CS23710 ONLY – Practical Sheet 8

The demonstrators are allowed to give you as much help as you need to complete sections 1 through 4 of this sheet.

However, they may only help by explaining the requirements in section 5. You must complete the programs by yourself.

1 Introduction

This practical sheet is the second part of Assignment 4. You should spend a total of about 12 hours reading and working to complete this Practical Sheet.

In order to complete the work, you will need to read a number of man pages, and you may also find it useful to consult the section on the Unix File System from the online notes –

http://www.aber.ac.uk/~dcswww/Dept/Teaching/Courses/CS23710/UNIX/notes/filesystem/filesystem.html

2 Taking and dropping objects

Look at the header file `movable_object.h` in `$FANTASY/src/`. This defines a structure to represent movable objects, and operations to read, display, construct and write movable objects. These are implemented in `movable_object.o`.

Now look at the file `take.c`. This uses the operations in `movable_object.h` to implement the `take` command, described as follows.

> `take` *thing* includes the movable object *thing* in the items being carried, and deletes it from the current location. There is a limit on the number of items that can be held, and also the total weight that can be carried.

You may find it helpful to look at the source `look.c` and at the course notes to see how files and directories are manipulated. Ask the demonstrators for help if there are still things you don't understand.

When you are satisfied that you understand `take`, go to section 5, and implement `drop`. You must do this by yourself, without demonstrator help.

3 What am I carrying?

Look at the file `holding.c`. This implements the operation `holding`. Ask the demonstrators for help if you need it.

> `holding` lists the objects currently held, together with their weights.

When you are satisfied that you understand `holding.c` go to section 5, and implement `score`. Again, you must do this by yourself.

4 Light, darkness and light sources

In the fantasy world, some areas are light, and others are dark.

You can see in dark places if you light a lamp, or other light source. A light source is turned off by the command `quench`. You need to be holding a light source before you can `light` or `quench` it.

Look at the file `quench.c`, and ask for help if you need it.

When you are satisfied that you understand `quench.c`, go to section 5, and implement the command `light`. You must do this by yourself.

5 Assessed work associated with Practical Sheet 8

The demonstrators are only allowed to clarify the requirements in this section; they are not allowed to help you write your programs.

1. Based on what you have seen in `movable_object.h` and in `take.c`, implement the command `drop`, which is described as follows.

   > `drop` *thing* places *thing* at the current location and removes it from the things being held.
   >
   > The things being held are stored at `$FANTASY/tmp/player/holding`. This directory is cleared when the fantasy command `start` is executed.

2. Based on what you've seen in `holding.c`, implement the operation `score`.

   > `score` lists the sum of the values of **treasures** held.

3. Based on what you've seen in `quench.c`, implement the operation `light`.

   > `light` turns on a light source (such as a lamp), provided you are holding the light source.

Listings of `drop`, `score` and `light`, and a script demonstrating their use, will be required as part of the submission for Assignment 4. 15/50 marks