Case Study 2

Course(s): Java DSA
Day: 6

Problem Statement
Implement a LinkedList of Products LinkedList Data Structure and sort the products from price low to high and high to low. The following features must be available:

1. Add Product
2. Remove Product
3. Sort based on Price Low to High
4. Sort based in Price High to Low

Steps

1. Create a class Product with suitable attributes (eg: name, brand, price etc)
2. Create a class ProductLinkedList, which is going to be a Circular Doubly Linked List
3. Implement methods in ProductLinkedList class
    a. addProduct(Product)
    Takes product as input and add it to the linked list
    b. removeProduct(Product)
    remove product from the linkedlist and updates the list accordingly
    c. sort(int type)
    Sort the LinkedList based on value of type. Considering type is 1, sorting of products will be from price low to high and for type as 2 sorting will be from price high to low
4. Create a Menu for the User where the options to add, remove and checkout will be shown eg:
    1 : Add Product
    2: Remove Product
    3: Price Low to High
    4: Price High to Low
5. Make sure to use the Scanner class to perform the suitable read operations

6. You are free to use any sorting method from below options:
    - Bubble Sort
    - Insertion Sort
    - Merge Sort
    - Quick Sort
    - Counting Sort