# Homework 9

CSC-121, Fall 2025

Submission Instructions: Create a single text file for your answers (Use .txt or .pdf) with your name and ID number at the top. Include code written for any programs, and type-written answers to non-coding questions. Submit the file on Canvas to complete the assignment. You may work in groups or use genAI help, but written answers must be in your own words.

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## Q0. CodePath Mid-Semester Survey

How do you feel that the semester has been going so far? Please let us know in the mid-semester survey. This will help the teaching staff by providing feedback on what we could do to make the course better.

Survey Link: https://www.surveymonkey.com/r/cir-fall25-mc

## Q1. Multiple Choice & True/False

Select only the best answer for each question. There is only one correct answer. You do not need to explain your choice.

1.  Each element of an array is accessed by a number known as a(n) _____.
    a.  subscript
    b.  size declarator
    c.  address
    d.  specifier

2.  The first subscript in an array is always _____.
    a.  1
    b.  0
    c.  21
    d.  1 less than the number of elements

3.  The last subscript in an array is always _____.
    a.  100
    b.  0
    c.  21
    d.  1 less than the number of elements

4.  This array field holds the number of elements that the array has.
    a.  a. size
    b.  b. elements
    c.  c. length
    d.  d. width

# Q3. Short Answer

1. Look at the following array definition:

   ```
   int[] values = new int[10];
   ```

   a. How many elements does the array have?
   b. What is the subscript of the first element in the array?
   c. What is the subscript of the last element in the array?

2. Look at the following array definition:

   ```
   int[] values = { 4, 7, 6, 8, 2 };
   ```

   What does each of the following code segments display?

   ```
   System.out.println(values[4]);
   ```
   a. _____

   ```
   x = values[2] + values[3];
   System.out.println(x);
   ```
   b. _____

   ```
   x = ++values[1];
   System.out.println(x);
   ```
   c. _____

# Q4: Programming

1. Suppose you have the following set of quiz scores of students in a class.

   QUIZ  SCORES
   _____

   Amanda:     80
   Jose:       82
   Carlos:     91
   Sarah:      76
   Fred:       72

   Write a program that places the quiz scores in a decimal value array. Then, calculate the class's average score.

   To calculate an average: Use a loop to add up all of the quiz scores, then divide the total by the number of quiz scores. Do not just divide the total by the literal value 5.0 - Instead, divide by the array's "length" field value. The average with the values above should be around 80.2. Then, try making your array larger by adding more values. Do you continue to get the correct results?

2. The variables numberArray1 and numberArray2 reference arrays that each have 10 elements. Write code that copies the values in numberArray1 to numberArray2.

3. In a program you need to store the populations of 12 countries.

   a. Define two arrays that may be used in parallel to store the names of countries and their capital city.

      Example:
      Countries array: "United States", "Mexico", "Canada"
      Capitals array: "Washington DC", "Mexico City", "Ottawa"

   b. Write a loop that uses these arrays to print each country's name and its capital.

      Example:
      Country: United States - Capital City: Washington DC
      Country: Mexico - Capital City: Mexico City
      Country: Canada - Capital City: Ottawa