# Cairo University

**Faculty of Computers & Information**

**Advanced Operating System (2014-2015)**

## Assignment 4

**File System Simulator (Protection layer)**

The Aim of this assignment is to build up a protection layer over the simple file system you’ve already created on assignment 2; the protection module will be responsible of the following activities:

1. Creating Users, Delete Users
2. Assign capabilities to users:
   1. Each folder will have two capabilities Create/Delete
   2. Initially, all users have no access at all till the administrator grant access to them.

After running the application a default user will be logged in to the system this user is called “admin” with the password “admin”, the commands in the table below will be added to the list of the commands from assignment 2:

**New System Commands:**

|  |  |
| --- | --- |
| **Command** | **Summary** |
| TellUser | This command will display the name of the current logged in user. |
| CreateUser ahmed pass123 | This command used to create user named “ahmed” with the password “pass123”.  Comments:   1. only the admin can use such command   Pre-requests:   1. No user with the same name already created. |
| DeleteUser ahmed | This command is used to delete user.  Comments:  1- only the admin can delete the user  Pre-requests  1- The user must exist, otherwise print this error message”There is no such user with this name”. |
| Grant ahmed root/folder1 **10**   |  |  |  | | --- | --- | --- | | **Create** | **Delete** | **Comment** | | 0 | 0 | No Create, no Delete | | 0 | 1 | No Create, Delete | | 1 | 0 | Create, No Delete | | 1 | 1 | Create, Delete |  * The create capability allow the user “ahmed” to create any folder or file under the folder “root/folder1 **10**”. * The delete capability allow the user ”ahmed” to delete any folder or file under the folder “root/folder1 **10**”. | This command is used to grant the user “ahmed” Create and Delete Capabilities on the folder “root/folder1 **10**”.  Comments:   1. only the admin can use such command 2. This command is used for folders only   Pre-requests:   1. The path already exists 2. The user already exists |
| Login ahmed pass123   * After this command the current logged in user will be “ahmed” instead of admin. * All assignment 2 commands now must be checked before its execution with the user “ahmed” capabilities. * **Example:**   **Right Command**   * ***CreateFolder root/folder1***   **Wrong Command**   * ***DeleteFolder*** ***root/folder1*** | This command is used to change the current logged in user with the user “ahmed”  Pre-requests:   1. The User already exists 2. The password is correct |
| Show\_All | This command is used to display all the system users along with their capabilities. |

**Submission**

This assignment will be submitted **in groups of two** .