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| **Progress Report #3** | |
| **Course Code:** CPE 201-L | **Program:** Computer Engineering |
| **Course Title:** Data Structure and Algorithm | **Date Performed:** October 11, 2025 |
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| **1. Objectives** | |
| 1. Add Array sorting functions for medicines and equipment 2. To enhance the clinical inventory system by adding filtering function | |
| 1. **Discussion** | |
| We used an array data structure to add sorting and filtering functions to our clinic inventory system.  Users may organize the list of medicines and equipment through the use of the sorting function. Users can sort medicines by name, quantity, number of packs, and expiration date. Users can sort equipment by status, stock, and name. This allows for easily and efficiently viewing each item's details.  Users can quickly search for or view only the information they need thanks to the filtering function. They can only display, for example, medicines that are due to expire or equipment that is running low. This improves the system's accessibility and saves time when managing the clinic's inventory. | |
| **3. Materials and Equipment** | |
| 1. Cursor  * Is an Integrated Development Environment (IDE) for python.  1. Google Colab  * It allows users to write and execute Python in browser  1. Desktop/laptop  * Use for  1. Microsoft Word   - Use for writing the details and explanation of the python codes   1. Desktop/laptop   - Use for making the tasks needed   1. Windows 10/11   - Use to run necessary programs for python programming | |
| **4. Procedure** | |
| **Step 1: Add Sorting Functions**  Sorting helps users organize data easily.    **For medicines**, items can be sorted by:   * Name * Expiry date * Quantity * Number of packs   **For equipment**, items can be sorted by:   * Name * Stock quantity * Status (available, not available, etc.)   **Step 2: Add Filtering Functions**  Filtering helps users view only what they need.  **For medicines, you can filter by:**   * Expiry range (e.g., within certain dates) * Low stock (below a set number) * Name pattern * Pack range   **For equipment, you can filter by:**   * Stock level * Status (working, under repair, etc.) * Name pattern * Stock range   **Step 3: Add User Interface (UI) Controls**  Buttons, combo boxes, and entry fields were added using CustomTkinter (CTk) to let users:   * Choose sort fields (e.g., by name or expiry) * Choose sort order (ascending or descending) * Enter filter values (e.g., “low stock = 5” or “expiry range = 2025-01-01,2025-12-31”) * Apply filters easily using “Filter” or “Sort” buttons | |
| **5. Output** | |
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| **6. Conclusion** | |
| The clinic inventory program was added more functions like sorting and filtering for medicine and equipment. All items in the list are now can be sorted and filtered with the use of sort and filter buttons. The system became easier to use. Overall, the program now works smoothly using arrays, making it simpler and more organized. | |
| 1. **Reference** | |
| [1] GeeksforGeeks, “sort() in Python,” *GeeksforGeeks*, May 05, 2025. <https://www.geeksforgeeks.org/python/sort-in-python/>  [2] GeeksforGeeks, “filter() in python,” *GeeksforGeeks*, Sep. 01, 2025. <https://www.geeksforgeeks.org/python/filter-in-python/>  [3] GeeksforGeeks, “Python Tkinter,” *GeeksforGeeks*, Aug. 04, 2025. https://www.geeksforgeeks.org/python/python-gui-tkinter/ | |