

Clayton Turner
CSIS 603 - Design Patterns

Composite Pattern Assignment

PrintDirectoryStructure.java

```
package com.turner;
```

```
import java.io.*;
```

```
/**
 * Utility class that prints the directory structure to standard output
 * showing the composition of nested files and subdirectories.
 */
public class PrintDirectoryStructure
{
    private static int nLevel = 0;
    /**
     * Prints the structure for the file whose path name is given in arg[0].
     */
    public static void main(String[] args)
    {
        if (args.length != 1)
        {
            printUsage();
            System.exit(-1);
        }

        String pathName = args[0];
        File file = new File(pathName);

        if (file.exists())
            printTree(file);
        else
            System.out.println("*** File " + pathName + " does not exist. ***");
    }

    public static void printTree(File file)
    {
        if(!file.isDirectory()){
            //nLevel++;
            printFile(file, nLevel);
        }
        else{ // File is a directory
            //nLevel++;
            printDirectory(file, nLevel);
            File[] fileList = file.listFiles();

```

```

        nLevel++;
        for(File f : fileList) {
            //nLevel--;
            printTree(f);
        }
        nLevel--;
    }
}

```

```

private static void printDirectory(File dir, int nestingLevel)
{
    System.out.println(getIndentString(nestingLevel)+" "+dir.toString());
}

```

```

private static void printFile(File file, int nestingLevel)
{
    System.out.println(getIndentString(nestingLevel)+"- "+file.toString());
}

```

```

private static String getIndentString(int nestingLevel)
{
    StringBuilder s = new StringBuilder();

    for (int i = 0; i < nestingLevel; i++)
        s.append(" ");

    return s.toString();
}

```

```

private static void printUsage()
{
    System.out.println("Usage: (<path>)");
    System.out.println("    where <path> is the path of a file or directory");
    System.out.println();
}
}

```

```

C:\Users\Clayton\IdeaProjects\DesignPatterns\CompositePattern\out\production\Com
positePattern>java PrintDirectoryStructure "C:\Users\Clayton\Dropbox\Design Patt
erns"

+ C:\Users\Clayton\Dropbox\Design Patterns
  + C:\Users\Clayton\Dropbox\Design Patterns\Fractions
    + C:\Users\Clayton\Dropbox\Design Patterns\Fractions\.idea
      - C:\Users\Clayton\Dropbox\Design Patterns\Fractions\.idea\.name
      - C:\Users\Clayton\Dropbox\Design Patterns\Fractions\.idea\compiler.xml
    + C:\Users\Clayton\Dropbox\Design Patterns\Fractions\.idea\copyright
      - C:\Users\Clayton\Dropbox\Design Patterns\Fractions\.idea\copyright
\profiles_settings.xml
    - C:\Users\Clayton\Dropbox\Design Patterns\Fractions\.idea\misc.xml
    - C:\Users\Clayton\Dropbox\Design Patterns\Fractions\.idea\modules.xml
    - C:\Users\Clayton\Dropbox\Design Patterns\Fractions\.idea\uiDesigner.x
ml
    - C:\Users\Clayton\Dropbox\Design Patterns\Fractions\.idea\vcs.xml
    - C:\Users\Clayton\Dropbox\Design Patterns\Fractions\.idea\workspace.xml
  - C:\Users\Clayton\Dropbox\Design Patterns\Fractions\csis603_1.odt
  - C:\Users\Clayton\Dropbox\Design Patterns\Fractions\Fractions.iml
  + C:\Users\Clayton\Dropbox\Design Patterns\Fractions\src
    - C:\Users\Clayton\Dropbox\Design Patterns\Fractions\src\Fraction.class
    - C:\Users\Clayton\Dropbox\Design Patterns\Fractions\src\Fraction.java
    - C:\Users\Clayton\Dropbox\Design Patterns\Fractions\src\TestFraction.c
lass
    - C:\Users\Clayton\Dropbox\Design Patterns\Fractions\src\TestFraction.j
ava
  - C:\Users\Clayton\Dropbox\Design Patterns\Iterator.odt
C:\Users\Clayton\IdeaProjects\DesignPatterns\CompositePattern\out\production\Com
positePattern>

```