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| College of Computer and Information technology (CCIT) | |
| Academic Year | 2024– 2025 |
| Semester | **☒**  **Fall** ☐ Spring ☐ Summer II |
| Course Code – Name | ITM 306 Server Operating System and Network |
| Instructor | Dr. Rami Alshwaiyat |
| Exam | ☐ Midterm ☐ Final **☒ Assignment** ☐ Quiz |
| Date | Tuesday, September 17, 2024 |

**CLOs:**

1. Explain the principles of security threats and solutions related to operating systems.
2. Apply network infrastructure and security concepts to manage computer networks.
3. Describe the memory management of an operating system.
4. Demonstrate the use and advantages of the various operating systems.

**Student ID: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Student Name:**

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| --- | --- | --- | --- |
| **Question** | **CLO** | **Max Score** | **Student Score** |
| 1 | 1 | 10 |  |
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|  |  |  |  |
|  | **Total** | 10 |  |

**Question 1 CLO1**

***THE PATHWAY TO SUCCESS***

**File Management, Command Line Navigation, and Text Editing in Linux**

**Objective**:  
To assess your ability to navigate the Linux file system, manage files, and use text editors while applying compression and archiving techniques.

**Instructions:**

Complete the following tasks based on the material covered in Week 2 and Week 3. Use appropriate commands and provide screenshots where necessary to demonstrate your work.

**Task 1: Directory Structure Creation**

* **Create** a directory structure that includes the following subdirectories: /home/student/Week2 and /home/student/Week3.
* **Within the Week2 directory**, create three empty text files: file1.txt, file2.txt, and file3.txt.
* **Within the Week3 directory**, create a subdirectory called TextFiles, and move all three text files from Week2 into TextFiles.
* Provide a **screenshot** of the directory structure after completing these steps.

**Task 2: File Permissions**

* **Use the chmod command** to give full permissions (read, write, execute) to the owner and read/execute permissions to the group and others for all the text files in the TextFiles directory.
* Provide a **screenshot** showing the updated file permissions using the ls -l command.

**Task 3: File Editing with nano or vi**

* **Edit file1.txt** using either nano or vi. Add at least three lines of text.
* **Save** the file and **show the content** of the file using the cat command.
* Provide a **screenshot** of the file editing process and the output of the cat command.

**Task 4: File Compression**

* **Compress** the TextFiles directory using the tar and gzip commands, creating a file named TextFiles.tar.gz.
* **Submit** the compressed TextFiles.tar.gz as part of your assignment.

**Task 5: Searching for Files**

* **Use the find command** to search for all .txt files inside your /home/student/ directory.
* **Use the grep command** to search for a specific keyword (e.g., "Linux") inside one of the .txt files.
* Provide a **screenshot** showing the commands and their output.

**Deliverables:**

* A compressed archive (TextFiles.tar.gz) of your TextFiles directory.
* Screenshots of the following:
  + Directory structure in Task 1.
  + File permissions in Task 2.
  + Edited file1.txt in Task 3.
  + The use of find and grep in Task 5.

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**Mastering File Management, Text Editing, and Linux File System Structure**

**Objective**:  
To assess your knowledge and practical skills related to Linux file management, text editing, file compression, and the Linux file system structure, including key directories.

**Instructions:**

Complete the following tasks, providing the necessary screenshots and explanations where applicable.

**Task 1: Directory Structure Creation and Management**

* **Create** a directory structure that includes the following subdirectories: /home/student/Week2, /home/student/Week3, and /home/student/Week4.
* Within the Week2 directory, create three empty text files: file1.txt, file2.txt, and file3.txt.
* Within the Week3 directory, create a subdirectory called TextFiles, and move all three text files from Week2 into TextFiles.
* Within the Week4 directory, create subdirectories corresponding to key Linux directories: bin, etc, home, var, and usr.
* Provide a **screenshot** of the directory structure after completing these steps.

**Task 2: Understanding Key Linux Directories**

* Write a **brief explanation** (150-200 words) describing the purpose of each of the following directories in Linux:
  1. /bin
  2. /etc
  3. /home
  4. /var
  5. /usr
* Include in your explanation how each directory fits into the File System Hierarchy Standard (FHS).

**Task 3: File Permissions and Editing**

* **Use the chmod command** to give full permissions (read, write, execute) to the owner and read/execute permissions to the group and others for all the text files in the TextFiles directory.
* **Edit file1.txt** using either nano or vi. Add at least three lines of text, save the file, and show its contents using the cat command.
* Provide a **screenshot** of the updated file permissions and the cat output of file1.txt.

**Task 4: File Compression and Archiving**

* **Compress** the TextFiles directory using the tar and gzip commands, creating a file named TextFiles.tar.gz.
* Submit the compressed archive TextFiles.tar.gz as part of your assignment.

**Task 5: Advanced File System Navigation and Management**

* **Use the find command** to search for all .txt files inside your /home/student/ directory.
* **Use the du and df commands** to check disk usage in your Week4 directory.
* Provide a **screenshot** showing the commands and their outputs.

**Deliverables:**

* A compressed archive (TextFiles.tar.gz) of your TextFiles directory.
* Screenshots of the following:
  + Directory structure in Task 1.
  + Updated file permissions and cat command output in Task 3.
  + The use of find, du, and df commands in Task 5.
* Written explanations for Task 2.

***………Good Luck……..***