

Week 7 Labs: Arrays

Lab Exercise 1:

- Use a one-dimensional array to solve the following problem: Write an application that inputs five numbers, each of which is between 10 and 100, inclusive. As each number is read, display it only if it is not a duplicate of a number already read. Provide for the “worst case,” in which all five numbers are different. Use the smallest possible array to solve this problem. Display the complete set of unique values input after the user inputs each new value.

Problem-Solving Tips

1. Initialize the integer array numbers to hold five elements. This is the maximum number of values the program must store if all values input are unique.
 2. Remember to validate the input and display an error message if the user inputs invalid data.
 3. If the number entered is not unique, display a message to the user; otherwise, store the number in the array and display the list of unique numbers entered so far.
 4. If you have any questions as you proceed, ask your lab instructor for assistance.
- Modify the program in *Lab Exercise 1* to input 30 numbers, each of which is between 10 to 500, inclusive.
 - Modify the program in *Follow-Up Question 1* to allow the user to enter numbers until the array is full.

Lab Exercise 2:

Write an application that runs 1000 games of craps and answers the following questions:

- a) How many games are won on the first roll, second roll, ..., twentieth roll and after the twentieth roll?
- b) How many games are lost on the first roll, second roll, ..., twentieth roll and after the twentieth roll?
- c) What are the chances of winning at craps? [Note: You should discover that craps is one of the fairest
- d) casino games. What do you suppose this means?]
- e) What is the average length of a game of craps?

The source code for the template is available in content section of D2L.