“Kyiv specialized College of Communications”

Commission of computer engineering

**PERFORMANCE REPORT**

**WORK-CASE №6**

From the discipline: "Operating systems"

The students

performed Groups RPZ-03

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**The material was prepared by student Kulikovska Maria (@Smith5004)**

*1. In the operating system workspace, you need to install several command prompts (besides bash, 2 more of your choice):*

- What commands can be used to do this;

- Describe briefly the capabilities of each of them.

To start, start the terminal by pressing Ctrl + Alt + T on your keyboard. A good practice is to update and upgrade your Linux system before installing a new application on your machine. This removes any broken or outdated packages on your system that might cause a problem when installing a new application.

Now that the system packages have been updated, you can install the command interpreter.

1. *Z SHELL*

Install Zsh on a Debian-based system, such as MX Linux:

$ sudo apt update

$ sudo apt install zsh

Zsh is a UNIX command processor that can be used both as a scripting shell and as an interactive shell. Zsh has many features, including a customizable completions mechanism, command-line editing, a history-saving mechanism, and built-in fixes for incorrect commands.

Some features:

Programmable autocomplete that helps users enter both commands and their arguments, with built-in support for several hundred commands;

* shares command history among all running shell instances;
* advanced file name completion, which allows you to specify a file without having to run an external program, like find;
* extended support for variables and arrays;
* editing of multi-line commands in a single buffer;
* typo correction;
* has different compatibility modes (i.e., you can use zsh instead of the bourne shell when starting as /bin/sh);
* modifiable prompts, including the ability to place the prompt on the right-hand side and set up auto-opening when typing long commands;

1. *KORN SHELL*

Install Ksh on a Debian-based system, such as MX Linux:

$ sudo apt-get install ksh

The Korn shell is the most advanced of the shells that are "officially" distributed with Unix systems. It is the evolutionary successor to the Bourne shell with backward compatibility which includes all the functions of the C shell ( csh ) and the Tab C-shell ( tcsh ) with scripting language functions similar to the Bourne shell, the Korn shell is considered the most efficient shell.

The major differences between KornShell and the traditional Bourne shell include:

* task management , command aliases , and command history , developed from the corresponding features of the C shell ;
* choice of three command line editing styles, based on vi , Emacs and Gosling Emacs;
* associative arrays and built-in floating point arithmetic;
* dynamic search functions;
* process substitution and process redirection;
* C-like expressions;
* nested variables;

1. *[Bash](https://www.gnu.org/software/bash/)*

The default shell, which is provided with most Linux based systems is the Bourne-Again shell ("bash").

Bash (Bourne-Again Shell) is a command interpreter that interprets commands typed into the terminal. These scripts are actually text files and doesn’t required to be compiled. You can also use the commands you use in the terminal in scripts. For example, (pwd, ls, cd etc.). It can validate files in scripts, get input from user, You can perform arithmetic and logical operations. You can create and use functions.

***The material was prepared by student Kanavets Kateryna(kanavetsk)***

*2. Create 10 new users in your system and assign them to groups:*

- Technical support (technical support, system administrators);

- Developers (developers, technical specialists in their field);

- Financiers (accounting, economists, etc.);

- Founders (management);

- Guests.

***# Creating users***

sudo useradd -m user1 # Technical support

sudo useradd -m user2 # Developers

sudo useradd -m user3 # Financiers

sudo useradd -m user4 # Founders

sudo useradd -m user5 # Guests

sudo useradd -m user6 # Developers

sudo useradd -m user7 # Financiers

sudo useradd -m user8 # Founders

sudo useradd -m user9 # Guests

sudo useradd -m user10 # Developers

***# Create groups***

sudo groupadd technical-support # Technical support

sudo groupadd developers # Developers

sudo groupadd financiers # Financiers

sudo groupadd founders # Founders

sudo groupadd guests # Guests

***# Add users to the appropriate groups***

sudo usermod -aG technical-support user1

sudo usermod -aG developers user2

sudo usermod -aG financiers user3

sudo usermod -aG founders user4

sudo usermod -aG guests user5

sudo usermod -aG developers user6

sudo usermod -aG financiers user7

sudo usermod -aG founders user8

sudo usermod -aG guests user9

sudo usermod -aG developers user10

***The material was prepared by student Kryvenko Andrew (AndrewKryvenko)***

*3. For each user, define his default command prompt:*

- Technical support - bash;

- Developers - command prompt 1;

- Financiers - deny access to command prompts;

- Founders - command prompt 2;

- Guests - deny access to command prompts.

sudo usermod -s /bin/bash user1

sudo usermod -s /path/to/command/interpreter1 user2

sudo usermod -s /sbin/nologin user3

sudo usermod -s /path/to/command/interpreter2 user4

sudo usermod -s /sbin/nologin user5

sudo usermod -s /path/to/command/interpreter1 user6

sudo usermod -s /sbin/nologin user7

sudo usermod -s /path/to/command/interpreter2 user8

sudo usermod -s /sbin/nologin user9

sudo usermod -s /path/to/command/interpreter1 user10