HACETTEPE UNIVERSITY COMPUTER SCIENCE AND ENGINEERING DEPARTMENT

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SUBJECT:GENERALIZED LIST

EXPERIMENT: 4/FINAL REPORT

PROGRAMMING LANGUAGE:C++/C#

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1.SOFTWARE DESIGN NOTES

1.1 PROBLEM

In this experiment we tried to implement file and directory system.There will be three or one argument for system.If there is one argument,the command will give from console,if there are three arguments,the command will give via input file.After this initializing part the program will implement the commands.In this experiment using generalized list is expected from us.

1.2 SOLUTION

1.2.1 In my opinion the most important part is initializing and finding any file or directory in the system.Because if I couldn't do initializing part ,I couldn't do anything,and if I didn't find the file or directory in the system,I counldn't implement anything too.So these parts are the most importants ones for me.To implement initialize part I used two different functions.One of them for putting each element of char array to the string array because the name of file or directory can ben given as a word.The second function implements the adding to the system expression.These functions are recursive.To implement the finding file ,I used two different function.These functions are recursive one of them controlling the sibling items.And if there is a directory it will call the first function again and the function will call the control sibling ones function until finding the file or directory.The most important effect for my design is that every list that I have implemented have to have two different pointers.One of them is next and the other one is link pointer.So I created generalized linked list.The other important thing is using polymorphism and inheritance and depends on all these things I have to use abstract classes.

1.2.2

- **Main :** In this class the program will take the arguments and if there is just one argument ,the program will initialize the system and then wait for the commands via console.If there is three arguments ,at first the program will initialize the system and then it will read every command into the input.txt line by line.
- **Input :** In this class there are two functions one of them read from input line by line and the other one is for deviding each command line.
- **AddDocument :** In this class,the program initialize the system.And the head ,curr ,temp and currentDirectory pointers is keeping here.After first item initializing every each pointer will be freshed.
- **Document :** This class is an abstract class.And this class will be the ancestor of directory and file classes.There will be an inheritance.I define an abstract function for using in the sub classes.There will be two pointer and a string variable for each item taht records to the list.There are getters and setter for these variables.
- **Directory :** In this class some commands for directory is implemented.

- **File :** In this class some commands for file is implemented.
- **Commands :** After initiazlizng and reading the input file or taking the commmands from console,the program will come to this class and depends on the name of command the program will call the appropriate functions for implementing each commands.

  1.2.3 I use two pointer for each directory node.One of them for reaching the sub nodes.The other one is for reaching the sibling nodes.And I made change about keeping much variable.For example I didn't keep any variable to understand the type of node.Instead of this method I used inheritance.As I said before I used abstract class and abstract function.This abstract function is for deciding the type of node.If it is file it will call the function that stays into the file class.If it is directory it will call the function that stays into the directory class.

1.3 ERRORS

1. **Error : Destination url didn't find!**
    If the destination url didn't find the program will give this error message.
2. **Error : This is not a directory.This is a file.So you cannot change the current directory by using this url.**
    This is for change directory command.If the url that we find is a file not a directory,the program will give this error message.
3. **Error : The destination url is a file not a directory.**
    If the destination url is a file not a directory the program will give this error message.
4. **Error : The source url didn't find.**
    If the source url don't find ,the program will give this error message.
5. **Error : You cannot moved root directory.**
    This error is for move command.If you try to move the current directory ,the program will give this error message.
6. **Error: Directory that we wanted to move ,didn't found in the source directory.**
    This is for move command.If the program didn't find the directory in the source directory ,the program will give this error message.
7. **Error : There is already a directory that has the same name with the copied directory.**
    This is for copy directory command.If there is another directory that has the same name.The program will give this error message.
8. **Error : There is already a directory that has the same name.**
    If there is a directory that has the same name the program will give this error message.
9. **Error : You cannot delete the root directory.**
    This is for remove directory command.If you try to remove the current directory the program will give this error message.

10. **Error : Directory didn't find.**

    If the program can't find the directory, the program will give this error message.

11. **Error : The destination url is a file not a directory.**

    If the destination url is a file not a directory the program will give this error message.

12. **Error : The source url is a directory not a file.**

    If the source url is a directory not a file ,the program will give this error message.

13. **Error : There is another directory that has the same name in the destination url.**

    If there is already a directory that has the same name with the url,the program will give this error message.

14. **Error : There is already a file that has the same name with the copied file.**

    This is for copy file command.If there is another file that has the same name.The program will give this error message.

15. **Error : There is already a file that has the same name.**

    If there is a file that has the same name the program will give this error message.

16. **Error : File didn't find.**

    If the program can't find the file, the program will give this error message.

17. **Error : The destination url is a directory not a file.**

    If the destination url is a directory not a file the program will give this error message.

18. **Error: The file that we wanted to move ,didn't found in the source directory.**

    This is for move command.If the program didn't find the file in the source directory ,the program will give this error message.