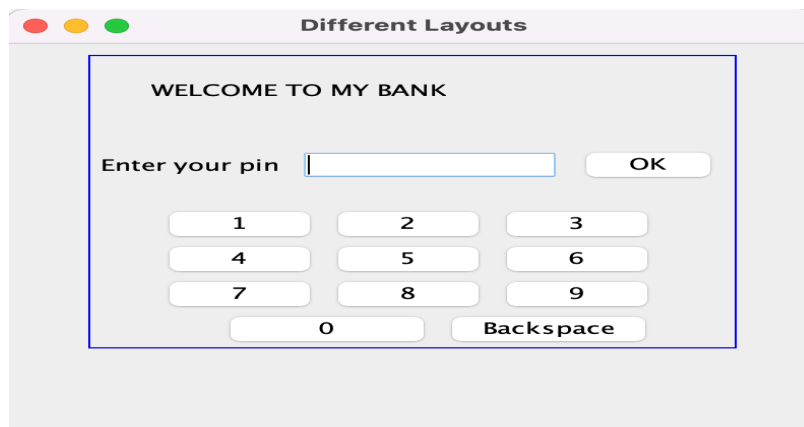


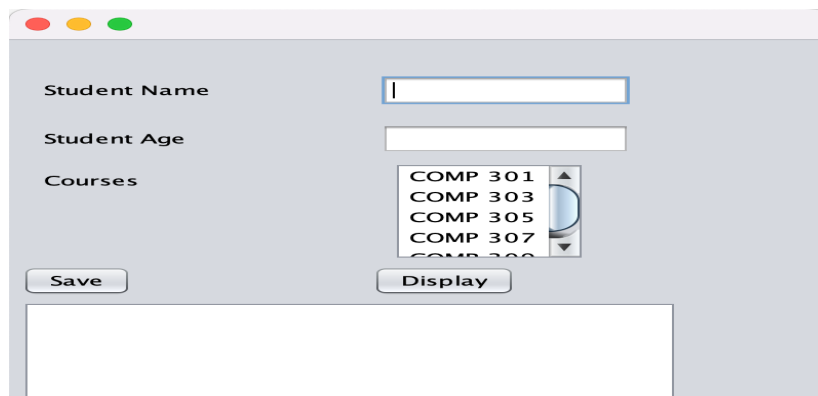
Sheet 7

Objective: upon successful completion of this sheet, students should be able to learn about Swing components, design a frame, add components to the frame, manage the layouts of the added components, and handle events related to GUI components.

1. Design the following JFrame without using a GUI builder tool, specifying the different layouts used for various controls.



2. Design a JFrame that looks like the figure below.



The text fields are intended for data entry, while the list control is used for selecting a set of courses. By clicking the “Save” button, the entered data is stored in an array, and all components are cleared from data or choices. Clicking the “Display” button will show the data stored in the array in the text area, as illustrated in the following figure.

Name	Age	Courses
Ahmed	20	[COMP 301, COMP 305]
Amr	19	[COMP 303, COMP 307, COMP 309]
Hager	20	[COMP 301]

3. Modify the code from the previous question so that the entered data in the text fields and the selected set of courses are stored in an object of type “Student”, which has name, age, and a list of courses as its data members.

Additionally, include two more buttons: one for searching for a student and the other for deleting the student’s data. The same provided controls fields can be used for searching and deleting the student.

4. Design a JFrame that adds and stores entries in the text fields into a list of objects of type “Student”, where each student object has name and age as data members. The JFrame looks like the following figure. The text area is used to display the results of sorting based on the selected field and whether the sorting order is ascending or descending.

5. Design a JFrame that displays the mouse position relative to both the screen and the window as the user hovers over the frame using an anonymous inner class as an adapter class for handling mouse events.