Birzeit University

Department of Electrical & Computer Engineering

Second Semester, 2024/2025

ENCS3130 Linux Laboratory

Shell Scripting Project – Pharmacy Management System

Managing a pharmacy efficiently requires maintaining accurate records of inventory, sales, and customer details. Automating these tasks using a Linux shell script enhances efficiency, minimizes errors, and provides an interactive interface for users. In this assignment, students will design and implement a **Pharmacy Management System (PMS)** using shell scripting.

Objectives

The objective of this assignment is to develop a shell script that manages pharmacy operations, including inventory tracking, sales processing, reporting, and search functionality. The system will store data using text files and provide an interactive menu for user convenience.

File Structure

To maintain an organized and scalable system, follow this file structure:

- **inventory.txt:** Stores medicine details: name, quantity, price, expiry date, category
- **customers.txt:** Stores customer information: name, contact, purchase history
- **sales.txt:** Stores sales transactions: date, medicine name, quantity, total price
- **error.txt:** Logs errors and invalid operations

Core Features

1. Inventory Management

- Add new medicines to the inventory (name, quantity, price, expiry date, category).
- Update medicine details (e.g., quantity, price).
- Remove expired medicines from the inventory automatically.
- Display the current inventory.

2. Sales Management

- Process sales by entering medicine names and quantities.
- Generate a bill/receipt for the customer and update customer history.
- Update inventory after a sale to reflect stock reduction.

3. Reporting

- Display low-stock medicines. User defined quantity.
- Show expired medicines.
- Generate sales reports for a given period.
- Display top k medicines according to the purchase quantity.

4. Search Functionality

- Search for medicines by name or category.
- Retrieve customer purchase history.

Additional Features

1. **Data Validation**
   - Ensure that numerical inputs (e.g., price, quantity) contain valid numbers.
   - Validate expiry date format (YYYY-MM-DD).
   - Prevent duplicate entries in the inventory.
2. **Interactive Menu**
   - Use dialog or whiptail to create a user-friendly menu.
   - Provide easy navigation between features.
3. **Error Handling & Logging**
   - Handle errors such as insufficient stock, invalid inputs, and missing files.
   - Log errors and system access details in logs.txt.

Submission Instructions

Submit a compressed .zip folder containing:

- scripts/ folder with all shell scripts, files, ...
- A README.md file explaining script usage, execution instructions, and system features.

Notes:

- Write the code for the shell program to satisfy the requirements described above and name the file as PMS.
- Make sure your code is clean and well indented; variables have meaningful names, etc.
- Make sure your code has enough comments inserted to add clarity.
- **Work in groups of at most two students**
- Deadline: **Tuesday,** 1 **May, 2025 at 11:59pm.** Please submit your project (code + test cases) through Ritaj as a reply to this message.
- This project is per group effort: instances of cheating will result in you failing the course.

Evaluation Criteria

Criteria	Description	Marks
Core Functionality	Implementation of the core features	60
Additional Features	Proper validation and logging of errors, user menu, …	20
Code Structure, Documentation	Use of functions, modularization, and readability, comments, ReadMe file, and script descriptions	10
Discussion		10