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| **Date Assigned: 2/2/16** | **Date Due: 2/4/16** |
| **Unit:** Language Basics | **Turn In List:** **1. This document** |
| *“I will understand and implement arrays (or lists) in an application.”* | |

**Title: Arrays and Multidimensional Arrays**

**Content Objectives:** Students will familiarize themselves with creating, initializing, and editing arrays.

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| **Starter Activity** |
| Include code for creating an array (or list) of integers called nums and setting the values within the array to a range of numbers 0-9.  public class Test {  public static void main(String []args) {  int[] nums = {0,1,2,3,4,5,6,7,8,9};  for (int i = 0; i<nums.length; i++) {  System.out.println(nums[i]);  }    }  } |

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| **Assignment:** |
| Students will use the following websites and internet searches to complete the table below:  Java: <http://www.tutorialspoint.com/java/java_arrays.htm>  C++: <http://www.cplusplus.com/doc/tutorial/arrays/>  Python: <http://www.tutorialspoint.com/python/index.htm> Lists, tuples and dictionaries  C#: <http://www.tutorialspoint.com/csharp/csharp_arrays.htm> |

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| **Include Sample Code Concepts Below (copy and paste lines from editor)** | |
| Include code for updating only the first position of the array in the starter activity to the value of 5 | public class Test {  public static void main(String []args) {  int[] nums = {0,1,2,3,4,5,6,7,8,9};  nums[0] = 5;  for (int i = 0; i<nums.length; i++) {  System.out.println(nums[i]);  }    }  } |
| What is the syntax for printing the entire array in the starter activity | public class Test {  public static void main(String []args) {  int[] nums = {0,1,2,3,4,5,6,7,8,9};  //nums[0] = 5;  for (int i = 0; i<nums.length; i++) {  System.out.println(nums[i]);  }    }  } |
| What is the syntax for printing only the second position in the starter activity | public class Test {  public static void main(String []args) {  int[] nums = {0,1,2,3,4,5,6,7,8,9};  //nums[0] = 5;  System.out.println(nums[1]);    }  } |
| What is the syntax for creating an empty integer array (or list) named myList | public class Test {  public static void main(String []args) {  int[] nums = new int[10];  //nums[0] = 5;  System.out.println(nums[1]);    }  } |
| What is the syntax for populating the myList array (or list) with sequential numbers 1-99 | public class Test {  public static void main(String []args) {  int[] myList = new int[99];  for (int i = 0;i<myList.length; i++) {  myList[i] = i+1;  System.out.println(myList[i]);  }    }  } |
| What is the syntax for populating myList with random numbers | import java.util.Random;  public class Test {  public static void main(String []args) {  int[] myList = new int[99];  Random rand = new Random();  for (int i = 0;i<myList.length; i++) {  myList[i] = rand.nextInt(55);  System.out.println(myList[i]);  }    }  } |
| What is the syntax for retrieving a random value from within an array or list | import java.util.Random;  public class Arrays {  public static void main(String []args) {  int[] myList = {0,1,2,3,4,5,6,7,8,9};  Random rand = new Random();  for (int i = 0; i<myList.length; i++) {  int n = rand.nextInt(10);  System.out.println(myList[n]);  }  }  } |

Psuedocode an app that simulates a dice roll with at least one array (or list) called dice1 and allows the user to run it to produce a random value from dice.

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| Enter value for number of dice  For every number of dice, print the dice number  Print a random value between 1-6 |

Code an app that at least meets the requirements for the above psuedocode but also allows the user to select a set number of dice to roll. Try creating a method to simulate the dice roll.

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| import java.util.Random;  import java.util.Scanner;  public class Arrays {  public static void main(String []args) {  System.out.println("Enter number of dice: ");  Scanner scanner = new Scanner(System.in);  int nofdice = scanner.nextInt();  int[] myList = new int[nofdice];  Random rand = new Random();  for (int i = 0; i<myList.length; i++) {  System.out.println("Dice number: " + i);  System.out.println(rand.nextInt(7));  }  }  } |