

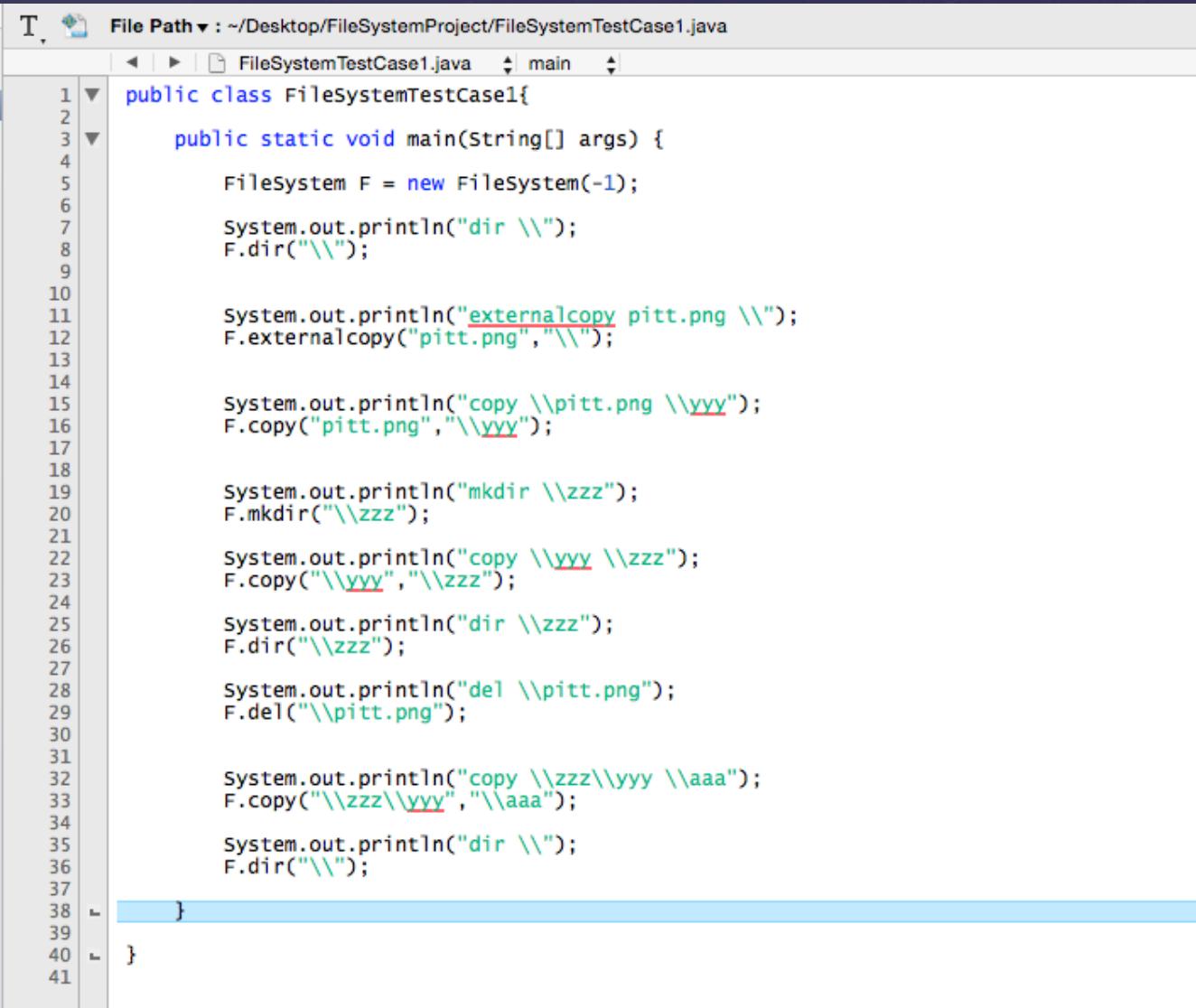
File System Project

{ By Christian Boni

Test Case 1:

```
dir \  
specialcopy C:\pitt.png \  
copy \pitt.png \yyy  
mkdir \zzz  
copy \yyy \zzz  
dir \zzz  
del \pitt.png  
copy \zzz\yyy \aaa  
dir \  
"
```

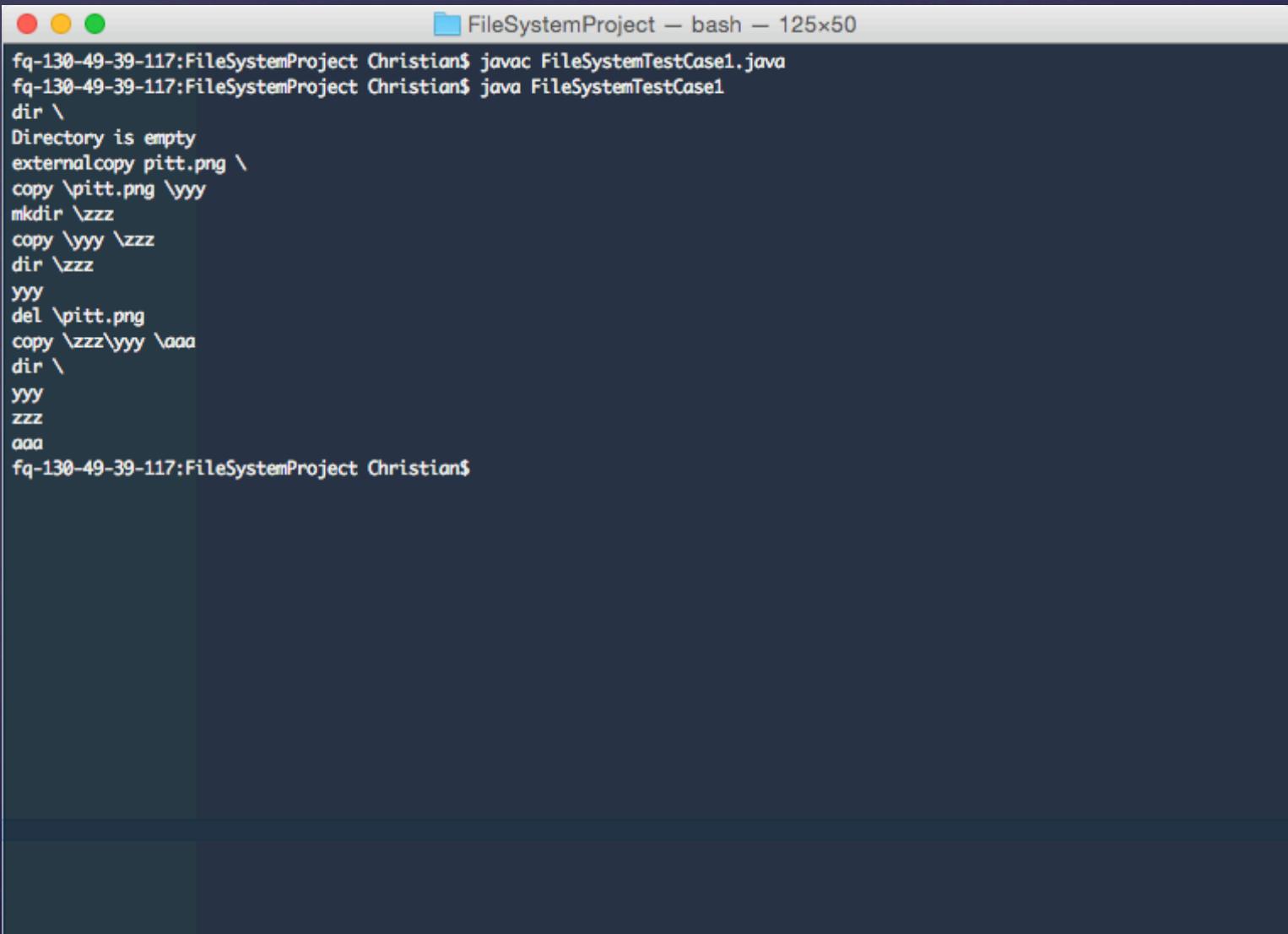
Code for the Driver:



The screenshot shows a Java code editor window with the file path set to `~/Desktop/FileSystemProject/FileSystemTestCase1.java`. The code is a driver program for a `FileSystem` class, containing the following logic:

```
1 public class FileSystemTestCase1{
2     public static void main(String[] args) {
3         FileSystem F = new FileSystem(-1);
4         System.out.println("dir \\");
5         F.dir("\\\\");
6
7         System.out.println("externalcopy pitt.png \\");
8         F.externalcopy("pitt.png", "\\");
9
10        System.out.println("copy \\pitt.png \\yyy");
11        F.copy("pitt.png", "\\yyy");
12
13        System.out.println("mkdir \\zzz");
14        F.mkdir("\\zzz");
15
16        System.out.println("copy \\yyy \\zzz");
17        F.copy("\\yyy", "\\zzz");
18
19        System.out.println("dir \\zzz");
20        F.dir("\\zzz");
21
22        System.out.println("del \\pitt.png");
23        F.del("\\pitt.png");
24
25        System.out.println("copy \\zzz\\yyy \\aaa");
26        F.copy("\\zzz\\yyy", "\\aaa");
27
28        System.out.println("dir \\");
29        F.dir("\\\\");
30
31    }
32
33    }
34
35    }
36
37    }
38
39    }
40
41    }
```

Terminal Results:



The screenshot shows a terminal window titled "FileSystemProject — bash — 125x50". The terminal content is as follows:

```
fq-130-49-39-117:FileSystemProject Christian$ javac FileSystemTestCase1.java
fq-130-49-39-117:FileSystemProject Christian$ java FileSystemTestCase1
dir \
Directory is empty
externalcopy pitt.png \
copy \pitt.png \yyy
mkdir \zzz
copy \yyy \zzz
dir \zzz
yyy
del \pitt.png
copy \zzz\yyy \aaa
dir \
yyy
zzz
aaa
fq-130-49-39-117:FileSystemProject Christian$
```

Resulting Storage System

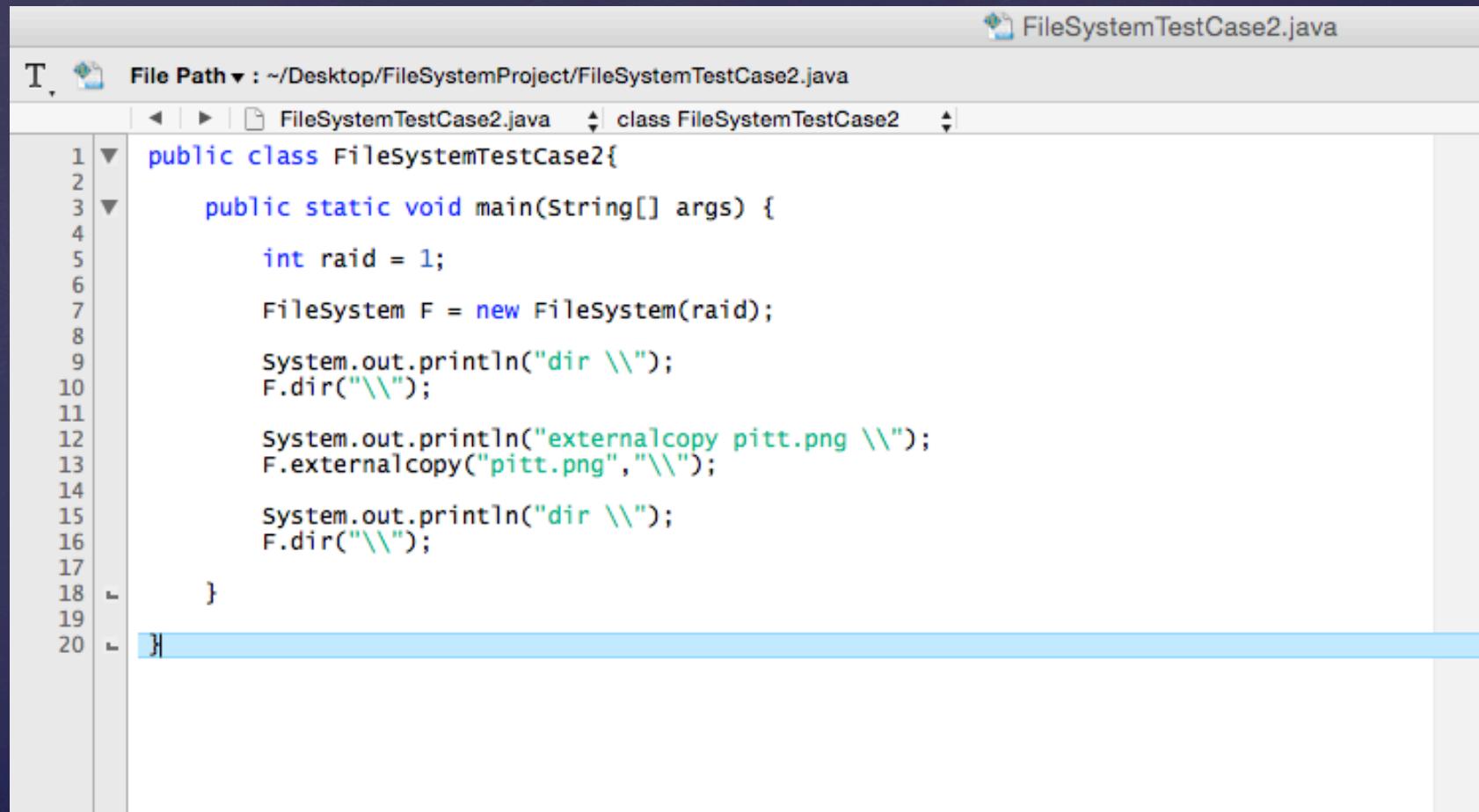
- & Contents of each Sector can be viewed in FileSystemProject/TestCase1_Results/Disk
- & As you can see there are 9 sectors corresponding to the root, its directories and its files:
- & Root – 1 Sector
- & Pitt.png – 3 Sectors
- & Yyy – 3 Sectors
- & Zzz – 1 Sector
- & Aaa – 1 Sector

Name	Date Modified	Size
Disk	Today, 7:36 PM	--
Sector0.dat	Today, 7:36 PM	8 KB
Sector1.dat	Today, 7:36 PM	8 KB
Sector2.dat	Today, 7:36 PM	8 KB
Sector3.dat	Today, 7:36 PM	8 KB
Sector4.dat	Today, 7:36 PM	8 KB
Sector5.dat	Today, 7:36 PM	8 KB
Sector6.dat	Today, 7:36 PM	8 KB
Sector7.dat	Today, 7:36 PM	8 KB
Sector8.dat	Today, 7:36 PM	8 KB
Disk_Mirror	Apr 2, 2015, 1:11 AM	--
Disk1	Apr 2, 2015, 9:39 PM	--
Disk2	Apr 2, 2015, 9:39 PM	--
Disk3	Apr 2, 2015, 9:39 PM	--
FileSystem.class	Today, 7:36 PM	8 KB
FileSystem.java	Today, 7:35 PM	19 KB
FileSystemDriver.class	Apr 8, 2015, 11:03 PM	987 bytes
FileSystemDriver.java	Apr 8, 2015, 11:02 PM	849 bytes
FileSystemTestCase1.class	Today, 7:36 PM	1 KB
FileSystemTestCase1.java	Today, 6:33 PM	740 bytes
Node.class	Today, 7:36 PM	655 bytes
pitt.png	May 2, 2014, 8:01 PM	3 KB
Root.class	Apr 1, 2015, 9:54 PM	431 bytes
Sector.class	Today, 7:36 PM	703 bytes
StorageSystem.class	Today, 7:36 PM	3 KB
test.txt	Apr 2, 2015, 12:46 AM	255 bytes
TestCase1	Today, 7:38 PM	--
Screen Shot 2015-04-13 at 6.34.30 PM	Today, 6:34 PM	115 KB
Screen Shot 2015-04-13 at 7.37.35 PM	Today, 7:37 PM	51 KB

Test Case 2 – Raid 1:

```
dir \  
specialcopy C:\pitt.png \  
dir \  
dir
```

Code for the Driver:



The screenshot shows a Java code editor window with the following details:

- Title Bar:** FileSystemTestCase2.java
- File Path:** ~/Desktop/FileSystemProject/FileSystemTestCase2.java
- Code Content:**

```
1 public class FileSystemTestCase2{
2     public static void main(String[] args) {
3         int raid = 1;
4         FileSystem F = new FileSystem(raid);
5         System.out.println("dir \\\");
6         F.dir("\\\"");
7         System.out.println("externalcopy pitt.png \\\"");
8         F.externalcopy("pitt.png", "\\\"");
9         System.out.println("dir \\\"");
10        F.dir("\\\"");
11    }
12}
```

Terminal Results:

The screenshot shows a terminal window with the title bar 'FileSystemProject — bash — 125x50'. The terminal content is as follows:

```
fq-130-49-39-117:FileSystemProject Christian$ javac FileSystemTestCase2.java
fq-130-49-39-117:FileSystemProject Christian$ java FileSystemTestCase2
dir \
Directory is empty
externalcopy pitt.png \
dir \
pitt.png
fq-130-49-39-117:FileSystemProject Christian$
```

Resulting Storage System

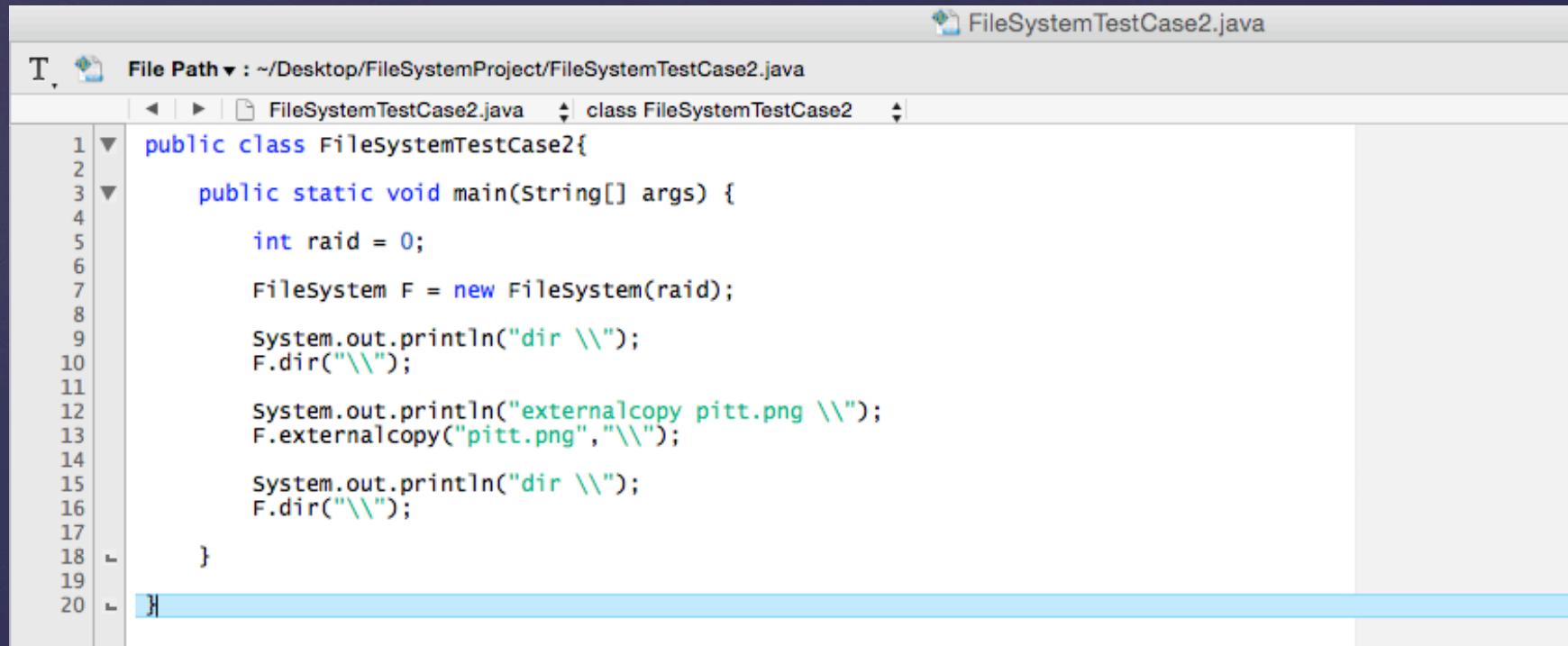
- Contents of each Sector can be viewed in:
- TestCase2-Raid1_Results/Disk
- TestCase2-Raid1_Results/
Disk_Mirror
- As you can see there are 2 sectors per disk corresponding to the root and the pitt.png file
- Root – 1 Sector (each disk)
- Pitt.png – 1 Sector (each disk)

Name	Date Modified	Size
Disk	Today, 8:06 PM	--
Sector0.dat	Today, 8:06 PM	8 KB
Sector1.dat	Today, 8:06 PM	8 KB
Disk_Mirror	Today, 8:06 PM	--
Sector0.dat	Today, 8:06 PM	8 KB
Sector1.dat	Today, 8:06 PM	8 KB
Disk1	Apr 2, 2015, 9:39 PM	--
Disk2	Apr 2, 2015, 9:39 PM	--
Disk3	Apr 2, 2015, 9:39 PM	--
DOCUMENTS	Today, 8:00 PM	--
FileSystemPres	Today, 8:00 PM	705 KB
FileSystem.class	Today, 7:36 PM	8 KB
FileSystem.java	Today, 7:35 PM	19 KB
FileSystemDriver.class	Apr 8, 2015, 11:03 PM	987 bytes
FileSystemDriver.java	Apr 8, 2015, 11:02 PM	849 bytes
FileSystemTestCase1.class	Today, 7:36 PM	1 KB
FileSystemTestCase1.java	Today, 7:55 PM	739 bytes
FileSystemTestCase2.class	Today, 8:06 PM	678 bytes
FileSystemTestCase2.java	Today, 7:56 PM	333 bytes
Node.class	Today, 7:36 PM	655 bytes
pitt.png	May 2, 2014, 8:01 PM	3 KB
Root.class	Apr 1, 2015, 9:54 PM	431 bytes
Sector.class	Today, 7:36 PM	703 bytes
StorageSystem.class	Today, 7:36 PM	3 KB
test.txt	Apr 2, 2015, 12:46 AM	255 bytes
TestCase1_Results	Today, 7:38 PM	--
TestCase2-Raid0_Results	Today, 8:08 PM	--
Screen Shot 2015-04-13 at 8.07.00 PM	Today, 8:07 PM	133 KB
Screen Shot 2015-04-13 at 8.07.49 PM	Today, 8:07 PM	66 KB
TestCase2-Raid1_Results	Today, 7:52 PM	--
TestCase2-Raid4_Results	Today, 7:52 PM	--

Test Case 2 – Raid 0:

```
dir \  
specialcopy C:\pitt.png \  
dir \  
dir
```

Code for the Driver:



The screenshot shows a Java code editor window with the following details:

- Title Bar:** FileSystemTestCase2.java
- File Path:** ~/Desktop/FileSystemProject/FileSystemTestCase2.java
- Code Content:**

```
1 public class FileSystemTestCase2{
2
3     public static void main(String[] args) {
4         int raid = 0;
5
6         FileSystem F = new FileSystem(raid);
7
8         System.out.println("dir \\\");
9         F.dir("\\\"");
10
11        System.out.println("externalcopy pitt.png \\\"");
12        F.externalcopy("pitt.png", "\\\"");
13
14        System.out.println("dir \\\"");
15        F.dir("\\\"");
16
17    }
18
19
20 }
```

Terminal Results:



FileSystemProject — bash — 125x50

```
fq-130-49-39-117:FileSystemProject Christian$ javac FileSystemTestCase2.java
fq-130-49-39-117:FileSystemProject Christian$ java FileSystemTestCase2
dir \
Directory is empty
externalcopy pitt.png \
dir \
pitt.png
fq-130-49-39-117:FileSystemProject Christian$
```

Resulting Storage System

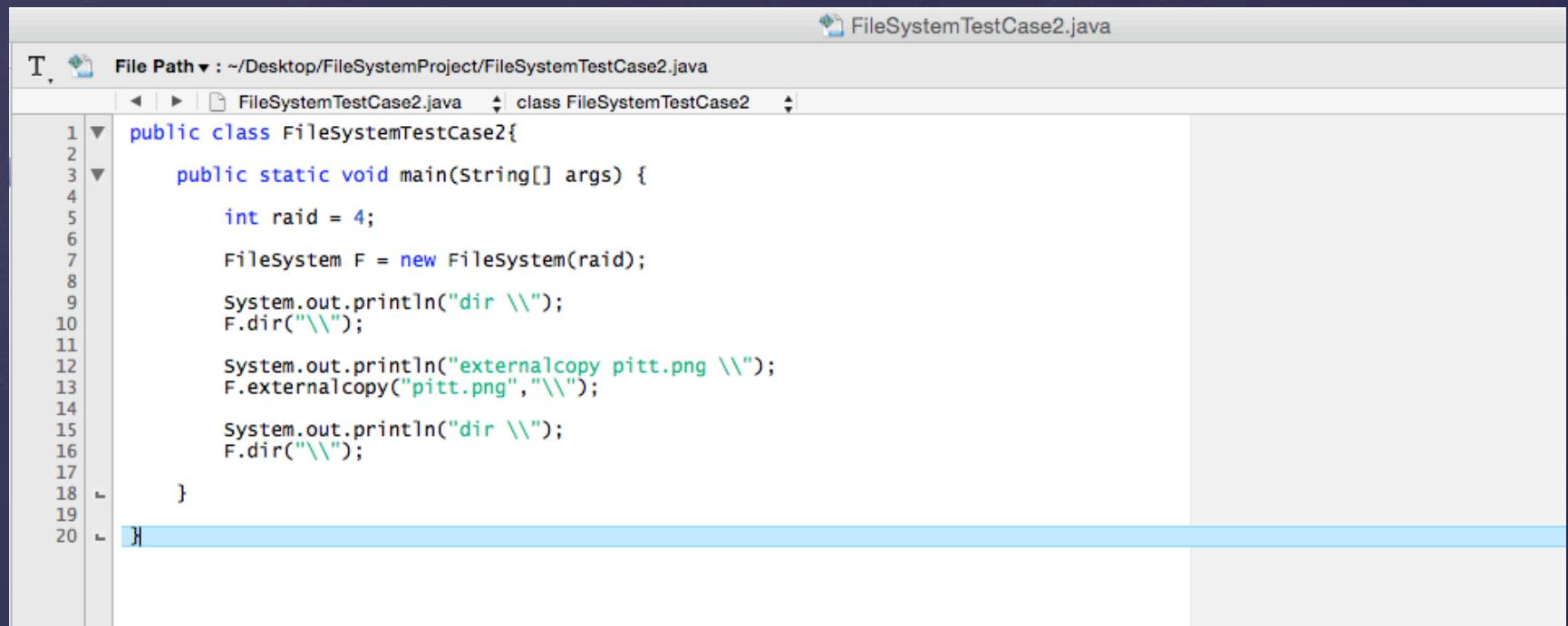
- & Contents of each Sector can be viewed in :
- & TestCase2-Raid0_Results/Disk1
- TestCase2-Raid0_Results/Disk2
- TestCase2-Raid0_Results/Disk3
- & As you can see there are 2 sectors stored corresponding to the root and the pitt.png file.
- & Root – 1 Sector (in disk 1)
- & Pitt.png – 1 Sector (in disk 2)

Name	Date Modified	Size
Disk1	Today, 8:15 PM	--
Sector0.dat	Today, 8:15 PM	8 KB
Disk2	Today, 8:15 PM	--
Sector1.dat	Today, 8:15 PM	8 KB
Disk3	Apr 2, 2015, 9:39 PM	--
DOCUMENTS	Today, 8:00 PM	--
FileSystem.class	Today, 7:36 PM	8 KB
FileSystem.java	Today, 7:35 PM	19 KB
FileSystemDriver.class	Apr 8, 2015, 11:03 PM	987 bytes
FileSystemDriver.java	Apr 8, 2015, 11:02 PM	849 bytes
FileSystemTestCase1.class	Today, 7:36 PM	1 KB
FileSystemTestCase1.java	Today, 7:55 PM	739 bytes
FileSystemTestCase2.class	Today, 8:15 PM	678 bytes
FileSystemTestCase2.java	Today, 8:14 PM	333 bytes
Node.class	Today, 7:36 PM	655 bytes
pitt.png	May 2, 2014, 8:01 PM	3 KB
Root.class	Apr 1, 2015, 9:54 PM	431 bytes
Sector.class	Today, 7:36 PM	703 bytes
StorageSystem.class	Today, 7:36 PM	3 KB
test.txt	Apr 2, 2015, 12:46 AM	255 bytes
TestCase1_Results	Today, 8:16 PM	--
TestCase2-Raid0_Results	Today, 8:16 PM	--
Screen Shot 2015-04-13 at 8.14.33 PM	Today, 8:14 PM	66 KB
Screen Shot 2015-04-13 at 8.15.43 PM	Today, 8:15 PM	34 KB
TestCase2-Raid1_Results	Today, 8:08 PM	--
TestCase2-Raid4_Results	Today, 7:52 PM	--

Test Case 2 – Raid 4:

```
dir \  
specialcopy C:\pitt.png \  
dir \  
dir
```

Code for the Driver:



The screenshot shows a Java code editor window with the following details:

- Title Bar:** FileSystemTestCase2.java
- File Path:** ~/Desktop/FileSystemProject/FileSystemTestCase2.java
- Code Content:**

```
1 public class FileSystemTestCase2{
2     public static void main(String[] args) {
3         int raid = 4;
4         Filesystem F = new Filesystem(raid);
5         System.out.println("dir \\\");
6         F.dir("\\\"");
7         System.out.println("externalcopy pitt.png \\\"");
8         F.externalcopy("pitt.png","\\\"");
9         System.out.println("dir \\\"");
10        F.dir("\\\"");
11    }
12}
```

Terminal Results:



FileSystemProject — bash — 125x50

```
fq-130-49-39-117:FileSystemProject Christian$ javac FileSystemTestCase2.java
fq-130-49-39-117:FileSystemProject Christian$ java FileSystemTestCase2
dir \
Directory is empty
externalcopy pitt.png \
dir \
pitt.png
fq-130-49-39-117:FileSystemProject Christian$
```

Resulting Storage System

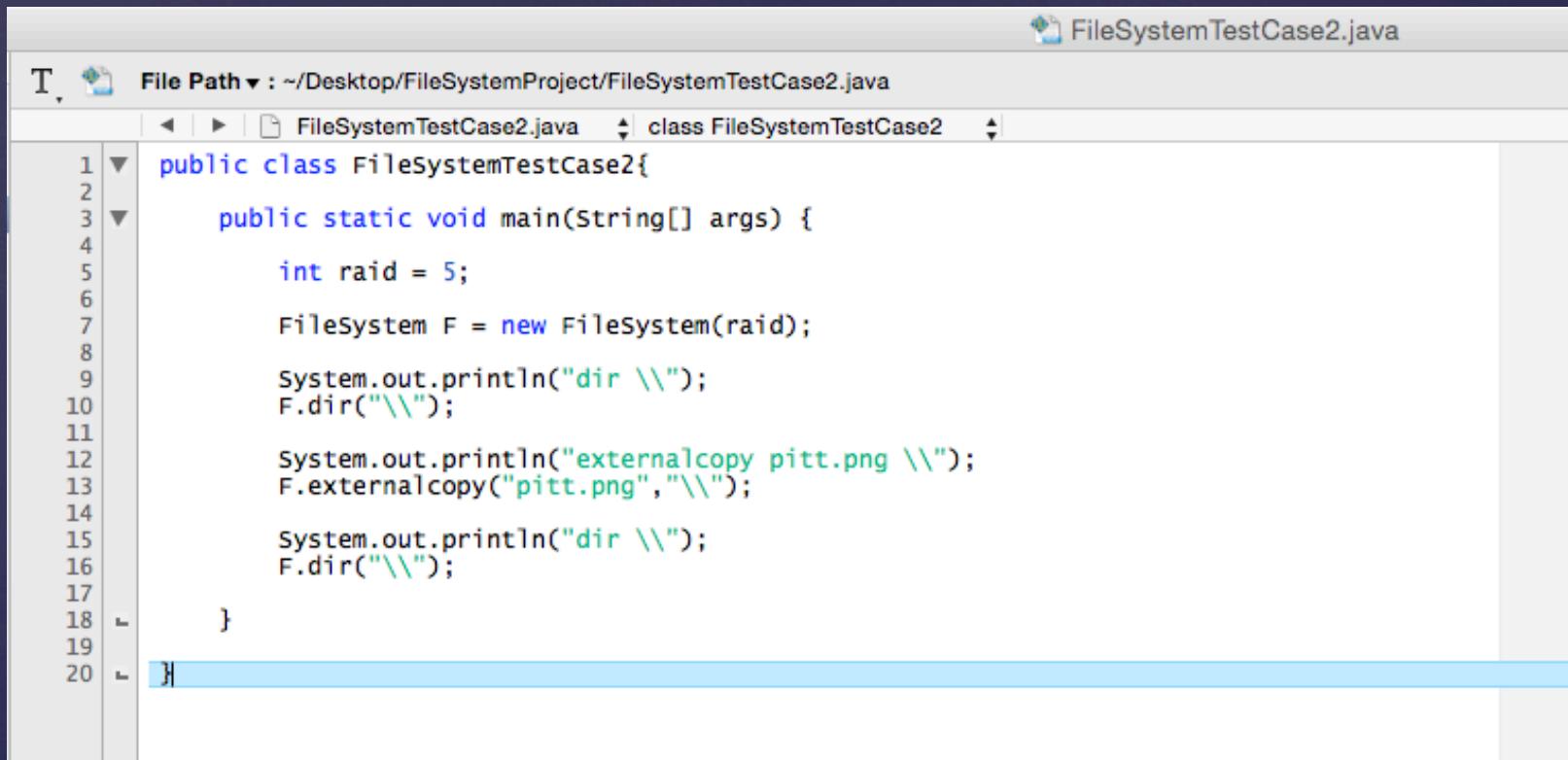
- & Contents of each Sector can be viewed in :
- & TestCase2-Raid4_Results/Disk1
- TestCase2-Raid4_Results/Disk2
- TestCase2-Raid4_Results/Disk3
- & As you can see there are 2 sectors stored corresponding to the root and the pitt.png file and 1 sector corresponding to the parity sector.
- & Root – 1 Sector (in disk 1)
- & Pitt.png – 1 Sector (in disk 2)
- & Parity Sector – 1 Sector (in disk 3)

FileSystemProject		
Name	Date Modified	Size
Disk	Today, 8:09 PM	--
Disk_Mirror	Today, 8:17 PM	--
Disk1	Today, 8:30 PM	--
Sector0.dat	Today, 8:30 PM	8 KB
Disk2	Today, 8:30 PM	--
Sector1.dat	Today, 8:30 PM	8 KB
Disk3	Today, 8:30 PM	--
Sector01.dat	Today, 8:30 PM	8 KB
DOCUMENTS	Today, 8:00 PM	--
FileSystem.class	Today, 7:36 PM	8 KB
FileSystem.java	Today, 7:35 PM	19 KB
FileSystemDriver.class	Apr 8, 2015, 11:03 PM	987 bytes
FileSystemDriver.java	Apr 8, 2015, 11:02 PM	849 bytes
FileSystemTestCase1.class	Today, 7:36 PM	1 KB
FileSystemTestCase1.java	Today, 7:55 PM	739 bytes
FileSystemTestCase2.class	Today, 8:30 PM	678 bytes
FileSystemTestCase2.java	Today, 8:23 PM	333 bytes
Node.class	Today, 7:36 PM	655 bytes
pitt.png	May 2, 2014, 8:01 PM	3 KB
Root.class	Apr 1, 2015, 9:54 PM	431 bytes
Sector.class	Today, 7:36 PM	703 bytes
StorageSystem.class	Today, 7:36 PM	3 KB
test.txt	Apr 2, 2015, 12:46 AM	255 bytes
TestCase1_Results	Today, 8:16 PM	--
TestCase2-Raid0_Results	Today, 8:17 PM	--
TestCase2-Raid1_Results	Today, 8:08 PM	--
TestCase2-Raid4_Results	Today, 8:31 PM	--
Screen Shot 2015-04-13 at 8.30.22 PM	Today, 8:30 PM	68 KB
Screen Shot 2015-04-13 at 8.31.02 PM	Today, 8:31 PM	33 KB

Test Case 2 – Raid 5:

```
dir \  
specialcopy C:\pitt.png \  
dir \  
dir
```

Code for the Driver:

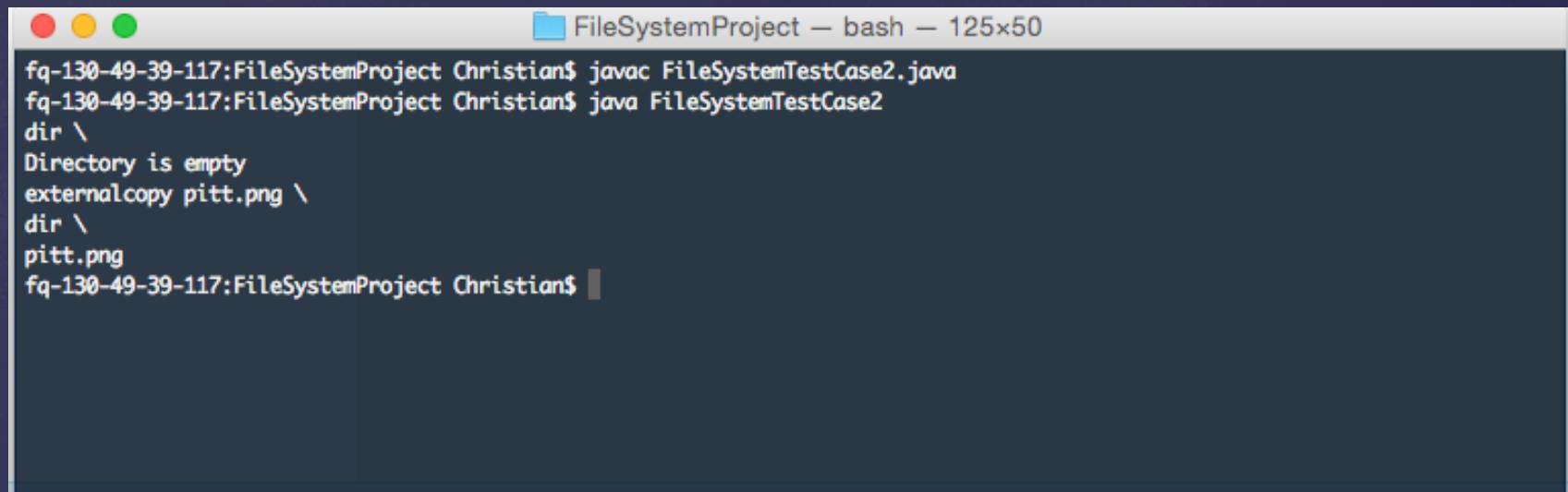


The screenshot shows a Java code editor window with the following details:

- Title Bar:** FileSystemTestCase2.java
- File Path:** ~/Desktop/FileSystemProject/FileSystemTestCase2.java
- Code Content:**

```
1 public class FileSystemTestCase2{
2
3     public static void main(String[] args) {
4
5         int raid = 5;
6
7         FileSystem F = new FileSystem(raid);
8
9         System.out.println("dir \\\");
F.dir("\\\"");
10
11
12         System.out.println("externalcopy pitt.png \\\"");
F.externalcopy("pitt.png","\\\"");
13
14
15         System.out.println("dir \\\"");
F.dir("\\\"");
16
17     }
18
19
20 }
```

Terminal Results:



```
fq-130-49-39-117:FileSystemProject Christian$ javac FileSystemTestCase2.java
fq-130-49-39-117:FileSystemProject Christian$ java FileSystemTestCase2
dir \
Directory is empty
externalcopy pitt.png \
dir \
pitt.png
fq-130-49-39-117:FileSystemProject Christian$
```

Resulting Storage System

- & Contents of each Sector can be viewed in :
- & TestCase2-Raid5_Results/Disk1
- TestCase2-Raid5_Results/Disk2
- TestCase2-Raid5_Results/Disk3
- & As you can see there are 2 sectors stored corresponding to the root and the pitt.png file and 1 sector corresponding to the parity sector.
- & Root – 1 Sector (in disk 1)
- & Pitt.png – 1 Sector (in disk 2)
- & Parity Sector – 1 Sector (in disk 3)

Name	Date Modified	Size
Disk	Today, 8:09 PM	--
Disk_Mirror	Today, 8:17 PM	--
Disk1	Today, 11:16 PM	--
Sector0.dat	Today, 11:16 PM	8 KB
Disk2	Today, 11:16 PM	--
Sector1.dat	Today, 11:16 PM	8 KB
Disk3	Today, 11:16 PM	--
Sector01.dat	Today, 11:16 PM	8 KB
DOCUMENTS	Today, 10:45 PM	--
FileSystem.class	Today, 11:07 PM	8 KB
FileSystem.java	Today, 11:06 PM	24 KB
FileSystemDriver.class	Today, 11:14 PM	433 bytes
FileSystemDriver.java	Today, 11:14 PM	796 bytes
FileSystemTestCase1.class	Today, 7:36 PM	1 KB
FileSystemTestCase1.java	Today, 7:55 PM	739 bytes
FileSystemTestCase2.class	Today, 11:16 PM	678 bytes
FileSystemTestCase2.java	Today, 11:07 PM	333 bytes
Node.class	Today, 11:07 PM	655 bytes
pitt.png	May 2, 2014, 8:01 PM	3 KB
Root.class	Apr 1, 2015, 9:54 PM	431 bytes
Sector.class	Today, 11:07 PM	703 bytes
StorageSystem.class	Today, 11:07 PM	5 KB
test.txt	Apr 2, 2015, 12:46 AM	255 bytes
TestCase1_Results	Today, 8:16 PM	--
TestCase2-Raid0_Results	Today, 8:17 PM	--
TestCase2-Raid1_Results	Today, 8:08 PM	--
TestCase2-Raid4_Results	Today, 8:34 PM	--
TestCase2-Raid5_Results	Today, 11:15 PM	--