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| **Date Assigned: 2/6/17** | **Date Due: 2/8/17** |
| **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.  Nums[10] |

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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 | Nums[0] = 5; |
| What is the syntax for printing the entire array in the starter activity | int main () {  int nums[] = {0,1,2,3,4,5,6,7,8,9};  cout << nums << endl;  } |
| What is the syntax for printing only the second position in the starter activity | int main () {  int n[ 10 ];    for ( int i = 0; i < 10; i++ ) {  n[ i ] = i + 1;  }  cout << n << endl;  } |
| What is the syntax for creating an empty integer array (or list) named myList | int main () {  int mylist[] = {0,1,2,3,4,5,6,7,8,9};  cout << mylist << endl;  } |
| What is the syntax for populating the myList array (or list) with sequential numbers 1-99 | int main () {  int mylist[] = {1-99};  cout << mylist << endl;  } |
| What is the syntax for populating myList with random numbers | Hint: you may need an import or include statement…  int main () {  int mylist[] = {1-99};  for(int i = 0; i < 100; i++){  int rand(mylist[i]);  cout << mylist[i] << endl;  }    return 0;  } |
| What is the syntax for retrieving a random value from within an array or list | Hint: you may need an import or include statement… |

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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| Make number of dice and number of sides |

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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| #include <iostream>  #include <array>  #include <vector>  #include <ctime>  #include <cstdlib>  using namespace std;    int main () {  srand(time(0));  int numSide;  int numDice;    cout << "how many sides on the dice" << endl;  cin >> numSide;  cout << "how many dice" << endl;  cin >> numDice;    int mylist[] = {numSide};  for(int i = 0; i < numDice; i++){  mylist[i] = i+1;  cout << "you rolled:" <<mylist[i] << endl;  }    array <int,121>diceArray;    int i = 1;  while(i <= numDice) {  int n = rand() % numSide;  cout << diceArray[n] << endl;  i++;  }    return 0;  } |