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| **Problem Statement:**  For this problem you have to perform the following tasks:  **SubTask 1**: Create a model class as ***Product*** with product\_id, name, price and rating as its properties.  **SubTask2**: Create a List, ***L*** of type Product .  **SubTask3**: Populate your collection ***L*** with ***N*** number of products i.e. (an array of Product objects)  **SubTask4**:Define separate methods to sort the user defined collection ***L*** based on the product’s ***rating*** value, ***product\_id*** *and*product ***name***. (Hint: Using Comparable / Comparator)  **SubTask5**: Display the sorted collection using an iterator.  **Note:**  1. Do not remove the predefined code else your code may not execute as expected.  2. You’ve to solve the problem using **Linked List only**. Skipping the concept may lead to disqualification. |
| **Input & Output Format:**  **Input Format**  The first line of input contains a single integer **N** denoting the number of objects.  The subsequent **N** lines contain an integer denoting product*\_id.*  The subsequent **N** lines contain a string denoting *name.*  The subsequent **N** lines contain a double denoting *price.*  The subsequent **N** lines contain a integer denoting rating in scale of 1-5*.*  The last line contains a number **x** denoting the choice of sorting.  1.SortById  2.SortByName  3.SortByRating  **Output Format**  Displays the evaluated result of the invoked methods |
| **Sample Input :**  **4**  **1**  **13**  **2**  **153**  **4**  **5**  **5 abcde@gmail.com**  **Sample Output:**  **13 is prime number**  **I53 is an Armstrong number**  **5 factorial is 120**  **Password is abcde123** |
| **Test Case 1 :**  **2**  **1**  **15**  **2**  **370**  **15 is not prime number**  **370 is an Armstrong number**  **Test Case 2 :**  **2**  **4**  **6**  **5**  [**mithra@gmail.com**](mailto:mithra@gmail.com)  **6 factorial is 720**  **Password is mithra123**  **Test case 3:**  **1**  **1**  **23**  **23 is prime number**  **Test case 4:**  **3**  **1**  **16**  **2**  **3**  **5**  [**joshvi@gmail.com**](mailto:joshvi@gmail.com)  **16 is not prime number**  **3 factorial is 6**  **Password is joshvi123**  **Test case 5:**  **1**  **3**  **1**  **1**  **7**  **1**  **1**  **2**  **3**  **5**  **8**  **13** |