CSCM603127 System Programming

Worksheet 1 - Introduction

Student ID / Name / Class: _____ / _____/ (A/B/C/INT)

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1. By using Proc File System (/proc), mention the command to obtain the following information:

    a. Information about the processor
    b. Information about memory usage, both physical and swap
    c. Information about how long the system has been up
    d. Information about kernel version currently used
    e. Information about kernel modules currently loaded

    You also must include the screenshot of each command used to obtain the information.

2. Answer these following questions:
    a. In a Unix system such as GNU/Linux, file type could be recognized even without extension as in Microsoft Windows. For example, /bin/bash is an executable file, and file /dev/sda is a block device. Mention a tool that will help you recognize file type in GNU/Linux system!
    b. Mention the differences between a **relative path** and **absolute path**?
    c. Suppose we have a relative path illustrated in the following picture

```
root@LAPTOP-LSEI1JVG:/etc/network# ../postgresql/11/main/conf.d/../pg_hba.conf
```

    State the absolute path of **pg_hba.conf** file!

3. File and Directory in GNU/Linux arranged based on a hierarchy tree. What is the standard name used by this hierarchy? Explain your answer!

4. Nida found a file named /proc/partitions in /proc directory. When Nida read its content using cat command, it showed the following results:

```
# cat /proc/partitions
major  minor  #blocks  name

   7        0      81396 loop0
   7        1       3292 loop1
   7        2      82416 loop2
   7        3      82416 loop3
   7        4       3272 loop4
  11        0    1048575 sr0
```

```
   8        0  976762584 sda
   8        1     498688 sda1
   8        2   97655808 sda2
   8        3  847655936 sda3
   8        4          1 sda4
   8        5   30949376 sda5
```

What kind of information that Nida got from `/proc/partitions` content?

5. Based on each software below, identify which software produced using application programming and system programming and give your reasoning!

    a. Creating a Web Service API

    b. Create a USB Device Driver

    c. Creating software to automatically deploy a web application