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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** |
| float nums[] = new float [10];  int a=0;  while (a>nums.length)  {  nums[a]=a;  a++; } |
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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 | float[] g = new float[5]  g[0]=5; |
| What is the syntax for printing the entire array in the starter activity | float nums[] = new float [10];  int a=0;  while (a<nums.length)  {  nums[a]=a;  a++; }  System.out.println(Arrays.toString(nums)); |
| What is the syntax for printing only the second position in the starter activity | float nums[] = new float [10];  int a=0;  while (a<nums.length)  {  nums[a]=a;  a++; }  System.out.println(nums[1]); |
| What is the syntax for creating an empty integer array (or list) named myList | int [] myList= null; |
| What is the syntax for populating the myList array (or list) with sequential numbers 1-99 | int a=0;  while (a<99)  {  myList[a]=a+1;  a++; } |
| What is the syntax for populating myList with random numbers | **float** myList[] = **new** **float** [100];  **int** a=0;  **while** (a<myList.length)  {  myList[a]=(**float**) (Math.*random*()\*100);  a++;  } |
| What is the syntax for retrieving a random value from within an array or list | int a=(**int**) (Math.*random*()\*(myList.length-1));  System.***out***.println(myList[a]+" "+a); |

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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| Ask for the sides and amount of dice. Go to a method and make multidimensional array. |

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.\*;  **public** **class** Dice  {  **public** **static** **void** main(String[] args)  {  Scanner input = **new** Scanner(System.***in***);  System.***out***.println("How many dice would you like to roll");  **int** dice,sides;  dice=input.nextInt();  System.***out***.println("How many sides would you like to have on your dice");  sides=input.nextInt();  *dice*(dice,sides);  }    **static** **void** dice(**int** dice,**int** sides)  {  **int**[][] nums = **new** **int** [dice][sides];  **int** a=0;  **int** b=0;  **while** (a<nums.length)  {  **while** (b<nums[1].length)  {  nums[a][b]=b+1;  b++;  }  b=0;  a++;  }  a=0;  **while** (a<nums.length)  {  b=(**int**) (Math.*random*()\*nums[0].length);  System.***out***.println("On dice "+(a+1)+" the value was "+nums[a][b]);  a++;  }    }  } |