

# Advanced Programming

## COEN 11

Lab 7

# Lab 7

- Waiting List with File I/O
  - Extension of Lab 6
    - Add saving/retrieving

# Lab 7

## □ Initially

- The waiting list may be either
  - empty
  - formed with information read from a file

## □ At the end

- The updated waiting list is saved into a file

# Lab 7

- ❑ The info should be saved in a text file according to the following format:

| Name  | Group Size |
|-------|------------|
| ----- |            |
| Joe   | 5          |
| Mary  | 3          |
| Zoe   | 3          |

- ❑ It should be possible to read the file with commands such as cat and more

# Lab 7

- ❑ The name of the file is an argument for the program
  - If the file does not exist
    - fopen returns NULL for reading
    - the list starts empty and is saved at the end into a file with the given name
  - If the file does exist
    - the list is initially formed with the information obtained from the file and is saved into the same file at the end

# Lab 7

- ❑ The name of the file is an argument for the program

➤ Example:

```
# ./wait_list <file_name>
```

or

```
# ./a.out <file_name>
```

# Lab 7

- ❑ The name of the file is the first argument for the program

➤ In the code:

```
main (int argc, char *argv[ ])
{
    ...
    if (argc == 1)
    {
        printf ("The name of the file is missing!\n");
        return 1;
    }
    else
        read_file (argv[1]);
    ...
}
```

# Lab 7

□ The name of the file is an argument for the program

➤ In the code:

- `argc` gives the number of arguments
- `argv` is an array of strings, each of which is one of the arguments for the program
- `argv[0]` is the name of the executable
- `argv[1]` - `argv[argc - 1]` are the arguments



# Lab 7

- ❑ The waiting list is created/modified interactively, as in Lab 5 or 6, except that command quit will save the info into a file.
  - insert name number - insert a node with the name and number of people specified
  - search size - extract (show and delete) oldest node with a number  $\leq$  size
  - change the size of a group for a reservation given the name
  - list - print the list, name and number, from oldest to newest
  - quit - save the list in the file specified and quit

# Lab7

## □ Requirements

- Use same insert function for inserting information from the file and from the keyboard.
- Your insert function should have the following type:
  - `void insert (char *, int);`
- Read the name and number to local variables (char array and int) before calling the insert function.

# Lab 7

## □ Requirements

➤ Names cannot repeat!

- Need to deal with that before calling function insert

➤ Use function fseek to read the beginning of the file (header) before reading the data (names/numbers).

- Type <man fseek> to learn how to use the function