
Week 11

XMUT-NWEN 241 - 2024 T2

Systems Programming

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Content

Command Line Arguments

Quick Tutorial on File Stream I/O and Command Line Arguments

Command Line Arguments

Command Line Arguments

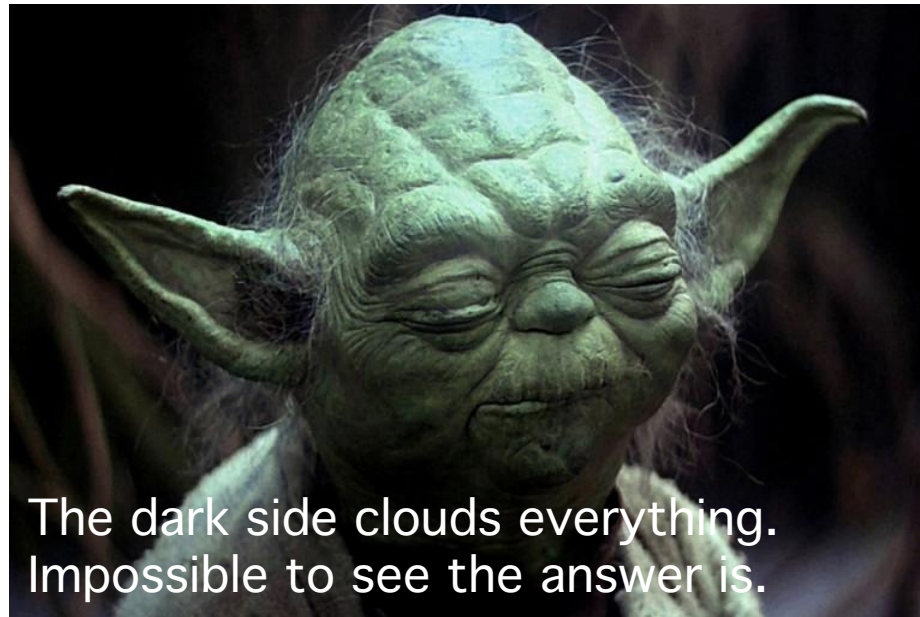
- *Command line arguments* are parameters supplied to a program when it is invoked
- Example:
 - When invoking the command `cd` to change directory, you may have to specify the directory that you want to go to as an argument:

```
$ cd /home/yoda/padawan_grades
```

Command line argument

Command Line Arguments

- *Command line arguments* are parameters supplied to a program when it is invoked
- How do these parameters get into the program?



The dark side clouds everything.
Impossible to see the answer is.

main() Function

- The main function can actually be implemented in two ways

```
int main(void)
{
    ...
}
```

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

Command Line Arguments

- *Command line arguments* are parameters supplied to a program when it is called
- How do these parameters get into the program?
 - Every C program has a `main()` function
 - `main()` can actually take 2 arguments, conventionally called `argc` and `argv`
 - Command line arguments are passed to the program through `argc` and `argv`

Passing Arguments to main()

- General format of command line arguments:

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

- argc
 - Number of arguments (including program name)
- argv
 - Array of strings
 - argv[0] → program name
 - argv[1] → first argument
 - ...
 - argv[argc-1] → last argument

Example

- Consider the C program main_arg.c:

```
#include <stdio.h>

int main(int argc, char* argv[])
{
    int i;
    printf("%d arguments\n", argc);
    for(i = 0; i < argc; i++)
        printf("    %d: %s\n", i, argv[i]);
    return 0;
}
```

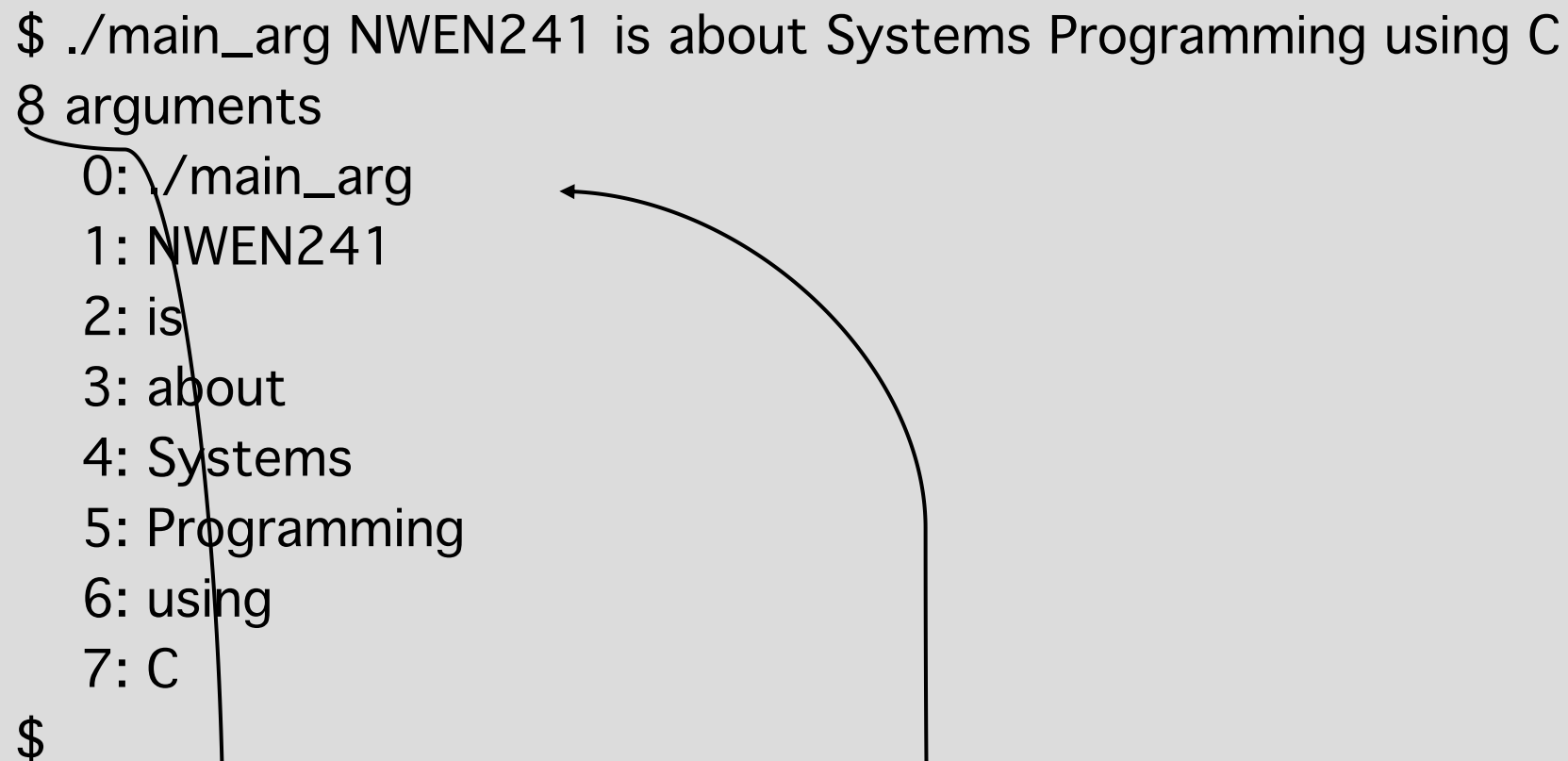
Example

- Compile and generate executable file main_arg

```
gcc main_arg.c -o main_arg
```

Program Output

```
$ ./main_arg NWEN241 is about Systems Programming using C
8 arguments
0: ./main_arg
1: NWEN241
2: is
3: about
4: Systems
5: Programming
6: using
7: C
$
```



Total of 8 arguments including program name itself.
Arguments are read in as strings.