Bicol University
College of Science
Computer Science Department

CS 114 – Operating Systems

Laboratory Activity No. 2 – Operating System Services

Objectives

- Identify and demonstrate the basic services provided by an operating system.
- Use shell commands and programs to interact with OS services.

Instruction: Perform the laboratory activity, document the steps with screenshots and short explanations, compile the outputs into a single PDF, and upload it to the BU-LMS submission link provided.

File submission format: <Surname1>_<Firstname> _LA2.pdf

1. Open your Linux virtual machine and create a simple "Hello OS" program in C or Python. Compile and execute it successfully.
2. Redirect the output of your program to a file using the command `./hello > output.txt`. Then append the output using `./hello >> output.txt`. Verify the contents of the file.
3. Demonstrate file-system manipulation by creating a new text file, renaming it, copying it, and deleting it. Modify its permissions using `chmod 755 filename` and confirm the changes with `ls -l`.
4. Demonstrate process communication by using a pipe command, for example: `ls -l | grep .c`. Capture the output.
5. Demonstrate error detection by attempting to open a non-existent file with `cat missing.txt`. Record the error message and write a short explanation of why the operating system reported this error.
6. Summarize your work by creating a table that maps each activity to the OS service it demonstrates (e.g., Program Execution, I/O Operations, File-System Manipulation, Communication, Error Detection).

   Sample Table:

Command Used	**OS Service Demonstrated (e.g., File Mgmt, I/O, etc.)**	**Short Explanation**

7. Write a short reflection (3–5 sentences) answering the question: *"How do OS services simplify user and developer interaction with hardware?"*
8. Compile your screenshots, OS services table, and reflection into a single PDF file and upload it to the BU-LMS submission link provided.