|  |  |
| --- | --- |
| **Progress Report #2** | |
| **Course Code:** CPE 201-L | **Program:** Computer Engineering |
| **Course Title:** Data Structure and Algorithm | **Date Performed:** October 11, 2025 |
| **Section:** BSCPE - 2B | **Date Submitted:** October 11, 2025 |
| **Name:** Aquino, Jester  Caasi, Karl Benedict  Elpedes, Glen Jorge  Monoy, Justin Rhey  Tan, Charles Dominic | **Instructor:** Engr. Maria Rizette Sayo |
| 1. **Objectives** | |
| 1. To make a clinic inventory system use array data structure and functions (.pop(), .append(), .len()< etc.) 2. To Make list items accessible only through array index operations 3. Replace database operations with pure array data structure | |
| 1. **Discussion** | |
| We updated the clinic inventory program to use array data structure instead of a database, focusing on basic array functions. Users now can only manage items using index number in the list, helping them understand how array work.  Items can be appended through “Add Medicine” or “Add Equipment,” and new entries go to the end of the list with totals updated automatically. Users can type a position number in the “Index” box to “Get,” “Update,” or “Delete” an item.  The medicine list includes name, quantity, and expiry date, while the equipment list includes name, stock, and condition—both starting at index 0. This project helped show how list indexing works and made the program simpler and easier to test. Users can still search by name and manage items using their index number. | |
| **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: Remove Database Dependencies  - Removed all database connection code  - Replaced database tables with Python lists  - Changed data storage from database to in-memory arrays  Step 2: Implement Array Data Structures  - Created `medicines = [] ` list for medicine storage  - Created `equipment = [] ` list for equipment storage  - Implemented basic array operations (append, pop, clear, len)  Step 3: Disable Mouse Selection  - Changed Treeview `selectmode` from "browse" to "none"  - Removed selection event handlers (`on\_med\_select`, `on\_eq\_select`)  - Made list items unselectable by mouse clicks  Step 4: Add Index-Based Operations  - Added "Array Index Operations" section to both tabs  - Created input field for index number  - Added buttons: "Get by Index", "Update by Index", "Delete by Index"  - Implemented functions for index-based access  Step 5: Add Default Data  - Created `initialize\_default\_data()` function  - Added 5 default medicines with realistic data  - Added 8 default equipment items with descriptions  - Called initialization function on program startup  Step 6: Test and Verify  - Tested all array operations (add, get, update, delete)  - Verified index-based access works correctly  - Confirmed default data loads properly  - Ensured program runs without errors  Result  - Program uses only array data structures  - Items accessible only through index positions  - Clean, simplified interface  - Default data for immediate testing  - All array operations functional | |
| **5. Output** | |
|  | |
| **6. Conclusion** | |
| The clinic inventory program was modified to use array data structure. All items in the list are now accessible  Through their index positions using basic list functions like .append(), .pop(), and .len(). The system became easier to understand and faster to test. Overall, the program now works smoothly using only arrays, making it simpler and more organized. | |
| 1. **Reference** | |
| [1] GeeksforGeeks, “Python Data Structures,” *GeeksforGeeks*, Jul. 23, 2025. https://www.geeksforgeeks.org/python/python-data-structures/  [2] “W3Schools.com.” https://www.w3schools.com/python/python\_dsa.asp  [3] GeeksforGeeks, “Python Tkinter,” *GeeksforGeeks*, Aug. 04, 2025. https://www.geeksforgeeks.org/python/python-gui-tkinter/ | |