Lab 7

Learn about Single-Dimensional Arrays: how to create, fill, and search through arrays.

In this Lab, you will get practice with creating arrays and initializing them (filling them with values). Activities also include concepts such as searching through the arrays using both the index position and/or element value. Pay attention to how loops are related to each of these topics.

Pre Lab

- Read Chapter 7
- Do Self-Check Questions
  - Focus on the following sections:
    7.1 7.2 7.6 7.7 7.10
- Watch the following videos:
  - Look at the case study 7.3 and 7.4 and understand the concept of how arrays are initialized.
  - Look at the example and Animation on 7.10 on how to search elements from the Array.
- Finish the following Exercise Sets:
  - 7.2 7.5 7.6 7.7 7.10
- **Make sure to review the "Key Terms" and "Chapter Summary" frequently and especially before every Lab Session**

In-Lab Activities

You will receive this section during lab. ☺

There will be **Guided Inquiry** questions in chat bubbles located next to various Lab Activities. You must answer these questions for those particular Activities. **Don't forget to bring your notebook.**

Post Lab

Revel Work

- Chapter 7 Programming Project

Programming Project: Card Game

The 7.4 Case Study in the Revel Textbook may be helpful.

Based on what you learned in the lab, make a card game that asks the user to pick a number from a normal 52 card deck. Next, the computer picks a random number between 0 to 51 (another card from the deck, but not the one the user chose). The program should then display whose card was highest.

As a second part to the program, create an "auto play" mode, where two computers play against each other. Like the first part, each computer randomly picks a card and a message declares the one with the highest card. Have the deck shuffled every turn, and allow the two computers to play 100 times before quitting. Once

they have played 100 times, display the winner of the whole game (who had the most wins out of 100 turns), or if it ended in a draw.

Have each part in its own separate method, and allow the user to choose between Part 1 or Part 2, for testing purposes.

Important Concepts

Answer the following question on Canvas. There will be a text submission area for Post Lab 7 – answer this question there.

1. How are arrays beneficial in terms of holding or managing the data?
2. How are arrays and loops used together?