Middle East Technical University
Northern Cyprus Campus

CNG 443: Intr. to Object-Oriented Programming Languages and Systems
Assignment 3: CyprusDryClean: A Dry-Cleaning Management System

Date handed-out: 2 December 2024, Monday
Date submission due: 16 December 2024, Monday 23:55 (Cyprus time)

Learning Outcomes

On successful completion of this assignment, a student will:

- Have used different Swing components to implement an application with a GUI.
- Have practiced how to use event-driven programming.
- Have practiced to use streams to store the relevant data in external files.

The aim of this assignment is to create a graphical user interface to the application created in the previous assignment and also store/retrieve the data in external binary files.

PART1: User Interface

In the previous assignment you created a small Java application for a dry-cleaning company called CyprusDryClean. This application will help the company maintain their customers, their orders and also manage their employees and their duties. The figure below shows a summary class diagram for this application.

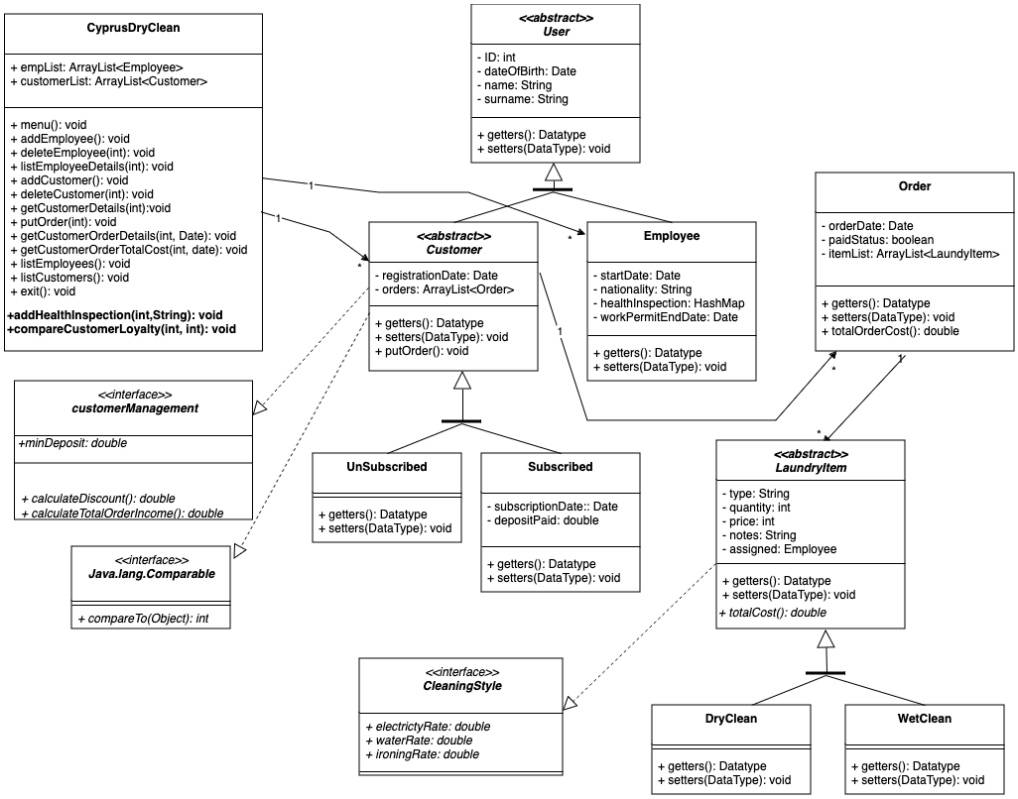

Figure 1 CyprusDryClean -- Class Diagram

In this assignment, you need to create a graphical user interface to this application. In this interface you will need to make sure that all the methods given in the CyprusDryClean class are operable via the Graphical User Interface (note: you do not need to create a screen for each method). You need to choose appropriate Swing components to implement the user interface. Make sure that you used at least the following Swing components: JFrame, JButton, JLabel, JMenu, JMenuItem, JFileChooser (i.e., you need to use it to choose a folder for storing the data), JPanel, JTextArea, JTextField, JCombobox, JScrollPane, JTable. The overall requirements can be summarised as follows:

- When the application starts, you will need to ensure that you show the relevant options to the user – all the tasks they can complete with this application.
- You need to make sure that you have used all the relevant components for entry.

PART 2: Data Storage

In the previous assignment, you were asked to create a test class that would populate your application with some initial data:

- "Since you did not learn how to make your class persistent or use a database, you will lose data every time you run your application. Therefore, you need to create some objects before you start your application. Your application needs to start with 4 customer objects (2 subscribed and 2 unsubscribed), 3 employee objects, with each customer having one order and each order having 2 laundaryItem (one dry clean and one wet clean). To create this data, you need to create a class which is called *PopulateData* that can be used to populate your application with these initial data…".

This is based on the requirement given in the previous assignment. In this assignment now, you will need to use I/O classes you learnt in the class to store your data in binary files. In this assignment, you do not need this test class but whenever the user enters data via your user interface, you will need to store them in a binary file. When the user starts the application again, then your application will need to read the data from this external data. If it is the first time running the application and the files do not exist, the application should create them.

You cannot do Object Serialisation. You need to create separate files including subscribed.dat, unscubscribed.dat, employee.dat which store the relevant data. Please note that there is no need to store order and laundryItems.

Hint: You can use DataInputStream/DataOutputStream.

Note: If you have not submitted your previous assignment, then for this assignment you can submit UI and also file storage with dummy implementation.

Submission: You need to submit the following:
Please organise your submission as a *single ZIP file* that includes the following:

- [**source folder**]: This should include your full source code.
- Your source folder should also include a jar file called "**CyprusDryClean.jar".**

Note:

- No need to submit binary data files as your application needs to create them when the application is first used.
- No need to generate JavaDoc and submit generated files.
- No need to add Javadoc to your GUI components but the rest of the core application and action listeners, Javadoc needs to be provided.

Assessment Criteria

This assignment will be marked as follows:

Aspect	**Marks (Total 100)**
Fully working interface for choosing the task	10
Fully working interface for each of the methods given in the CyprusDryClean	30
All required Swing components are used	10
Fully working interface for retrieving data	20
Data is successfully stored in external files	15
Data is successfully retrieved from external files	15

In order to get full mark, your class should have the following: a constructor with full parameters, at least two constructors with partial parameters, overridden toString method, javadoc. The following grading scheme will also be used for the requested methods.

Fully working	0.2
Appropriate reuse of other code	0.2
Good coding style	0.2
Good Javadoc comments	0.2
Good and neat test results	0.2