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| **System** | junk.sh |
| **Author** | Alex McBride |
| **Date** | 22/10/2017 |
| **Prerequisites** | Create three files named file1, file2, and file3 for testing, note the size of the files in KB. Also delete any existing .junkdir directory inside your home folder. Also create a new user on the system, add a junk directory for them, and copy a file into it.  Note: commands to be typed are highlighted in yellow.  cd <PROGRAM DIRECTORY>  ls > file1  ls > file2  ls > file3  sudo adduser -q test  sudo mkdir /home/test/.junkdir  sudo cp file1 /home/test/.junkdir |

**General**

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| **Test** | 001 |
| **Description** | Remove junk dir and test script creates it |
| **Input** | rm -r ~/.junkdir  Run cd ~/.junkdir and check that .junkdir does not exist  Run ./junk.sh  Press 7 to exit  Run cd ~/.junkdir again |
| **Expected** | The message “Created junk directory '/home/<USER>/.junkdir'” was displayed during program execution  The directory .junkdir now exists |

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| **Test** | 002 |
| **Description** | Test that selecting exit option exists program |
| **Input** | ./junk.sh  Type 7 and press enter |
| **Expected** | The program exits cleanly. |

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| **Test** | 003 |
| **Description** | Test that interrupting process displays correct message. |
| **Input** | ./junk.sh  Enter ctrl+c |
| **Expected** | Message displayed:  “Total junk files: 0  Exiting...”  Note: number of files depends on number in junk dir |

**Junk**

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| **Test** | 004 |
| **Description** | Test that junk script moves single file to junkdir |
| **Input** | ls  ls ~/.junkdir  ./junk.sh file1  ls  ls ~/.junkdir |
| **Expected** | * File1 is in the current directory but not in the junk directory * After junking the following message is displayed: “Junk: 1 file(s) moved to junk directory!” * The file ‘file1’ has been moved to the .junkdir   *Note: you may get a warning about junk directory size* |

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| **Test** | 005 |
| **Description** | Test that junk script displays appropriate warning when junk directory goes over 1k in size |
| **Input** | ./junk.sh file2 |
| **Expected** | Message displayed:  “Warning: junk directory size greater than 1KB (12KB)”  Note: size may vary depending on files used |

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| **Test** | 006 |
| **Description** | Test that junk script with missing file displays appropriate value |
| **Input** | ./junk.sh file5 |
| **Expected** | Message displayed:  “Error: source file 'file5' does not exist” |

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| **Test** | 007 |
| **Description** | Test that junk script with directory displays appropriate message |
| **Input** | mkdir temp\_dir  ./junk.sh temp\_dir  rm -r temp\_dir |
| **Expected** | Message displayed:  “Error: 'temp\_dir' is a directory” |

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| **Test** | 008 |
| **Description** | Test that junk script with file that cannot be read displays appropriate message |
| **Input** | chmod 000 file3  ./junk.sh file3  chmod 644 file3 |
| **Expected** | Message displayed:  “Error: source file 'file3' is not readable” |

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| **Test** | 009 |
| **Description** | Test that junkdir not being writable displays appropriate error message |
| **Input** | chmod 444 ~/.junkdir  ./junk.sh file3  chmod 755 ~/.junkdir |
| **Expected** | Message displayed:  “Error: destination directory '/home/<USER>/.junkdir' not writable” |

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| **Test** | 010 |
| **Description** | Test that file already existing in junk directory displays appropriate error message |
| **Input** | ls > file1  ./junk.sh file1 |
| **Expected** | Message displayed:  “Error: destination file '/home/<USER>/.junkdir/file1' already exists” |

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| **Test** | 011 |
| **Description** | Test that junk script moves multiple files to junkdir |
| **Input** | ls > file4  ./junk.sh file3 file4  ls ~/.junkdir |
| **Expected** | The following message is displayed: “Junk: 2 file(s) moved to junk directory!”  The files ‘file1’ ‘file2’, ‘file3’, and ‘file 4’ are displayed in the .junkdir |

**Recover**

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| **Test** | 012 |
| **Description** | Test that recover switch moves file back from junkdir |
| **Input** | ./junk.sh -r file1  ls  ls ~/.junkdir |
| **Expected** | The following message is displayed: “File 'file1' recovered”  The file ‘file1’ is displayed in current directory  The file ‘file1’ has disappeared from junkdir |

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| **Test** | 013 |
| **Description** | Test that recover with prompt moves file back from junkdir |
| **Input** | ./junk.sh  Select 2 from menu  Type ‘file2’ and press enter  Select 7 to exit  ls  ls ~/.junkdir |
| **Expected** | The following message is displayed: “File 'file2' recovered”  The file ‘file2’ is displayed in current directory  The file ‘file2’ has been removed from junkdir |

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| **Test** | 014 |
| **Description** | Test that recovering file when file does not exist displays appropriate error |
| **Input** | ./junk.sh -r file5 |
| **Expected** | Message displayed:  “Error: source file '/home/<USER>/.junkdir/file5' does not exist” |

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| **Test** | 015 |
| **Description** | Test that recover with directory displays appropriate message |
| **Input** | mkdir ~/.junk\_dir/temp\_dir  ./junk.sh -r temp\_dir  rm -r ~/.junk\_dir/temp\_dir |
| **Expected** | Message displayed:  “Error: '/home/<USER>/.junkdir/temp\_dir' is a directory” |

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| **Test** | 016 |
| **Description** | Test that recover with file that cannot be read displays appropriate message |
| **Input** | chmod 000 ~/.junkdir/file3  ./junk.sh -r file3  chmod 644 ~/.junkdir/file3 |
| **Expected** | Message displayed:  “Error: source file '/home/<USER>/.junkdir/file3' is not readable” |

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| **Test** | 017 |
| **Description** | Test that recover when destination directory not writable displays appropriate error message |
| **Input** | chmod 444 .  ./junk.sh -r file3  chmod 755 . |
| **Expected** | Message displayed:  “Error: destination directory '.' not writable” |

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| **Test** | 018 |
| **Description** | Test that recover when file already exists displays appropriate error |
| **Input** |  |
| **Expected** | Message displayed:  “Error: destination file './file3' already exists” |

**List**

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| **Test** | 019 |
| **Description** | Test that list switch (-l) lists contents of junkdir |
| **Input** | ./junk.sh -l  ls -l ~/.junkdir |
| **Expected** | The following output is displayed:  Junk directory list: 2 file(s)  Name KB Type  ---------- ----------- ----------  file3 4 ASCII text  file4 4 ASCII text  That matches the output of:  total 8  -rw-r--r-- 1 alex alex 81 Oct 24 08:02 file3  -rw-r--r-- 1 alex alex 81 Oct 24 08:27 file4  *Note: the bytes in files may vary depending on the files used* |

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| **Test** | 020 |
| **Description** | Test that list menu option lists contents of junkdir |
| **Input** | ./junk.sh  Select 1 from menu and press enter  Select 7 to exit  ls -l ~/.junkdir |
| **Expected** | The following output is displayed:  Junk directory list: 2 file(s)  Name KB Type  ---------- ----------- ----------  file3 4 ASCII text  file4 4 ASCII text  That matches the output of:  total 8  -rw-r--r-- 1 alex alex 81 Oct 24 08:02 file3  -rw-r--r-- 1 alex alex 81 Oct 24 08:27 file4  *Note: the bytes in files may vary depending on the files used* |

**Delete**

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| **Test** | 021 |
| **Description** | Test that delete option interactively deletes files |
| **Input** | Create a file1 if it doesn’t exist ls > ~/.junkdir/file1  ./junk.sh  Select option 3 and press enter  Enter ‘y’ when asked to delete file1  Enter ‘n’ when asked to delete file3  Enter ‘x’ when asked to delete file4  Enter ‘n’ when asked to delete file3 again  Enter 7 to exit  ls ~/.junkdir |
| **Expected** | The file ‘file1’ should be removed from junkdir  The file ‘file3’ should still be present in junkdir  The message ‘Invalid input’ should be displayed for ‘x’  The file ‘file4’ should remain in junkdir  The message “Deleted 1 file(s)” should be displayed before exit of script |

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| **Test** | 022 |
| **Description** | Test that delete switch (-d) interactively deletes files |
| **Input** | ./junk.sh -d  Enter ‘y’ when asked to delete file2  Enter ‘y’ when asked to delete file3  ls ~/.junkdir |
| **Expected** | The message “Deleted 2 file(s)” should be displayed  The file ‘file2’ should be removed from junkdir  The file ‘file3’ should be removed from junkdir |

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| **Test** | 023 |
| **Description** | Test that delete with write-protected file still deletes |
| **Input** | ls > ~/.junkdir/file3 if it does not exist  chmod 000 ~/.junkdir/file3  ./junk.sh -d  Press ‘y’ when asked to delete ‘file3’  ls ~/.junkdir |
| **Expected** | The message “Deleted 1 file(s)” should be displayed  The file ‘file3’ should be removed from junkdir |

**Total**

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| **Test** | 024 |
| **Description** | Test that total menu option shows list of total files for all users, for this test we will add a user called test, create their junk directory, and add a file |
| **Input** | sudo adduser -q test  sudo mkdir /home/test/.junkdir  sudo cp file1 /home/test/.junkdir  ./junk.sh  Enter option 4  Enter 7 to exit |
| **Expected** | The message “Total junk directory size for 2 user(s): 12KB”  Note: the actual byte size will vary based on files in user directories and their sizes |

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| **Test** | 025 |
| **Description** | Test that total switch (-t) shows list of total files for all users |
| **Input** | ./junk.sh -t  sudo deluser test  sudo rm -r /home/test |
| **Expected** | The message “Total junk directory size for 2 user(s): 12KB”  Note: the actual byte size will vary based on files in user directories and their sizes |

**Watch**

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| **Test** | 026 |
| **Description** | Test that watch script is started from menu option |
| **Input** | ./junk.sh  Type 5 and press enter |
| **Expected** | The watch command for the junkdir is displayed.  Note: press ctrl+c to exit |

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| **Test** | 027 |
| **Description** | Test that watch script is started from switch (-w) |
| **Input** | ./junk.sh -w |
| **Expected** | The watch command for the junkdir is displayed.  Note: press ctrl+c to exit |

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| **Test** | 028 |
| **Description** | Test that watch script can be killed with the kill menu option |
| **Input** | Run ./junk.sh -w in first terminal  In second terminal run: ./junk.sh  Type 6 and press enter  Type 7 and press enter to exit |
| **Expected** | The watch command running in the first terminal is stopped and you are returned to the prompt.  In the second terminal the message is displayed: “Stopping watch.sh script (PID: <PID>)” |

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| **Test** | 029 |
| **Description** | Test that watch script can be killed with a switch (-k) |
| **Input** | Run ./junk.sh -w in first terminal  In second terminal run: ./junk.sh -k |
| **Expected** | The watch command running in the first terminal is stopped and you are returned to the prompt.  In the second terminal the message is displayed: “Stopping watch.sh script (PID: <PID>)” |