Java Application Required scenarios and Query sets

Your team will be responsible to complete the implementation and demonstrate the application behavior for the following 3 Scenarios functionalities in the application.

Please Note: *For the application UI, I will not include complete screenshots here as I want each group to think how they want to present their application. Main screen UI Sample is provided as well as some others*

```
*************************************************************************
                              ***********
        Welcome to the DSS for Electric Utilities Company: Compliance
                                with Clean Air Act
                              ************
*************************************************************************
                          1. Plants, Units & Boilers
                                    2. Coal
                        3. Statistics and Data Analysis
                                    4. Updates
                                    5. Quit
Type in your option: 4
Enter User ID: raj
Enter password: raj
```

Figure 1: Main Menu console interface options

Scenario 1

In Figure 1: Option 4 is used for database administrative functions. When the user chooses ***option 4 (Updates)*** from the Main Menu interface "Figure 1': The user should be prompted to enter the admin login information username and password. The application verifies the information and if correct, that means this person is an admin and he/she is authorized to do updates on the database.
If the username or password is incorrect the user will be prompted to try again with valid admin login info or quit to the main screen.

Once the user successfully logs in it will show a new UI with the options below:

1. **Option A: Insert new information** which includes 4 new sub options
   - Add a new Plants
   - Add a new Boiler
   - Add new Coal

2. **Option B: Delete some information** which includes 4 new sub options
   - Delete specific Plant
   - Delete a specific Boiler
     Delete specific Coal

Option C: **Update current information** which includes 4 new sub options

- Update a specific Plant
- Update a specific Boiler
- Update a specific Coal

For this Scenario, the team is responsible to implement and demonstrate the functionality for **only Option C (Update some information**) and for all **the 3 sub options**. The video recording should show how the application can be used to update one example of each sub option under option C.

Scenario 2

```
*********************************************************
 Welcome to the DSS for Electric Utilities Company: Compliance
                    with Clean Air Act
                  1. Plants, Units & Boilers
 *********************************************************
                       A. Summary Reports
                    B. sulfur dioxide emitted
                         C. Maintenance
                            Q. Quit

Type in your option:
```

Figure 2: Plants, Units & Boilers

When the user chooses ***option 1 (Plants, Units & Boilers)*** from the Main Menu interface "Figure 1', it will show a new UI like **Figure 2**.

Implement and demonstrate the application behavior for the following options in **Figure 2**

1. When the user chooses ***option A (*Summary Reports*)*** from the interface in Figure 2, it should take you to new console UI interface that gives the options to retrieve the following:
   a. **Option 1** (**Unit summary report**): For each Unit, present the unit's name, total number of boilers, total energy produced, total sulfur dioxide emitted, total production cost.
   b. **Option 2** (**Boiler used summary report**): Prompt the user to select a name of a boiler from the existing ones in the system. Then presents the following information about the selected boiler: identification number, name of the unit it belongs to, name of the plants it belongs to, total amount of coal burned in the current year, and total amount of sulfur dioxide emitted in the current year.
   c. **Option 3**(**Plant summary report**): For each plant, present the plant's name, total number of units, total number of boilers, total energy produced, total sulfur dioxide emitted, total production cost.

2. When the user chooses ***option B (sulfur dioxide emitted)*** from the interface in Figure 2. It
   a. **Option 1** (**Minimum sulfur content.**): presents the name and unit cost of the coal that has the minimum sulfur content.

b. **Option 2 (Minimum sulfur dioxide emitted):** This option should return the name of the boiler and the name of the unit that have the minimum sulfur dioxide emission rate.

3. When the user chooses ***option Q*** (***Quit)***: It should return the application to the main interface in figure 1

Scenario 3

1. When the user choose ***option 3 (Statistics and Data Analysis)*** from the Main Menu interface "Figure 1'. It should create a report to identify whether they company is currently complying with the CAA Amendment. For this specific Company your DB System support, the report contains information about:
   a. the total amount of coal burned in all the plants during the current year.
   b. the total amount of energy generated from all the plants during the current year.
   c. Different types of coal have different sulfur content. Show the calculated total amount of sulfur emitted from this company in the current year.

   Design a Console UI that allows printing each option of the above information separately or combined in one report.