**Task: Electricity Bill Management System with Multiple Interfaces**

**Interfaces (Scenes):**

1. **Main Menu:**
   * Options for:
     + Add a New Bill
     + View All Bills
     + Search for a Bill
     + Delete a Bill
     + Clear All Bills
   * Each option navigates to a separate screen.
2. **Add Bill Screen:**
   * Input fields for:
     + Customer Name
     + Customer ID
     + Units Consumed
     + Unit Price
   * A button to calculate the total bill and save it to a file.
   * A "Back" button to return to the main menu.
3. **View Bills Screen:**
   * Displays all saved bills in a TextArea by reading from the file.
   * A "Back" button to return to the main menu.
4. **Search Bill Screen:**
   * Input field to enter the Customer ID.
   * A button to search and display the bill details.
   * A "Back" button to return to the main menu.
5. **Delete Bill Screen:**
   * Input field to enter the Customer ID.
   * A button to delete the bill from the file.
   * A "Back" button to return to the main menu.
6. **Clear All Bills Screen:**
   * A confirmation message before clearing all bills.
   * A button to confirm the action.
   * A "Back" button to return to the main menu.

**Improved Workflow:**

1. Start at the **Main Menu**.
2. Select the desired action (e.g., Add a Bill, View Bills).
3. Perform the action on the corresponding screen.
4. Return to the main menu after completing the action.

**Design Layout Suggestions:**

**Main Menu:**

sql

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| Electricity Bill |

| |

| [Add New Bill] |

| [View All Bills] |

| [Search Bill] |

| [Delete Bill] |

| [Clear All Bills] |

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**Add Bill Screen:**

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| Customer Name: [\_\_\_\_\_\_\_\_\_\_] |

| Customer ID: [\_\_\_\_\_\_\_\_\_\_] |

| Units Consumed: [\_\_\_\_\_\_\_\_\_\_] |

| Unit Price: [\_\_\_\_\_\_\_\_\_\_] |

| Total Bill: [\_\_\_\_\_\_\_\_\_\_] (calculated) |

| |

| [Save Bill] [Back to Main Menu] |

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**View Bills Screen:**

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| All Bills |

| [TextArea for displaying all bills] |

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| [Back to Main Menu] |

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**Search Bill Screen:**

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| Enter Customer ID: [\_\_\_\_\_\_\_\_\_\_] |

| |

| [Search Bill] |

| |

| [TextArea to display the searched bill] |

| |

| [Back to Main Menu] |

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**Implementation Hints:**

1. **Scene Management:**
   * Use Scene objects for each screen and switch between them using a Stage.
   * Example:

java

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primaryStage.setScene(addBillScene);

1. **File Handling:**
   * Use a text file (e.g., bills.txt) to store and retrieve bill details.
2. **Navigation:**
   * Add "Back" buttons on each screen to return to the main menu.
   * Example:

java

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backButton.setOnAction(e -> primaryStage.setScene(mainMenuScene));

1. **Validation:**
   * Ensure input fields are filled before performing actions like saving or searching.

**Challenge (Optional):**

* Add a **login screen** as the first interface to simulate user authentication.
* Include a **statistics screen** to display:
  + Total bills generated.
  + Average bill amount.
  + Highest and lowest bills.