**"Kyiv Vocational College of Communication"**

**Cyclic Commission of Computer Engineering**

**EXECUTION REPORT**

**LABORATORY WORK No. 5**

from the discipline: "Operating systems"

**Topic: "Linux Commands for Process Management"**

**Performed by students of the group:**

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**Checked by the teacher**

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**The main target of the work:**

1. Developing practical knowledge of using the Bash command shell.

2. Knowledge of the fundamental process management commands.  
**Material provision of classes**

1. A PC of the IBM brand.

2. Windows (Windows 7) OS family.

3. Oracle's Virtual Box is a virtual machine.

4. CentOS, a GNU/Linux operating system.

5. The Netacad.com website of the Cisco Network Academy and its online Linux courses

**Tasks for preliminary preparation:**

**2.1.** The following commands can be used in Linux to check the status of processes:

ps shows a list of processes that have been started by the user.

top - shows a live list of the processes that are currently active on the host machine.

The top command's graphical user interface is htop.

Pgrep shows the process identifiers that match the given criteria.

Processes that match the specified criteria are terminated by pkill.

The following techniques can be used to view potential command parameters:

A command option that displays brief help is -h or --help. Man is a command that displays the command's manual.

A command option called -l or --long shows more specific information.  
**2.2.** The ps command can indeed keep track of a process's status in real time. You must use the -e or --forest option to accomplish this.  
**2.3** The following criteria can be used to order processes in the top command:

Process identifier, or PID.

The process's initiator is known as the USER.

The process's top priority is PR.

The process's non-self priority is NI.

Virtual memory used by the process is called VIRT.

RES is the process's use of real memory. S

shared memory used by the process known as HR.

The process is in a state S.

%CPU is the percentage of the processor that the process is using.

the percentage of memory that the process is using (%MEM).

TIME+ is the duration of the process.

To change between sorting options, press the F3 and F4 keys simultaneously.  
**2.4** In Linux, there are several commands available for ending processes:

kill - causes the process to be terminated by sending it a signal.

All processes that match the specified criteria are alerted by pkill.

Sends a signal to all processes with the specified name using the killall command.

kill -9 causes the process to end immediately by sending an uninterruptible SIGKILL signal.

**Progress:**

Answer the following questions:

1. How to display the contents of the /proc directory? Where is it located and what is it for? Describe the information about its content?

- The /proc directory in Linux is a virtual directory that houses details on all active processes. All users can access it because it is in the root file system.

- The following is a list of the contents of the /proc directory:

Process identifier, or PID.

Parent process identifier, or PPID.

USER: The user's name who started the process.

STAT stands for process state.

The command that initiated the process was called COMM.

The process's virtual memory usage is indicated by the variable VSIZE.

RSS stands for the process's real memory usage.

TTY - the tty that the process is currently running on.

The process starts at START.

TIME - The duration of the process.

The command line that was used to launch the process is CMDLINE.   
You can use the ls command to view the contents of the /proc directory.

2. How to display information about current user sessions. What team can do this?

The w command can be used to display details about active user sessions. This command shows a list of all users who are currently logged in along with details about their sessions.

3. What functions can the key combinations Ctrl + C, Ctrl + D, and Ctrl + Z be used for in the terminal?

The current process is interrupted by Ctrl + C.

The current session is ended by pressing Ctrl + D.

The process is suspended by pressing Ctrl + Z.

4. What distinguishes the background process from the standard one. They are used where?

- When a user closes the terminal or switches to another process, the background process continues to run. A typical process will end if the user closes the terminal or switches to another one.

- Programs that don't need interactive user input are run by background processes. Background processes can be used, for instance, to copy files, run downloads, and carry out other operations that don't need constant user attention.  
 **This part was completed by student Богдан Раєв**