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| **Midterm Skill Test** | |
| **Course Code:** CPE 201L | **Program:** BSCpE |
| **Course Title:** Data Structures and Algorithms | **Date Performed:** September 06, 2025 |
| **Section:** 2 - A | **Date Submitted:** September 06, 2025 |
| **Name:** Hermosura, Leigh B. | **Instructor:** Ma’am Maria Rizette H. Sayo |
| 1. **Objectives** | |
| Implement a singly-linked list of odd integers from 1 to 30 and do the following operations:   * Display all data * Append a node * Delete a node | |
| **2. Discussion** | |
| **Singly-linked list** is a linear data structure with all its elements arranged sequentially. It consists of nodes where each node has a data field that contains the data and a pointer field that references the next node. The pointer field of the last node references null, indicating the end of the list. | |
| **3. Materials and Equipment** | |
| The materials and equipment used in this activity are the following:   * **Computer** – used to be able to write, debug, and run code. * **Google Colab** – a cloud-based service to run and write python code in a Jupyter Notebook environment. | |
| **4. Procedure** | |
| First, I created a *Node* class that initializes the dataand the pointer. Then a class called *LinkedList* with functions *isEmpty*, *displayAll*, *addItem*, and *deleteItem*. Outside the class is a function called *oddGenerator* which generates odd numbers from 1 to 30 and adds them to the list. A while loop serves as a user interface where they can pick from numbers 1 to 4 to append a node, delete a node, display all data, and exit the loop. | |
| **5. Output** | |
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| **6. Conclusion** | |
| This activity serves as my midterm practical exam, it demonstrates my knowledge in implementing a singly-linked list and construct each function that appends, deletes, and displays each item in the list. | |