

GIT Department of Computer Engineering

CSE 222/505 - Spring 2020

Homework #5 Part 1 Report

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PROBLEM SOLUTION APPROACH

STEP 1 – To implement a general tree I created a FileNode class which holds filename , file type and its children as LinkedList.

STEP 2 – After implemented FileNode, implemented addDir, addFile, remove, search, printFileSystem functions

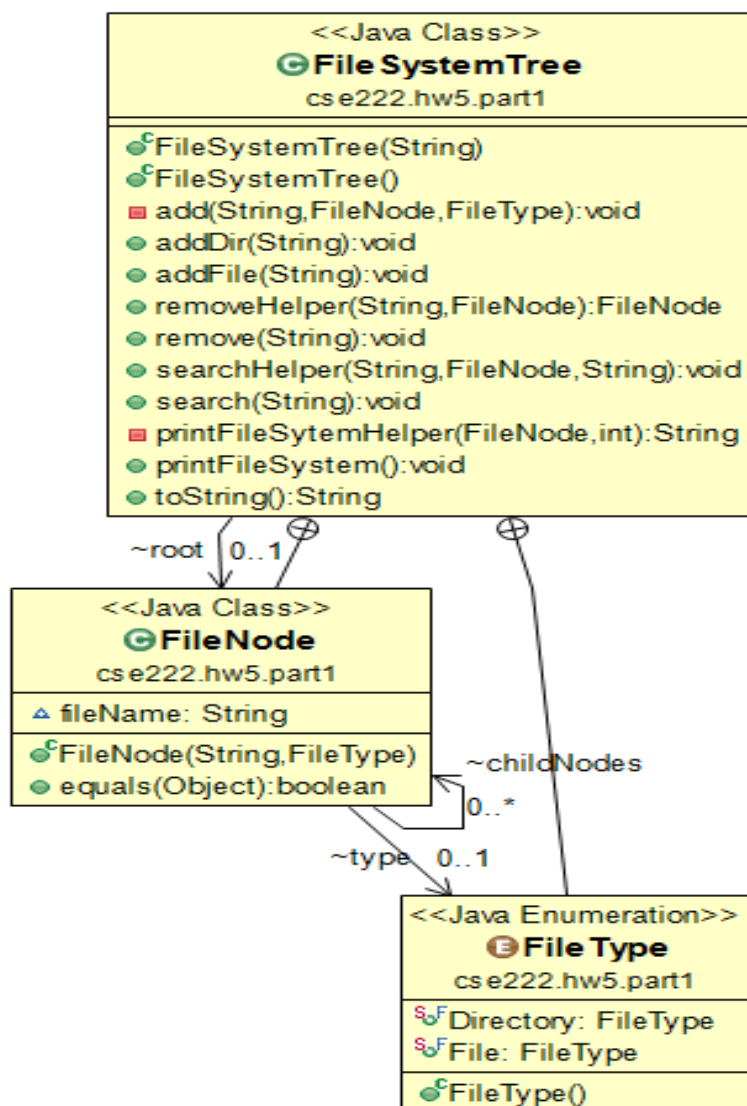
STEP 3 – addDir(), addFile() create a document

STEP 4 – remove() removes given item

STEP 5 – search() search given string in files and print all file include given string

STEP 6 – printFileSystem() prints whole file system

CLASS DIAGRAM



TEST CASES

TEST ID	Scenario	Test Data	Expected Results	Actual Results	Pass/Fail
TEST01	FileSystemTree(null)	null	Exception Thrown	As Expected	Pass
TEST02	remove() while file system empty		Error message printed	As Expected	Pass
TEST03	FileSystemTree("root")	"root"	Created Successfully	As Expected	Pass
TEST04	remove("root")	"root"	Error message printed	As Expected	Pass
TEST05	remove(null)	null	Exception Thrown	As Expected	Pass
TEST06	addDir(null)	null	Exception Thrown	As Expected	Pass
TEST07	addFile(null)	null	Exception Thrown	As Expected	Pass
TEST08	search(null)	null	Exception Thrown	As Expected	Pass
TEST09	addDir() with dir already exist	root/first_directory	Error message printed	As Expected	Pass
TEST10	addFile() with file already exist	root/first_directory/new_file1.txt	Error message printed	As Expected	Pass
TEST11	addDir() ,try to add a directory under invalid filepath	root/third_directory/new_dic4/hello_/deneme	Error message printed	As Expected	Pass
TEST12	addFile() ,try to add a file under a file	root/third_directory/new_dic4/hello_file.txt/deneme.txt	Error message printed	As Expected	Pass
TEST13	addDir() ,try to add a directory under a file	root/third_directory/new_dic4/hello_file.txt/deneme_dir	Error message printed	As Expected	Pass
TEST14	search("new")	new	Successfully Printed	As Expected	Pass
TEST15	remove(root/second_directory/new_dic/new_file2.txt)	root/second_directory/new_dic/new_file2.txt	Successfully Removed	As Expected	Pass
TEST16	remove(root/third_directory/new_dic4)	root/third_directory/new_dic4	Successfully Removed	As Expected	Pass
TEST17	remove(root/third_directory)	root/third_directory	Successfully not Removed	As Expected	Pass

RUNNING AND RESULTS

TEST01 - Testing FileSystemTree Constructor with null parameter

java.lang.NullPointerException

TEST02 - Testing remove() while file system empty

You can not delete from empty file system

TEST03 - Testing FileSystemTree Constructor with root parameter

\root

TEST04 - Testing remove() with root directory

You can not delete root Directory

TEST05 - Testing remove() with null parameter

java.lang.NullPointerException

TEST06 - Testing addDir() with null parameter

java.lang.NullPointerException

TEST07 - Testing addFile() with null parameter

java.lang.NullPointerException

TEST08 - Testing search() with null parameter

java.lang.NullPointerException

After add some directories and files

```
\root
  \first_directory
    \new_file1.txt
  \second_directory
    \new_dic
      \new_file2.txt
    \new_dic2
      \new_dic3
  \third_directory
    \new_file1.txt
    \new_dic4
      \hello_dic
      \hello_file.txt
    \new_dic5
```

```
\root
  \first_directory
    \new_file1.txt
  \second_directory
    \new_dic
      \new_file2.txt
    \new_dic2
      \new_dic3
  \third_directory
    \new_file1.txt
    \new_dic4
      \hello_dic
      \hello_file.txt
    \new_dic5
```

|

TEST09 - Testing addDir() with already exist
(root/first_directory)

The file named as first_directory already exist in given class path

```
\root
  \first_directory
    \new_file1.txt
  \second_directory
    \new_dic
      \new_file2.txt
    \new_dic2
      \new_dic3
  \third_directory
    \new_file1.txt
    \new_dic4
      \hello_dic
      \hello_file.txt
    \new_dic5
```

TEST10 - Testing addFile() with already exist
(root/first_directory/new_file1.txt)

The file named as new_file1.txt already exist in given class path

```
\root
  \first_directory
    \new_file1.txt
  \second_directory
    \new_dic
      \new_file2.txt
    \new_dic2
      \new_dic3
  \third_directory
    \new_file1.txt
    \new_dic4
      \hello_dic
      \hello_file.txt
    \new_dic5
```

TEST11 - Testing addDir() ,try to add a directory under invalid filepath
(root/third_directory/new_dic4/hello_/deneme)

The File named hello_ in the given class path is not found at the File System

```
\root
  \first_directory
    \new_file1.txt
  \second_directory
    \new_dic
      \new_file2.txt
    \new_dic2
      \new_dic3
  \third_directory
    \new_file1.txt
    \new_dic4
      \hello_dic
      \hello_file.txt
    \new_dic5
```

TEST12 - Testing addFile() ,try to add a file under a file
(root/third_directory/new_dic4/hello_file.txt/deneme.txt)

You can not add a Directory or File inside a file named as hello_file.txt

```
\root
  \first_directory
    \new_file1.txt
  \second_directory
    \new_dic
      \new_file2.txt
    \new_dic2
      \new_dic3
  \third_directory
    \new_file1.txt
    \new_dic4
      \hello_dic
      \hello_file.txt
    \new_dic5
```

```
\root
  \first_directory
    \new_file1.txt
  \second_directory
    \new_dic1
      \new_file2.txt
    \new_dic2
      \new_dic3
  \third_directory
    \new_file1.txt
    \new_dic4
      \hello_dic
      \hello_file.txt
    \new_dic5
```

TEST13 - Testing addDir() ,try to add a directory under a file
(root/third_directory/new_dic4/hello_file.txt/deneme_dir)

You can not add a Directory or File inside a file named as hello_file.txt

```
\root
  \first_directory
    \new_file1.txt
  \second_directory
    \new_dic
      \new_file2.txt
    \new_dic2
      \new_dic3
  \third_directory
    \new_file1.txt
    \new_dic4
      \hello_dic
      \hello_file.txt
    \new_dic5
```



```
\root
  \first_directory
    \new_file1.txt
  \second_directory
    \new_dic
      \new_file2.txt
    \new_dic2
      \new_dic3
  \third_directory
    \new_file1.txt
    \new_dic4
      \hello_dic
      \hello_file.txt
    \new_dic5
```

TEST14 - Testing search() with (new) parameter

```
// File - root\first_directory\new_file1.txt
// Directory - root\second_directory\new_dic
// File - root\second_directory\new_dic\new_file2.txt
// Directory - root\second_directory\new_dic2
// Directory - root\second_directory\new_dic2\new_dic3
// File - root\third_directory\new_file1.txt
// Directory - root\third_directory\new_dic4
// Directory - root\third_directory\new_dic5
```

```
..
\root
  \first_directory
    \new_file1.txt
  \second_directory
    \new_dic
      \new_file2.txt
    \new_dic2
      \new_dic3
  \third_directory
    \new_file1.txt
    \new_dic4
      \hello_dic
      \hello_file.txt
    \new_dic5
```

TEST15 - Testing remove() remove a file
(root/second_directory/new_dic/new_file2.txt)

```
\root
  \first_directory
    \new_file1.txt
  \second_directory
    \new_dic
    \new_dic2
      \new_dic3
  \third_directory
    \new_file1.txt
    \new_dic4
      \hello_dic
      \hello_file.txt
    \new_dic5
```

TEST16 - Testing remove() remove a directory
(root/third_directory/new_dic4)

```
|  
\new_dic4  
  \hello_dic  
  \hello_file.txt
```

If you delete directory, files under the directory will be deleted too
Do you want to delete the directory ? (Y\N)*Y*

```
\root  
  \first_directory  
    \new_file1.txt  
  \second_directory  
    \new_dic  
    \new_dic2  
    \new_dic3  
  \third_directory  
    \new_file1.txt  
    \new_dic5
```

```
\root  
  \first_directory  
    \new_file1.txt  
  \second_directory  
    \new_dic  
    \new_dic2  
    \new_dic3  
  \third_directory  
    \new_file1.txt  
    \new_dic4  
      \hello_dic  
      \hello_file.txt  
    \new_dic5
```

```
\root
  \first_directory
    \new_file1.txt
  \second_directory
    \new_dic
    \new_dic2
    \new_dic3
  \third_directory
    \new_file1.txt
    \new_dic5
```

TEST17 - Testing remove() remove a directory
(root/third_directory)

```
\third_directory
  \new_file1.txt
  \new_dic5
```

If you delete directory, files under the directory will be deleted too
Do you want to delete the directory ? (Y\N)*N*

```
\root
  \first_directory
    \new_file1.txt
  \second_directory
    \new_dic
    \new_dic2
    \new_dic3
```