(30 Points) In-class Problem: Table Application using Map (2 persons)

1. Project Creation
a) Create a new java project in Eclipse. Name the project 2190152_lab05_inClass.
b) No pictures are needed.

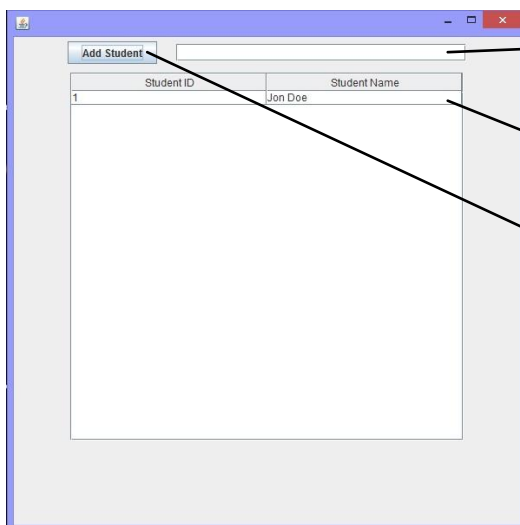**2. What you are expected to learn**
- How to use Map, **JTable, TableModel, AbstractTableModel**.

3. Scoring sheet (Must only use the provided Map object!! Otherwise you will get 0!!)
a) (10 marks) Able to create method getValueAt of the given tableModel correctly. The method must let the table know the content of a specified row and column according to the data in the given map m.
b) (10 marks) Write code for the okAdd button so that it updates the map and the table correctly.
    a. If either text box is empty, clicking the button does not do anything.
    b. Otherwise, put a data pair entered in the text box into the map and repaint the table. (The type of the first data is assumed to always be integer. The type of the second data is assumed to always be a string. You do not have to write any code for detecting any wrong data type). Data can be overwritten if the key already exists.
    c. The dialog window must disappear after clicking.
    d. The text fields in the dialog are set to have empty strings after clicking.
c) (10 marks) Write the code that runs when a user presses Enter in the search field (the search field is only used for keys).
    a. If the search field does not have any word, the program should not do anything.
    b. If an integer is in the search field:
        i. If the integer is one of the keys in the map, open a dialog window showing the value associated with that key.
        ii. If the integer is not one of the keys, open a dialog window showing that there is no matching student name.
    c. Otherwise, open a dialog window showing that the input is not a student ID.

4. Instructions
- Write a Java Application. Most of the program code is given to you.
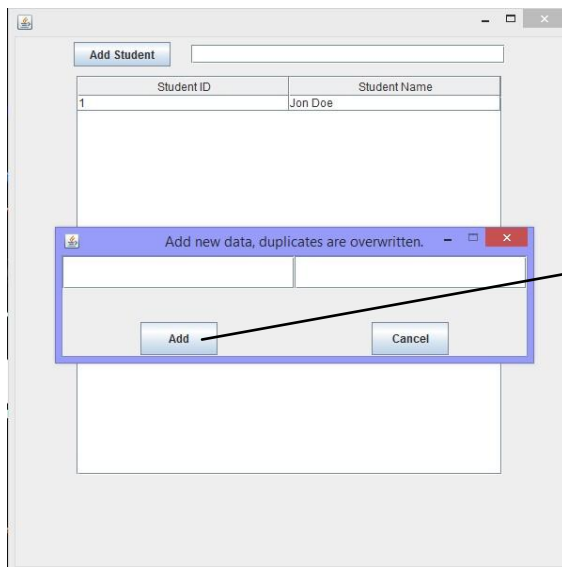- A program, when starts, looks like:

A search field used to input a student ID in order to find its matching student name.
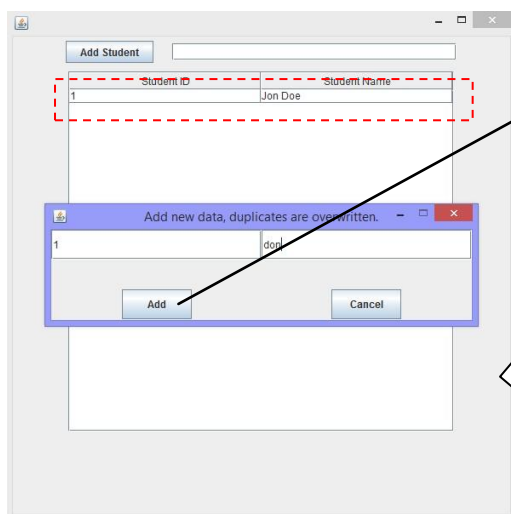
Table that displays content of a **map data structure** storing pairs of (studentID, student name).

A button used when we want to add a new pair of (studentID, student name).
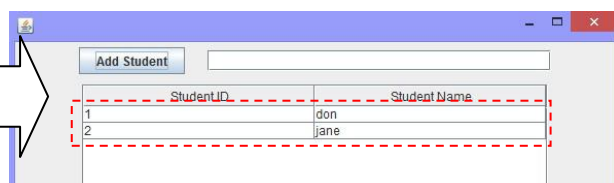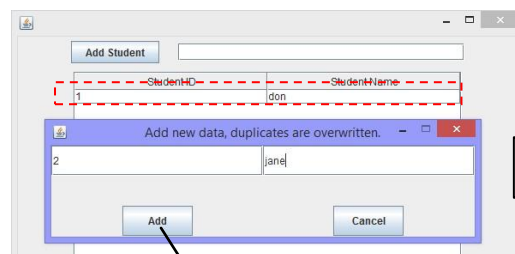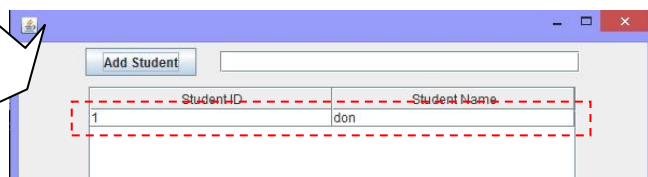
- When the Add button is clicked a program displays a self-made dialog. It works like the following:

If this button is clicked while either of the text field in the dialog is empty, nothing happens. The screen will remain like what is shown on the left.
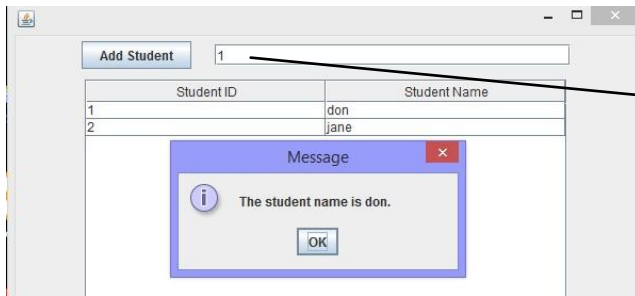

If the button is clicked when the first text field has an existing key, the program **overwrites data in the map** and updates the table. (You can assume that data in the first text field is always an integer and data in the second text field is always a string). The text fields in the dialog must be cleared and the dialog itself must disappear.
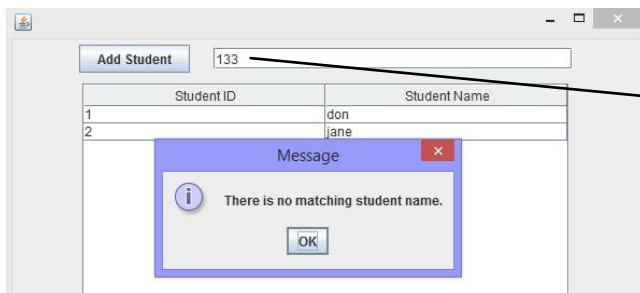

When the new data has a new key, the program **adds the new data to the map** and redraws the table accordingly. The text fields in the dialog must be cleared and the dialog itself must disappear.
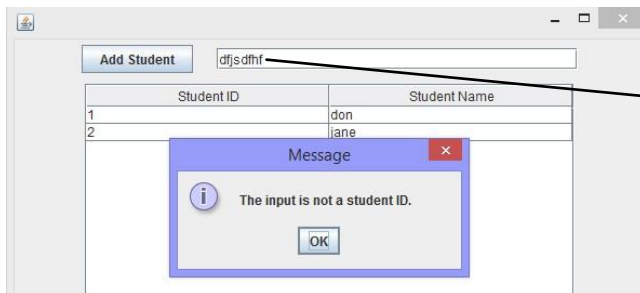
- When Enter key is pressed in the search field, if the search field is empty, do nothing.
- For other cases:

If the text is one of the keys in the map, open a dialog window showing the value (student name) associated with that key **from that map**.

If the text is an integer, but not one of the keys **in the map**, open a dialog window showing that there is no matching student name.

Otherwise, open a dialog window showing that the input is not a student ID.

5. How to submit

- Put all of your files in package com.lab05.inClass
- Put comment at the top of your source file showing both of your student IDs and names.
- Export the package as ID01_ID02_lab05_inClass.jar, where ID01 and ID02 are your IDs.
- Make sure that you have your .java and .class files in the exported jar file.
- Submit the jar file via courseville **by 24 Sep 2014**.