

GIT Department of Computer Engineering

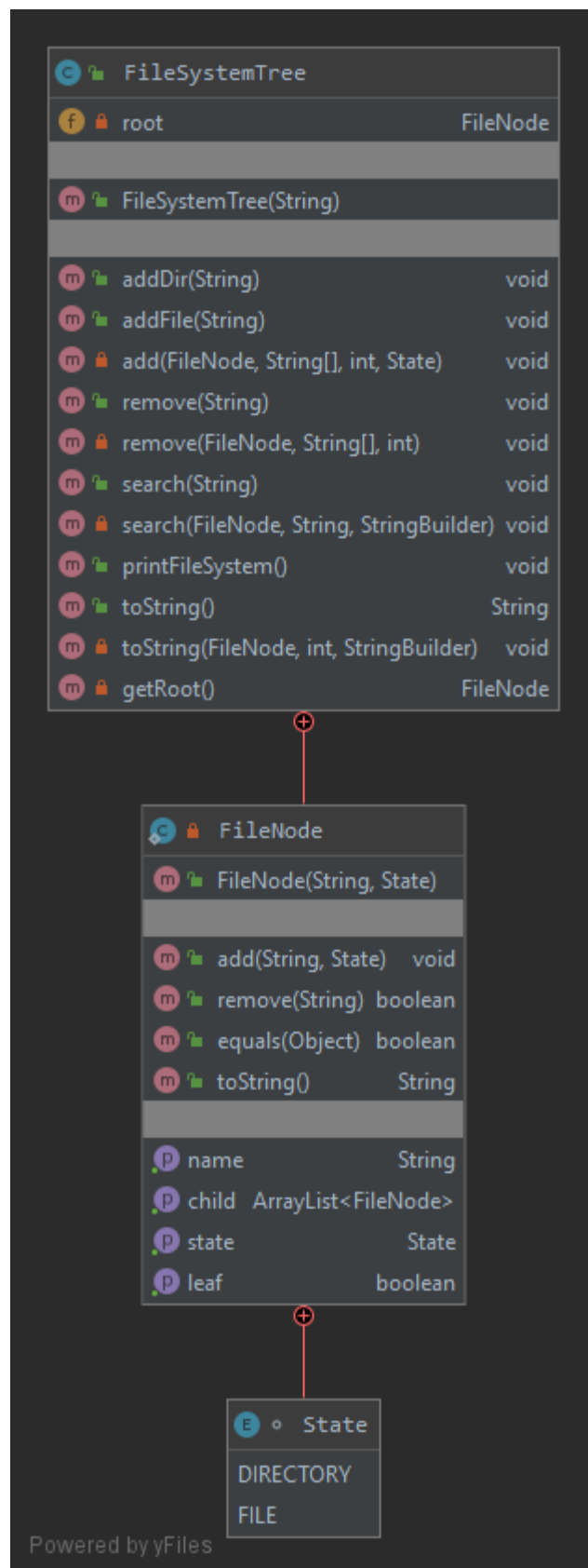
CSE 222/505 – Spring 2020

Homework #05 Part 1 Report

Abdullah ÇELİK

171044002

Class Diagram



Problem Solution Approach

Firstly, FileSystemTree class holds FileNode class as inner class, and this FileNode class can also represent a file or a directory. For this, FileNode class has an enum called State and each FileNode class has a State type variable. Thus, the FileNode class can represent a directory or file. Secondly, using recursion in the implementation of the desired FileSystemTree methods will make my job easier. But since the parameters of these methods are insufficient, I will use these methods as a starter method and to call recursion methods I wrote. All that remains is to implement the methods with the right algorithms.

Test Cases

Test ID	Scenerio	Test Data	Expected Results	Actual Results	Pass/Fail
TEST01	Testing constructor of FileSystemTree when root name does not contain '/' character	FileSystemTree constructor	Successfully created	As expected	Pass
TEST02	Testing constructor of FileSystemTree when root name contains '/' character	FileSystemTree constructor	Successfully created as root name is INVALID_NAME	As expected	Pass
TEST03	void addDir(String path) method called with valid path	path : "root/dir1" path : "root/dir2" path : "root/dir1/dir3"	Successfully added directories	As expected	Pass
TEST04	void addDir(String path) method called with invalid path	path : "root1/dir1"	Did not add directory	As expected	Pass
TEST05	void addDir(String path) method called for already existing directory	path : "root/dir1"	Did not add directory	As expected	Pass
TEST06	void addDir(String path) method called when string path is null	path : null	Did not add directory	As expected	Pass
TEST07	void addFile(String path) method called with valid path	path : "root/file1.txt" path : "root/dir1/file2.txt" path : "root/dir1/dir3/file3.txt"	Successfully added files	As expected	Pass
TEST08	void addFile(String path) method called with invalid path	path : "root/dir4/file4.txt"	Did not add file	As expected	Pass
TEST09	void addFile(String path) method called for already existing file	path : "root/dir1/file2.txt"	Did not add file	As expected	Pass

TEST10	void addFile(String path) method called when string path is null	path : null	Did not add file	As expected	Pass
TEST11	void search(String searched) method called with valid characters	searched : "2"	Successfully found and printed its path	As expected	Pass
TEST12	void search(String searched) method called with invalid characters	searched : "5"	Did not find and print its path	As expected	Pass
TEST13	void search(String searched) method called for string searched is null	searched : null	Did not find and print its path	As expected	Pass
TEST14	void remove(String path) method called with invalid path directory	path : "root/dir1/dir5"	Did not find. Printed error message	As expected	Pass
TEST15	void remove(String path) method called with valid path directory which is leaf directory	path : "root/dir2"	Successfully removed	As expected	Pass
TEST16	void remove(String path) method called with valid path directory which is non- leaf directory	path: "root/dir1/dir3"	Successfully found. Listed its contents. Asked user whether remove or not	As expected	Pass
TEST17	void remove(String path) method called with invalid path file	path: "root/file3.txt"	Did not find. Printed error message	As expected	Pass
TEST18	void remove(String path) method called with valid path file	path: "root/file1.txt"	Successfully removed file	As expected	Pass
TEST19	void remove(String path) method called when string path is null	path : null	Did not remove	As expected	Pass
TEST20	void printFileSystem() method called	FileSystemTree	Successfully printed system on the screen	As expected	Pass

Running and Results

```

TEST01 - Constructor of FileSystemTree
When root name does not contain / character
name of root = "root"
The file system was created successfully!
The File System
root

```

TEST02 - Constructor of FileSystemTree
When root name contains / character
name of root = "root/dir1"
The file system was created successfully!
The File System
INVALID_NAME

TEST03 - void addDir(String path)
Adding a directory to directory with valid path
Paths : "root/dir1","root/dir2","root/dir1/dir3"
Before adding the directory to the system
root

After adding the directory to the system
root
 dir1
 dir3
 dir2

TEST04 - void addDir(String path)
Adding a directory to directory with invalid path
Path : "root1/dir1"
Before adding the directory to the system
root
 dir1
 dir3
 dir2

After adding the directory to the system
root
 dir1
 dir3
 dir2

TEST05 - void addDir(String path)
Adding the existing directory again
Path : "root/dir1"
Before adding the directory to the system
root
 dir1
 dir3
 dir2

After adding the directory to the system
root
 dir1
 dir3
 dir2

TEST06 - void addDir(String path)

Adding null using addDir method

Path : null

Before adding the directory to the system

root

dir1

dir3

dir2

After adding the directory to the system

root

dir1

dir3

dir2

TEST07 - void addFile(String path)

Adding a file to directory with valid path

Paths : "root/file1.txt","root/dir1/file2.txt",

"root/dir1/dir3/file3.txt"

Before adding the file to the system

root

dir1

dir3

dir2

After adding the file to the system

root

dir1

dir3

file3.txt

file2.txt

dir2

file1.txt

TEST08 - void addFile(String path)
Adding a file to directory with invalid path
Path : "root/dir4/file4.txt"
Before adding the file to the system

```
root
  dir1
    dir3
      file3.txt
    file2.txt
  dir2
  file1.txt
```

After adding the file to the system

```
root
  dir1
    dir3
      file3.txt
    file2.txt
  dir2
  file1.txt
```

TEST09 - void addFile(String path)
Adding the existing file again
Path : "root/dir1/file2.txt"
Before adding the file to the system

```
root
  dir1
    dir3
      file3.txt
    file2.txt
  dir2
  file1.txt
```

After adding the file to the system

```
root
  dir1
    dir3
      file3.txt
    file2.txt
  dir2
  file1.txt
```

TEST10 - void addFile(String path)
Adding null using addFile method
Path : null
Before adding the file to the system
root
 dir1
 dir3
 file3.txt
 file2.txt
 dir2
 file1.txt

After adding the file to the system
root
 dir1
 dir3
 file3.txt
 file2.txt
 dir2
 file1.txt

TEST11 - void search(String searched)
Testing search method
Searching a valid characters
Searched characters : "2"
The file system
root
 dir1
 dir3
 file3.txt
 file2.txt
 dir2
 file1.txt

file - root/dir1/file2.txt
dir - root/dir2

TEST12 - void search(String searched)
Searching a invalid characters
Searched characters : "5"
The file system
root
 dir1
 dir3
 file3.txt
 file2.txt
 dir2
 file1.txt

TEST13 - void search(String searched)

Searching null using search method

Searched characters : null

The file system

root

dir1

dir3

file3.txt

file2.txt

dir2

file1.txt

TEST14 - void remove(String path)

Removing a invalid directory

Path : "root/dir1/dir5"

Before removing method the system is

root

dir1

dir3

file3.txt

file2.txt

dir2

file1.txt

Path cannot be founded!

After removing method the system is

root

dir1

dir3

file3.txt

file2.txt

dir2

file1.txt

TEST15 - void remove(String path)

Removing a leaf directory

Path : "root/dir2"

Before removing method the system is

root

```
  dir1
    dir3
      file3.txt
      file2.txt
    dir2
    file1.txt
```

After removing method the system is

root

```
  dir1
    dir3
      file3.txt
      file2.txt
    file1.txt
```

TEST16 - void remove(String path)

Removing a non-leaf directory

Path : "root/dir1/dir3"

Before removing method the system is

root

```
  dir1
    dir3
      file3.txt
      file2.txt
    file1.txt
```

The removed directory is :

dir3

```
  file3.txt
```

Are you sure(y/n) :

y

After removing method the system is

root

```
  dir1
    file2.txt
    file1.txt
```

TEST17 - void remove(String path)
Removing a invalid file
Path : "root/file3.txt"
Before removing method the system is
root
 dir1
 file2.txt
 file1.txt

Path cannot be founded!
After removing method the system is
root
 dir1
 file2.txt
 file1.txt

TEST18 - void remove(String path)
Removing a valid file
Path : "root/file1.txt"
Before removing method the system is
root
 dir1
 file2.txt
 file1.txt

After removing method the system is
root
 dir1
 file2.txt

TEST19 - void remove(String path)
Removing null using remove method
Path : null
Before removing method the system is
root
 dir1
 file2.txt

After removing method the system is
root
 dir1
 file2.txt

TEST20 - void printFileSystem()
root
 dir1
 file2.txt