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Problem Set 19.5

AP Comp Sci

**Fundamentals of Java, page 459, Exercise 12.4, Problems 1, 2, 3, 4, and 5**

1. What are two-dimensional arrays?
   1. Arrays which store data in both rows and columns.
2. Write a code segment that declares a variable to reference an array of integers with 10 rows and 20 columns and assigns this variable a new array object.
   1. int[] array = new int[10][20];
3. Write a code segment that searches a two-dimensional array for a negative integer. The loop should terminate at the first instance of a negative integer in the array, and the variables row and col should be set to its position. Otherwise, if there are no negative integers in the array, the variables row and col should equal the number of rows and columns in the array (we assume that each row has the same number of columns).

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| --- |
| Boolean condition = false;  for(int row = 0; row < newArray.length; row++){   for (int col = 0; col < newArray[row].length; col++){   if (newArray[row][col] < 0){  condition = true;  if(condition == true) {  break;  } } |
|  |

1. Describe the contents of the array after the following code segment is run: intƒ[][]ƒmatrixƒ=ƒnewƒint[5][5];

for (int row = 0; row < matrix.length; row++)

for (int col = 0; col < matrix[row].length; col++) matrix[row][col] = row \* col;

1. The array contains the product of multiplying each term in the array (Each column by each row).
2. Write a code segment that outputs the integers in a two-dimensional array named table. The output should begin each row of integers on a new line.

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| --- |
| for(int row = 0; row < table.length; row++) {  for(int col = 0; col < table[row].length; col++) {  System.out.print(table[row][col]);  }  System.out.println(""); } |

**Fundamentals of Java, page 546, Exercise 14.3, Problems 1 and 2**

1. Write a method sum that expects a List<Integer> as a parameter. The method returns an int representing the sum of the integers in the list.

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| --- |
| public static int sum (List<Integer> list) {  int total = 0;  for (int i: list) {  total = total + i;  }  return total; } |

1. Write an index-based loop that prints the contents of a list.

|  |
| --- |
| while iteratorObject.hasNext(){   String s = iteratorObject.next();   System.out.println(s);  } |