Arab Academy of Science and Technology and Maritime Transport

COLLEGE OF ENGINEERING & TECHNOLOGY

Computer Engineering Department

Course: **Object Oriented Programming**
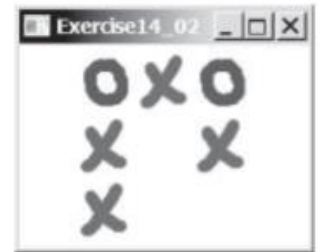
Course Code: **CC316**

Sheet No.: **6**

Note: The image files used in the following programs can be obtained from www.cs.armstrong.edu/liang/intro10e/book.zip under the image folder.

1. Write a program that displays four images in a grid pane, as shown in Figure

2. Write a program that displays a tic-tac-toe board, as shown in Figure. A cell may be X, O, or empty. What to display at each cell is randomly decided. The X and O are images in the files **x.gif** and **o.gif**.

3. Write a program that displays five texts vertically, as shown in Figure. Set a random color and opacity for each text and set the font of each text to Times Roman, bold, italic, and 22 pixels.

4. Write a program that displays a string Welcome to Java around the circle, as shown in Figure. Hint: You need to display each character in the right location with appropriate rotation using a loop.

5. Write a program that uses a bar chart to display the percent- ages of the overall grade represented by projects, quizzes, midterm exams, and the final exam, as shown in Figure. Suppose that projects take **20** percent and are displayed in red, quizzes take **10** percent and are displayed in blue, midterm exams take **30** percent and are displayed in green, and the final exam takes **40** percent and is displayed in orange. Use the **Rectangle** class to display the bars.