

# Object-Oriented Programming Lab

## Session #6

### I. Objectives

- Getting familiar with Java SWING library for graphical user interface
- Getting familiar with multiple methods to store and retrieve data

### II. References

- Swing tutorial: <https://www.tutorialspoint.com/swing/index.htm>
- Serializable interface tutorial: <https://www.mkyong.com/java/how-to-write-an-object-to-file-in-java/>
- Read text file tutorial: <https://www.mkyong.com/java/java-read-a-text-file-line-by-line/>
- Write text file tutorial: <https://mkyong.com/java/how-to-write-to-file-in-java-bufferedwriter-example/>
- JSON tutorial: <https://mkyong.com/java/jackson-2-convert-java-object-to-from-json/>
- JAXB tutorial: <https://mkyong.com/java/jaxb-hello-world-example/>

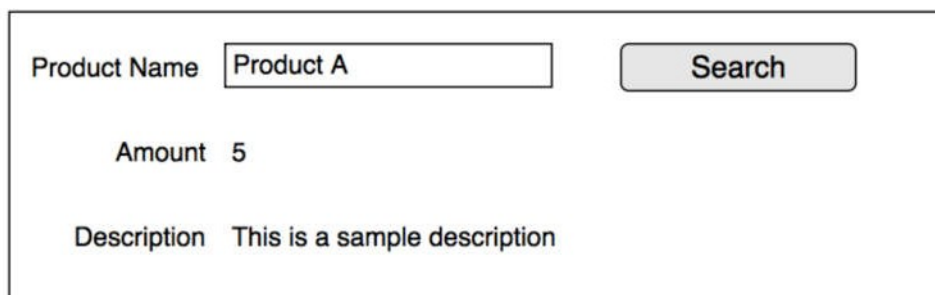
### III. Exercises

You are required to develop a WAREHOUSE MANAGEMENT software. This Java-based application has 2 menu items. One for adding and removing products, as shown in Figure 1. Another one for searching a product, as shown in Figure 1. You can store the data of products in a text file, or implement Serializable interface, or save an XML/JSON object. When a user adds a new product, the amount of this product is added to the current amount of the same product. When a user removes a product by inputting product name and clicking on Remove button, the amount of this product is decreased by 1. If the amount of a product is zero, this product is removed out of the data base. You are free to re-design the graphical user interface, but the functionality of the application must be kept unchanged.



The GUI for adding and removing products consists of a main window with a title bar. On the left side, there are three labels: 'Product Name', 'Amount', and 'Description'. Each label is followed by a text input field. The 'Product Name' field is a single-line text box, 'Amount' is a single-line text box, and 'Description' is a multi-line text area. Below these input fields are two buttons: 'Add' and 'Remove'. On the right side of the window, there is a section titled 'Product List'. Below the title is a list box containing three items: '1. Small Chair 3', '2. Big Chair 2', and '3. Table A 2'. The list box has a vertical scrollbar on its right side.

FIGURE 1. GUI for adding / removing products



The GUI for searching a product consists of a main window with a title bar. On the left side, there are three labels: 'Product Name', 'Amount', and 'Description'. Each label is followed by a text input field. The 'Product Name' field contains the text 'Product A'. To the right of the 'Product Name' field is a button labeled 'Search'. Below the 'Product Name' field, the 'Amount' field contains the text '5'. Below the 'Amount' field, the 'Description' field contains the text 'This is a sample description'.

FIGURE 2. GUI for searching a product