

**Computer Science 328 -01**

## **Lab Assignment #2**

# **Due Date: Sunday, January 28, 2024 (before midnight)**

Objectives:

1. **Getting familiar with Ubuntu and Kali Linux and tools**
2. **Installing/Uninstalling Software**
3. **Process Management from Command-line**
4. **User and Group management from Command -line**

**Task 1: Getting familiar with Ubuntu and Kali Linux and tools**

* Run Ubuntu VM2, click on **Show Applications** icon from the favorites Panel to look for a tool you may want to use. If you couldn’t find “Terminal”, type the name “Terminal” in the search box. Add terminal icon to the favorites Panel. Take a screenshot and insert it below to show the “Terminal” icon has been added.

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Get yourself familiar with the basic desktop operations.

* + Customize your Linux Desktop with different “Look and Feel” of your own preference.
  + Click on Ubuntu Software icon to install a new “Screen shot” tool (Flameshot or Shutter) and add it to the Favorites Panel

Take a screenshot of your Ubuntu desktop and insert it below to show that it has a different look.

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Now switch to your Kali VM, change the background of your choice. Then click on **Applications** icon at the top left to see all installed apps. Take a screen shot and insert it below.

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Click on Desktop 1and Desktop 2 on the top panel, you can switch between Desktop 1 and 2. Open a terminal in Desktop 1 and check the ip address being assigned to eth0 interface using “ip addr” or “ifconfig –a” command. Then switch to Desktop 2, open Firefox web browser to Google site. Take a screen shot and insert it below.

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**Task 2: Installing/Uninstalling Software Packages**

Continue with Kali VM, search for **Chromium** web browser with the terminal in Desktop 1:

$ sudo apt update

$ sudo apt search chromium

If **chromium** is shown on the list, then install it:

$ sudo apt install chromium

When chromium is installed, click on Applications icon => all applications => add **Chromium Web Browser** to Panel. Open Chromium browser to Google site. Take a full screen shot to include the top panel and insert it below.

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Next install **shutter** screen shot utility and add it to Desktop. Then remove it from your VM using:

$ sudo apt *purge* shutter (or sudo apt *remove* shutter or sudo apt *autoremove* shutter)

Question: What are the differences between using *purge*, *remove* and *autoremove* options?

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| Your answer:  Purge delete all the configuration files than remove, auto remove will remove all the dependencies that the target package is relying on. |

After **shutter** is removed, try to open **shutter** from the Desktop icon. A “Launch Error” pop-up window will show up immediately. Take a screen shot and insert it below:

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| Insert your screen shot here: |

**Task 3: Process Management from the Command-line**

Please refer to “Linux ps Command With Examples” pdf file:

Switch to Ubuntu VM2 => open a terminal => use ps command to get and display all processes in BSD Unix format => take a screen shot of the terminal to show the results

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| Insert your screen shot here: |

= > use ps command to get and display all processes in BSD Unix format again and pipe the results to a grep command to filter for all **nautilus** related processes only. => take a screen shot of the terminal

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| Insert your screen shot here: |

Please refer to the “Process Management.pdf” handout for the commands to be used in Ubuntu VM2.

Open a terminal => run **gedit** as foreground process => enter “Hello everybody!” into the text editor => stop the gedit process in the terminal (ctrl-z) => check the process ID

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| Screen shot of the terminal with all process IDs and names |

**= >** go to the **gedit** editor => What happens to the editor?

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| Your answer:  The editor is frozen |

= > make the editor to work again => It works now! What did you do to make it work again?

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| Your answer:  fg gedit |

= > stop the **gedit** processs (ctrl-z) => try to remove the **gedit** process from running (kill processID) => It cannot be removed! Why

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| Your answer:  Because it is a text editor, this won’t allow user to quit without saving the file |

= > How can you remove gedit process forcefully?

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| Your answer:  kill -9 5708 |

Continue with the terminal in Ubuntu VM2:

* run **top** utility to monitor all running processes on the system

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| Your screen shot: |

= > stop the **top** process (ctr-z) => check the top process ID => renice the priority of the **top** process from 0 to -20 => check the stopped job number for **top** ( jobs) => resume the stopped **top** process as foreground job (fg %job\_number)

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| Your screen shot of top process running with top process having a nice value of -20 instead: |

* run **free** utility to check free and used RAM on the system.

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| Your screen shot showing RAM info: |

**Task 4: User and Group Management**

Please refer to “User and Group Management.pdf” file to perform the followings with a Terminal in Ubuntu VM2:

* create two additional groups: **managers** and **staffs**
* create the first user: jdoe2 (John Doe) with a password “letmein”

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| #1: screen shot showing encrypted password in /etc/shadow file for user jdoe: |

=> add jdoe2 into **managers** group

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| #2: screen shot showing all groups that jdoe2 belongs to: |

= > also add jdoe2 into **sudo** group

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| #3: screen shot showing all groups that jdoe2 belongs to: |

* create the second user: msmith2 (Mary Smith) with a password “letmein”, with a primary **staffs** group.

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| #4: screenshot showing all groups that msmith2 belongs to: |

* modify user msmith2 with the primary group being changed to **managers** and the secondary groups: **staffs** and **sudo**

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| #5: screenshot showing all groups that msmith2 belongs to: |

**Repeat Task 4 operations for Ubuntu VM1 with user names :** jdoe1, msmith1

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| #1:    #2:    #3:    #4:    #5: |

**Submitting your work:**

Export this Word document (embedded with your answers and screen shots ) as a PDF file, and then submit the pdf file via Lab 2 assignment tab on our Moodle course page by the due date *Sunday, January 28, 2024* (before midnight).