תרגיל בית 1

|  |  |  |  |
| --- | --- | --- | --- |
| MyFile | Directory | VirtualDrive | Terminal |
|  |  | read |  |
|  |  | write |  |
| [] read/write |  | toch |  |
| print |  | copy |  |
| count-l,r,c |  | remove |  |
|  |  | move |  |
|  |  | cat |  |
|  |  | wc |  |
|  |  | ln |  |
|  |  | mkdir |  |
|  |  | chdir |  |
|  |  | rmdir |  |
|  |  | ls |  |
|  |  | lproot |  |
|  |  | pwd |  |

חלק א'- אובייקט קובץ משודרג בעל Reference Counting

# Classes:

**MyFile:**

Sub classes:

* IndexOutOfRange

Fields:

* fstream file

חלק ב'- אובייקט תיקיית קבצים וירטואלית

# Classes:

1. **SmartPointer<T>:**

Fields:

* + T\* pointer

Methods:

* + SmartPointer(T\* realPtr=NULL)
  + SmartPointer(const SmartPointer <T>& rhs) //act's like move
  + SmartPointer(SmartPointer <T>&& rhs)=delete
  + ~ SmartPointer()
  + SmartPointer<T>& operator=(const SmartPointer <T>& rhs) //act's like move
  + SmartPointer<T>& operator=(const SmartPointer <T>&& rhs)=delete
  + T\* operator ->() const
  + T& operator\*() const

1. **Directory:**

Fields:

* string- name
* vector<string>- location
* set<SmartPointer<Directory>>- inDirectory
* set<SmartPointer<RCfstream>>- inFiles

Public sMethods:

* default C'tor
* C'tor(string name)
* copy C'tor
* D'tor
* copy assignment = delete
* move assignment = delete
* mkdir(string name)

creates new Directory

exceptions:

if the directory already exists.

* chdir(string newDir)

changes the current working Directory.

exceptions:

if the directory doesn't exist.

* rmdir

Deletes all the contents of the folder, its subfolders, and the folder itself.

* ls

Prints the contents of the folder

exs

1. **VirtualDrive:**

Fields:

* SmartPointer<Directory> location
* SmartPointer<Directory> homeDir

Methods:

* lproot

This function will print all the names of the files and folders in the virtual drive, in a hierarchy. the correct one, when the value of the counter (reference counter) of each file must appear next to the name of the file (printing format as you wish).

* pwd

Function to print current working location on the virtual drive.

חלק ג'- מיני-טרמינל לפקודות קבצים ותיקיות

# Classes:

1. **Terminal:**

Fields:

* VirtualDrive vd
* stringstream ss
* map<string, int> commends

Public Methods:

* PrintMenu

prints the menu

* TakeChoice()

Receives input from the user and acts accordingly.

Private Methods:

* cheackInput()

Checking the correctness of the input. In case of incorrect input the user gets another chance

* checkNArgs()

Checks the legality of the arguments.

* getChoiceFromUser()
* fillCommends()