command-line arguments in C.

Command-line arguments are given after the name of the program in command-line shell of Operating Systems.

To pass command line arguments, we typically define `main()` with two arguments :  
first argument is the number of command line arguments  
second is list of command-line arguments.

# Command Line Arguments

```
int main( int argc, char *argv[])
```

**argc (ARGument Count)** is int and stores number of command-line arguments passed by the user including the name of the program.

So if we pass a value to a program, value of argc would be 2 (one for argument and one for program name)

The value of argc should be non negative.

**argv(ARGument Vector)** is array of character pointers listing all the arguments.

If argc is greater than zero, the array elements from argv[0] to argv[argc-1] will contain pointers to strings.

Argv[0] is the name of the program , After that till argv[argc-1] every element is command -line arguments.

## Passing Unix parameters to a C program

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

int main(int argc, char *argv[])
{
    int counter;
    printf ("\nProgram name: %s\n\n", argv [0]);
    if (argc > 1) {
        for(counter=0;counter<argc;counter++)
            printf("argv[%d]: %s\n",counter,argv[counter]);
    }
    else
        puts ("No command line arguments entered.");

    return 0;
}
```

*Program Name.*

## Passing Unix parameters to a C program

```
# Imagguil@compute:~/private/courses/CS2211_W20
# [lmagguil@compute CS2211_W20]$
# [lmagguil@compute CS2211_W20]$ gcc -o args main.c
i [lmagguil@compute CS2211_W20]$ ./args one two "three and three" four 5 6 7
{ Program name: ./args

argv[0]: ./args
argv[1]: one
argv[2]: two
argv[3]: three and three
argv[4]: four
argv[5]: 5
argv[6]: 6
argv[7]: 7
[lmagguil@compute CS2211_W20]$
[lmagguil@compute CS2211_W20]$
```

```
    return 0;
}
```

# Properties of Command Line Arguments

- 1.They are passed to main() function.
- 2.They are parameters/arguments supplied to the program when it is invoked.
- 3.They are used to control program from outside instead of hard coding those values inside the code.
- 4.argv[argc] is a NULL pointer.
- 5.argv[0] holds the name of the program.
- 6.argv[1] points to the first command line argument and argv[n] points last argument.

**Note :** You pass all the command line arguments separated by a space, but if argument itself has a space then you can pass such arguments by putting them inside double quotes "" or single quotes " ' " .

"three and four"  
=> 会被认为是一个连起来的String类型.

# C Command Line Arguments

**END OF Command Line Arguments**

