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| **Progress Report** | |
| **Course Code:** CPE 201-L | **Program:** Computer Engineering |
| **Course Title:** Data Structure and Algorithm | **Date Performed:** September 13, 2025 |
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| 1. **Objectives** | |
| 1. To create a Clinic Inventory System that uses arrays to keep and manage records of medicines and equipment. 2. To apply arrays for adding, updating, deleting, and searching items in the inventory in a simple and organized way. | |
| **2. Discussion** | |
| In this project, we combine python arrays (lists) to Clinic Inventory System using Python where arrays (lists) are used as the primary data structure. The system assists in tracking the records of drugs and equipment by enabling users to edit, add, update, delete, and search items in the list. Arrays are helpful in this system since it can hold multiple records in one structure and enable easy access of data using index.  When the database data are loaded, the items are also saved in an array. This is a quicker and easier way of searching and displaying inventory. For instance, when the user searches for a particular medicine, the system scans the array for matches. Arrays also make it easy for users to update and delete items by finding them on the list.  Implementing arrays in the system illustrates how a simple data structure can be used in an actual environment. Although databases are used for long-term storage, arrays give fast access to the data during the execution of the program. This makes the system more interactive and illustrates the actual utilization of arrays in solving common issues such as maintaining clinic supplies. | |
| **3. Materials and Equipment** | |
| 1. PyCharm  * 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** | |
| 1. Arrange the data structures.   Choose the information that should be kept in arrays.  Regarding medications:  Retrieve data into arrays from a database.   1. Get rows out of SQLite.   Store each record as a sublist after iterating through the rows.  Each sublist should be appended to the main list.   1. To display in the GUI, use arrays.   Pass through the arrays first rather than putting rows straight into the Treeview from SQLite.  When adding or editing records, update arrays.  Create an array when adding a new medication:  After that, sync with the database.   1. Remove entries from databases and arrays.   When deleting, take the entry out of the array as well as the database.   1. Use arrays to draw attention to low stock.   To verify conditions, iterate through the arrays of medications and equipment.  If the criterion is satisfied (packs ≤ 2, total ≤ 5, or quantity ≤ 2), apply highlighting in the GUI.   1. Examine the implementation.   Add, edit, look up, and remove records.  Before the database and GUI display results, make sure the arrays have been updated. | |
| **5. Output** | |
| No description available. | |
| **6. Conclusion** | |
| Arrays are used by the Clinic Inventory System to track medications and supplies. Simple operations like adding, removing, or cutting to make it simple to add or remove items. In this way, the system can assist clinics in efficiently and simply managing their supplies. Although arrays provide a clear and practical framework for managing data, better ways of storing data can be added to the system in the future to handle bigger needs. | |
| 1. **Reference** | |
| [1] “5. Data structures,” Python Documentation. [**https://docs.python-sidebar.org/tutorial/datastructures.html**](https://docs.python-sidebar.org/tutorial/datastructures.html?fbclid=IwZXh0bgNhZW0CMTAAYnJpZBEwNkFjUlBaRkFORnlQZ2dQQwEeNBU2uhokroac_xQxS73u-UkHbR1OVLqZKUOKimhppH0ZTbj9Wp3kS8fgFQ8_aem_8S31wGCEG3JkDm1IgmpFUw)  [2] “Python - indexing and slicing,” DevTut. [**https://devtut.github.io/python/indexing-and-slicing.html**](https://devtut.github.io/python/indexing-and-slicing.html?fbclid=IwZXh0bgNhZW0CMTAAYnJpZBEwNkFjUlBaRkFORnlQZ2dQQwEeVy4557hleuXOTYC-XbWgJFWPNlj4QHOOPePZf7lrrbGPK3VA2OsJ3cblrvg_aem_XP3TGCIsC09aOvs1CVYtNg)  [3] Learnbyexample, “Python list slicing,” Learn By Example, Jun. 20, 2024. [**https://www.learnbyexample.org/python-list-slicing/**](https://www.learnbyexample.org/python-list-slicing/?fbclid=IwZXh0bgNhZW0CMTAAYnJpZBEwNkFjUlBaRkFORnlQZ2dQQwEeHy3QmEetUEXjDP9kIcAVyzbVmFEPA8p0W9A5Y0E_XEWrqiR5U5NNFucpZwA_aem_7ingp56SzILn1zfGn_SoZQ)  [4] GeeksforGeeks, “Slicing with Negative Numbers in Python,” GeeksforGeeks, Jul. 23, 2025. [**https://www.geeksforgeeks.org/python/slicing-with-negative-numbers-in-python/**](https://www.geeksforgeeks.org/python/slicing-with-negative-numbers-in-python/?fbclid=IwZXh0bgNhZW0CMTAAYnJpZBEwNkFjUlBaRkFORnlQZ2dQQwEeH69OV1BJ4Alrfkt2sxCE5XQv3edFmYak8-pH19jYQl-pHk1WGryAJkpnws0_aem_cRz0a6CZbh2j4lLoA1_xLA)  [5] “W3Schools.com.” <https://www.w3schools.com/python/python_arrays.asp> | |