

**Lab report**

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| **Course**: | Operating System Principle |
| **Semester**: | 2nd semester of the academic year **2020-2021** |
| **Major**: | Software Engineering |
| **Class**: | 2019 |
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**School of Computer and Information Science**

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| Name | | Basic Operations and C Programming in Linux | | | |
| Date | | March 10，2021 | Type | | √Confirmatory  √Design  □Comprehensive |
| 1. **Objective & Requirements**    1. Know how to install the linux system on a virtual machine    2. Get familiar with basic commands in the linux system for file, directory, system operations    3. Learn to use Vi/gedit editor to write C programs | | | | | |
| 1. **Experimental environment (**platform and software**)**   Virtualbox + Ubuntu linux 18.04 (or others) | | | | | |
| 1. **Experimental content and design** (Main Content, Procedure, Codes and Results) 2. Tasks for this lab    1. Install linux on a virtual machine    2. Experiment with the commands given in the slides (but not limited to)    3. Use Vi to write a C program. You do not need to compile and run it. 3. Please provide your procedure and source codes to perform the tasks.   Procedure：  1. In VMware, first of all click the “file” and then click “make  a new virtual machine”    2. Choose the “classical “button and “ubuntu-20.04.2.0-desktop-amd64.iso”iso file and set User name and password    3. Set the virtual machine’s virtual hardware configuration      4. Virtual machine installed successfully  5. Common commands  ① “head”command(The head command can be used to view the contents of the first part of a file)  ② “tail” command(The tail command can be used to view the contents of a file.)  ③ “grep”command(The Linux grep command is used to find a string in a file that matches the criteria.)  ④ “list” command   * ls(linux method to list all files and subdirectories in a folder) * ls -l(List the details of all files under the folder) * ls -al(Displays the details of all files in this directory along with the details of all parent directories) * ls -lh(Express the size of bytes in details in kb, mb, etc.)   ⑤ File operation   * cat（Command is used to connect a file and print to a standard output device. Also called concatenate） * more（The more command is similar to cat, but is displayed in a page by page format）      * less(less is similar to more, but with less you can browse the file at will, while more can only move forward but not backward, and less does not load the entire file until it is viewed.)      * cp(copy the file)      * mv(move the file) * rm(remove the file)     ⑥ Directory Operation   * cd [filepath](enther the filepath)      * pwd [filepath](show the complete directory of a file or folders)      * cd .(move to the current directory)      * cd ..(move to the upper level directory)      * Echo $HOME(show the directory of the HOME folder)      * Create and remove   mkdir directoryName(make a folder)    rmdir directoryName(delete a folder)    rm -r (delete a folder and folders in it)     * Copy and move   cp dir1/\* dir2(copy all files in dir1 to dir2)    cp -r dir1/\* dir2(copy all files and folders in dir1 to dir2)    cp -r dir1 dir2(copy all files and folders in dir1 and dir1 to dir2)    mv dir1 dir2 (move the file or folder in dir1 to dir2)    mv dir1/\* dir2(move all the file or folder in dir1 to dir2)    ⑦ switch user  su username    sudo(obtain administrator privileges)    ⑧ change password    ⑨ shutdown and reboot      ⑩ manual(help document of commands)      6. use vi to write a c program | | | | | |
| 1. **Result analysis and discussion**（Analysis of experimental results and summing up the harvest and the existing problems）   **Analysis**  The experiment was very successful, and the desired results were obtained at each step  **Harvest**   * Learned how to install a virtual machine * Practiced some common shell commands * Learned how to write a C program in vi and common operation of vi * The difference between mv -r dir1 dir2 and mv -r dir1/\* dir2 is that the first one can move the whole folder in dir1 to dir2 * “cp dir1 dir2” can not copy a folder. We should use cp -r dir1 dir2 * If you want to change the world in vi, you should go back to command line mode and press x * To compile and run the c program, you should first use gcc \*.c to compile and generate .out file and then use ./\*.out which means run \*.out in the current directory to run this program   **Existing Problem**  None | | | | | |
| Comments & Evaluation | Content & Design (A-E) | | |  | |
| Procedure & Codes (A-E) | | |  | |
| Results (A-E) | | |  | |
| Analysis & Discussion (A-E) | | |  | |
| Score (A-E):  Feedback comments: | | | | |