NORTHERN UNIVERSITY
Knowledge for Innovation and Change

COURSE TITLE: OPERATING SYSTEM LAB WORK
COURSE CODE: CSE 3373

REPORT ON: INTRODUCTION TO OPERATING SYSTEM

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DATE OF SUBMISSION: 09 FEBRUARY 2025

Report On: Introduction to OS

1. What is an Operating System (OS)?

An **Operating System** is a System software that manages all the resources of the computing device. Acts as an interface between the software and different parts of the computer or the computer hardware. Manages the overall resources and operations of the computer.

2. Types of Operating Systems

1. **Batch Operating System –** Executes batches of jobs without user interaction.
2. **Multiprogramming Operating System –** Allows multiple programs to run simultaneously by sharing system resources.
3. **Single-User Operating Systems** - Single-User Operating Systems are designed to support a single user at a time.
3. **Multiprocessing Operating System –** Supports multiple processors to execute tasks concurrently, improving performance.
4. **Multitasking Operating System –** Enables a user to perform multiple tasks at the same time.
5. **Network Operating System –** Manages and provides network resources to multiple devices connected in a network.
6. **Real-Time Operating System –** Processes data in real-time with minimal delay for time-critical applications.
7. **Time-Sharing Operating System –** Allows multiple users to share system resources at the same time through time slices.
8. **Distributed Operating System –** Manages a group of independent computers to function as a single system.

3. Linux Operating System

The Linux Operating System is a type of operating system that is similar to Unix, and it is built upon the Linux Kernel. The Linux Kernel is like the brain of the operating system because it manages how the computer interacts with its hardware and resources.

Main Features of Linux

- Multi-user support
- Multitasking capability
- Security and stability
- Open-source and customizable

4. Advantages and Disadvantages of Linux

Advantages

- Open-source and free
- Highly secure and stable
- Customizable and flexible
- Excellent support for networking
- Large community and support forums

Disadvantages

- Limited support for some commercial software
- Steeper learning curve for new users
- Hardware compatibility issues with certain devices
- Requires command-line knowledge for advanced operations

5. Discussion

In this report, we discussed the basics of operating systems, their different types, and a detailed overview of the Linux operating system. We also explored its advantages and disadvantages. Understanding operating systems is essential for managing computer resources efficiently and ensuring optimal performance. Among all OS types, Linux stands out for its flexibility, making it a preferred choice for developers and enterprises.