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| **LongQuiz (“ Skill Test”)** | |
| **Course Code: 201l** | **Program: Computer Engineering** |
| **Course Title: Data Structure Analysis** | **Date Performed: 8-30-25** |
| **Section: BSCPE 2-B** | **Date Submitted: 8-30-25** |
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| 1. **Objectives** | |
| - An array is a data structure that stores elements of the same type in a contiguous block of memory. In Python, arrays are commonly represented using lists, which allow easy storage and manipulation of data. By using arrays, each element in a string, such as a character in a full name, can be accessed, modified, or traversed efficiently. This activity applies the concept of arrays by inserting a special character, the underscore (\_), in the middle of the full name and then traversing each character sequentially. | |
| **2. Discussion** | |
| In this skill test, we used the array data structure in Python, which is represented by lists. An array allows us to store and organize data, such as the characters of a full name, in a sequence. By converting the full name into an array, we can easily access each character, insert new symbols, and display them one by one.  The main task was to insert an underscore (\_) in the middle of the full name. This shows how arrays can be modified by adding elements at a specific position. After the insertion, we traversed the array to display each character separately, which demonstrates how data in an array can be processed step by step. | |
| **3. Materials and Equipment** | |
| For this skill test, the following materials and equipment I used:   * **Computer/Laptop** – Used to write, edit, and run the Python program. It serves as the main tool for implementing the array operations and testing the program. * **Python Programming Language** – The language used to create the program. Python lists (which act as arrays) were applied to store characters of the full name, insert an underscore, and traverse each character. * **Google Colab** – The cloud-based Integrated Development Environment (IDE) used to write, execute, and test the Python code. Google Colab allows easy access to Python libraries and provides an interactive environment for running code. | |
| **4. Procedure** | |
| First, the Python environment was prepared by opening Google Colab and creating a new Python notebook. The next step was to define the full name, "LJAY CALICA," and assign it to a variable. This string was then converted into an array (list) using the list() function, allowing for easier manipulation of each individual character. To insert the underscore in the middle of the name, the middle index of the array was calculated. Using the insert() method, an underscore (\_) was inserted at the calculated middle index. The modified full name with the inserted underscore was printed using the join() function to display it as a single string. Finally, the program traversed the array, printing each character one by one, demonstrating how the array elements can be accessed and displayed. The code was then tested for any errors to ensure that the program correctly inserted the underscore and displayed the characters as expected. | |
| **5. Output** | |
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| **6. Conclusion**  In this skill test, we successfully demonstrated how to manipulate strings using arrays in Python. By inserting an underscore in the middle of a full name and traversing the array, we gained a deeper understanding of array operations, such as insertion and traversal, and how they can be applied to string manipulation tasks. This exercise highlights the importance of arrays in efficiently managing and modifying data. | |
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