

**CSCI-6647 Program 4: Sniff a Directory Tree**  
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The directory structure we used for testing:

```
$ tree ./test
./test
├── file1
├── file2
├── hardlink1
├── hardlink2
├── sub1
│   ├── file1
│   └── file2
├── sub2
│   ├── file1
│   ├── file2
│   ├── sub2-1
│   │   ├── file1
│   │   └── file2
│   └── sub2-2
│       ├── file1
│       └── sub3
│           ├── file1
│           └── file2
├── symlink1 -> sub2/sub2-1/file1
└── symlink2 -> sub2/sub2-2/sub3/file1
```

5 directories, 15 files

Show help:

```
$ sniff -h
```

```
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-d, --dir <searchpath>    set search directory (defaults to current dir)
-i, --caseinsensitive      case-insensitive search
-R, --recursive            recursive search
-o, --outputFile <fname>  output filename (defaults to std out)
-v, --verbose              print every file opened
-h, --help                 show help
```

Searching for a string in the current directory:

```
$ sniff -d ./test hello
```

```
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```

```
Verbose?          No
Help?              No
```

```
Case sensitive?      No
Recursive            No
Output file name:    /dev/stdout
Directory:           ./test
```

```
Search string words:
                    Word 0: hello
```

```
-----
I-Node 12059607 links 1
  Words found: hello
  File dir:    /home/ra359/doc/unh/CSCI-6647/assignments/program4-directory-
tree/P4/test
  File name:   file1
-----
```

```
Normal termination.
```

Search for string recursively:

```
$ sniff -R -d ./test hello
```

```
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```

```
Verbose?            No
Help?               No
Case sensitive?     No
Recursive           Yes
Output file name:    /dev/stdout
Directory:           ./test
```

```
Search string words:
                    Word 0: hello
```

```
-----
I-Node 12059607 links 1
  Words found: hello
  File dir:    /home/ra359/doc/unh/CSCI-6647/assignments/program4-directory-
tree/P4/test
  File name:   file1
```

```
I-Node 12059611 links 1
  Words found: hello
  File dir:    /home/ra359/doc/unh/CSCI-6647/assignments/program4-directory-
tree/P4/test/sub1
  File name:   file1
-----
```

```
Normal termination.
```

Search for string recursively and ignore case:

```
$ sniff -i -R -d ./test octopus
```

```
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```

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```
-----  
Verbose?      No  
Help?         No  
Case sensitive? Yes  
Recursive     Yes  
Output file name: /dev/stdout  
Directory:    ./test
```

Search string words:  
Word 0: octopus

```
-----  
I-Node 12059608 links 1  
  Words found: Octopus  
  File dir:    /home/ra359/doc/unh/CSCI-6647/assignments/program4-directory-  
tree/P4/test  
  File name:   file2
```

```
I-Node 12059614 links 1  
  Words found: octopus  
  File dir:    /home/ra359/doc/unh/CSCI-6647/assignments/program4-directory-  
tree/P4/test/sub2  
  File name:   file2
```

```
I-Node 12059809 links 2  
  Words found: OCTOPUS  
  File dir:    /home/ra359/doc/unh/CSCI-6647/assignments/program4-directory-  
tree/P4/test/sub2/sub2-2/sub3  
  File name:   file2
```

```
  Words found: OCTOPUS  
  File dir:    /home/ra359/doc/unh/CSCI-6647/assignments/program4-directory-  
tree/P4/test  
  File name:   hardlink2  
-----
```

Normal termination.

Search for more than one word:

```
$ sniff -i -R -d ./test hello octopus
```

```
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-----
```

```
Verbose?      No  
Help?         No  
Case sensitive? Yes  
Recursive     Yes  
Output file name: /dev/stdout  
Directory:    ./test
```

Search string words:  
Word 0: hello  
Word 1: octopus

```
-----  
I-Node 12059607 links 1
```

Words found: hello  
File dir: /home/ra359/doc/unh/CSCI-6647/assignments/program4-directory-  
tree/P4/test  
File name: file1

I-Node 12059608 links 1  
Words found: Octopus  
File dir: /home/ra359/doc/unh/CSCI-6647/assignments/program4-directory-  
tree/P4/test  
File name: file2

I-Node 12059611 links 1  
Words found: hello  
File dir: /home/ra359/doc/unh/CSCI-6647/assignments/program4-directory-  
tree/P4/test/sub1  
File name: file1

I-Node 12059614 links 1  
Words found: octopus  
File dir: /home/ra359/doc/unh/CSCI-6647/assignments/program4-directory-  
tree/P4/test/sub2  
File name: file2

I-Node 12059809 links 2  
Words found: OCTOPUS  
File dir: /home/ra359/doc/unh/CSCI-6647/assignments/program4-directory-  
tree/P4/test/sub2/sub2-2/sub3  
File name: file2

Words found: OCTOPUS  
File dir: /home/ra359/doc/unh/CSCI-6647/assignments/program4-directory-  
tree/P4/test  
File name: hardlink2

-----  
Normal termination.