COMP2026 Problem Solving Using Object Oriented Programming

# Laboratory 5

**Part A Discovery Exercises**

**Task 1: More about Arrays**

Given the following arrays.

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| int[] array1 = {1, 2, 3};  int[] array2 = {4, 5, 6};  int[] array3 = {7, 8, 9}; |

1. What are the values inside the arrays after running the following code fragment?

|  |
| --- |
| array1[0] = 10;  array2[1] = 20;  array3[2] = 30; |

Answer:

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| --- |
| array1 = {10, 2, 3};  array2 = {4, 20, 6};  array3 = {7, 8, 30}; |

1. What are the values inside the arrays after running the following code fragment?

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| --- |
| array3 = array1;  array1[0] = 40;  array2[1] = 50;  array3[2] = 60; |

Answer:

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| array1 = {40, 2, 60};  array2 = {4, 50, 6};  array3 = {40, 2, 60}; |

1. Given the following arrays.

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| int[] array1 = {1, 2, 3};  int[] array2 = {4, 5, 6};  int[] array3 = {7, 8, 9}; |

What are the values array3[array1[0]] and array3[array1[1]]?

Answer:

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| array3[array1[0]]=8 array3[array1[1]]=9 |

**Task 2: Two-Dimensional Arrays**

Given a two-dimensional integer array **y**.

1. Write statements to print the size of **y**. You have to print the number of rows and the number of columns in each row.

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| int rownum = 0; int row = 0; int column = 0; for(int i=0; i<y.length; i++){  row++;} System.*out*.println("The number of rows is : "+row);  for (int k=0; k<y.length; k++){  rownum++;  System.*out*.println("Row "+rownum +" have "+y[k].length+ " Columns");  }  } |

1. Write statements to print all the elements of a 2D array **y** in table format.

For example, if **y** is {{1, 2, 3}, {4,5,6}}, then the result will be printed as follows:

**1 2 3**

**4 5 6**

|  |
| --- |
| int[][] y = {{1, 2, 3}, {4, 5, 6}}; int count = 0; for (int i = 0; i < y.length; i++) {  for (int j = 0; j < y[i].length; j++) {  System.*out*.print(y[i][j] + " ");  count++;  if(count % 3 == 0) {  System.*out*.println();  count = 0;  }  } } |

1. Write statements to compute and print the average value of all the elements in an integer 2D array **a**.

|  |
| --- |
| double count= 0 ; double sum = 0; for (int i = 0; i < a.length; i++) {  for (int j = 0; j < a[i].length; j++) {  sum += a[i][j];  count++;  }  }  System.*out*.print(sum/count); |

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