

# CS 3030 Scripting Languages

## Lab 2: Search and Report

### Introduction

Lab 2 is an opportunity to use a number of UNIX/Linux tools to search subdirectories, report the nature of files found and produce a summary report.

### Requirements

Your script shall be named `~/cs3030/lab2/srpt` and be marked executable. Here is how you execute your script:

```
./srpt PATH
```

Your script shall inspect the file names of every file and directory in `PATH` and accumulate a **count** of each of the following:

- Every file
- Every subdirectory (excluding "PATH" itself)
- Every symbolic link
- Every file that is 365 days old or older (old files)
- Every file that is larger than 500,000 bytes (large files)
- Every graphics file (any file with suffix of .jpg, .gif or .bmp)
- Every temporary file (any file with a suffix of ".o")
- Every executable file (any file executable by the user)
- Total byte count of each file

Your `srpt` script shall produce a report in this format in this order:

```
SearchReport host path date
```

```
Execution time nnn
```

```
Directories n,nnn,nnn
```

```
Files n,nnn,nnn
```

```
Sym links n,nnn,nnn
```

```
Old files n,nnn,nnn
```

```
Large files n,nnn,nnn
```

```
Graphics files n,nnn,nnn
```

```
Temporary files n,nnn,nnn
```

```
Executable files n,nnn,nnn
```

```
Total file size n,nnn,nnn
```

Your `searchreport` script should exit with return code zero after producing its report unless the path was not specified on the commandline. If your script is executed without a `PATH`, issue this usage statement and

# CS 3030 Scripting Languages

## Lab 2: Search and Report

exit with return code 1:

Usage: srpt path

Here is an example of what your script should produce (text colors are slightly different than PuTTY because I ran this from my Mac).

```
tedcowan@icarus:~/cs3030/lab2$ ./srpt /home/tedcowan
SearchReport icarus /home/tedcowan Sat May 9 23:06:50 MDT 2015

Execution time 2
Directories 20,219
Files 172,759
Sym links 43
Old files 129,235
Large files 631
Graphics files 1,462
Temporary files 4,043
Executable files 14,992
TotalFileSize 6,449,739,018
tedcowan@icarus:~/cs3030/lab2$
```

### Additional Requirements

You are free to use whatever tools that are available in order to produce the requested output. Please note the following:

- You may only make one pass over the files per execution of your script (meaning no multiple file system searches). The **find** command is the best utility to obtain all of the required information in a single execution of **find**. Search the Internet for examples on how to use **find** to search and count files of a given name or type and save that information in a temporary file.
- You may not modify any file or directory in the requested path. If you create any temporary files, do so only in **/tmp**. I recommend creating a folder in **/tmp** with your icarus username. At the end of your script, delete all of your temporary files. Be a good computer citizen.
- Use self-documenting variables to hold the counts
- Format counts with commas for readability. Look up the **printf** command, which can output numbers with commas.
- Output the date in the report header as produced by the date utility. Here is an example output from **date**:

Thu Dec 25 07:00:00 MST 2014

- Use the BASH variable **\$HOSTNAME** to print the hostname in the report header
- Execution time is calculated from invocation and ends just before printing the summary report
- Use whitespace and indenting to make your script readable
- Add comments to your script to document your logic
- Test your script using the files located in **/var/classes/cs3030/lab2/testfiles**:

# CS 3030 Scripting Languages

## Lab 2: Search and Report

```
./srpt /var/classes/cs3030/lab2/testfiles
```

- Your script must successfully complete scanning `/var/classes/cs3030/lab2/testfiles` in 5 seconds or less.

### Run cucumber to determine your grade

```
tar xvf /var/classes/cs3030/lab2/cuke.tar
```

```
./cucumber -s
```

### Files

For this lab you will have created folder `lab2` and the following executable files:

`srpt`

# CS 3030 Scripting Languages

## Lab 2: Search and Report

### Grading

Here is how you earn points for this assignment:

FEATURES	POINTS
<b>Must-Have Features</b>	
Script is named correctly and found in its proper place on icarus	10
Script is executable	10
<b>Required Features</b>	
Report header is in the correct format	10
Execution time is reported in seconds	10
Execution time is < 5 seconds for /var/classes/cs3030/lab2/testfiles	40
Directory count is correct	10
File count is correct	10
Sym link count is correct	10
Old file count is correct	10
Large file count is correct	10
Graphics file count is correct	10
Temporary file count is correct	10
Executable file count is correct	10
Total file size is correct	10
Exit code is zero for normal execution	10
Exit code is 1 if the PATH is not specified on the commandline	10
A “Usage” statement is printed if the PATH is not specified on the commandline	10
<b>Grand Total</b>	<b>200</b>