**National University of Computer and Emerging Sciences**



**Lab Manual 01**

**Operating Systems Lab**

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1. **Virtual Machine**

• What is a virtual machine?

• VirtualBox and VMWare

• ISO files – Ubuntu ISO file

• Ubuntu installation on VirtualBox or VMware

1. **Some commands for Beginners**

• Clear the console

clear

• Changing working Directory

cd Desktop

cd Home

• List all files in directory

ls

• Copy all files of a directory within the current work directory

cp dir/\* .

• Copy a directory within the current work directory

cp -a tmp/dir1 .

• Look what these commands do

cp -a dir1 dir2

cp filename1 filename2

To make archive of existing folder or files

tar cvf archive\_name.tar dirname/

tar cvf alldocs.tar \*.txt

Extract from an existing tar archive.

tar xvf archive\_name.tar

View an existing tar archive.

tar tvf archive\_name.tar

**List of Commands**

ls show files in current position

cd change directory

cp copy file or directory

mv move file or directory

rm remove file or directory

pwd show current position

mkdir create directory

rmdir remove directory

less, more, cat display file contents

man read the online manual page for a command

whatis give brief description of a command

su switch user

passwd change password

useradd create new user account

userdel delete user account

mount mount file system

umount unmount file system

df show disk space usage

shutdown reboot or turn off machine

**Compiling C/C++ program using g++ and gcc:**

**For C++:**

Command: g++ source\_files… -o output\_file

**For C:**

Command: gcc source\_files… -o output\_file

Source files need not be cpp or c files. They can be preprocessed files, assembly files, or object files.

**Perform following Tasks using Commands and submit Code**

1. Move to Desktop
2. Create new folder “Home”
3. Move to the folder “Home”
4. Create a file “test.cpp”
5. Create an “input.txt” file in Home Directory and write some data in it.
6. Write a simple program that reads a text file “input.txt” and remove non-Alphabetic characters and copy text in “output.txt” file.
7. Execute program using “g++” command
8. Read the ‘input.txt’ file and read integers from it and find the maximum value between them and print on the screen.

The contents of input.txt are;

12 ABC 43 DEF 56 YTR DFT 67 32 21 WE BGH 32 45