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| **Date Assigned: 1/21/16** | **Date Due: 1/21/16** |
| **Unit:** Language Basics | **Turn In List:** **1. This document** |
| *“I will start to familiarize myself with a basic application framework, data types, decision making, looping and plan my own basic application.”* | |

**Title: Title**

**Content Objectives:** Students will familiarize themselves with syntax for common language methodology learned in semester one while studying a different language.

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| **Starter Activity** |
| Include code for a **runnable** “hello world” application in your new language below, in this box: see  <https://en.wikibooks.org/wiki/Computer_Programming/Hello_world>  !!INCLUDE CODE HERE!!  #include <iostream>  int main() {  cout << “Hello World!” << endl;  return 0;  } |

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| **Assignment:** |
| Students will use the following websites to complete the table below:  Java (Use DrJava): <http://www.tutorialspoint.com/java/index.htm>  C++ (Use Bloodshed or XCode): <http://www.tutorialspoint.com/cplusplus/index.htm>  Python (Use Idle): <http://www.tutorialspoint.com/python/index.htm>  C# (Use Visual Studio): <http://www.tutorialspoint.com/csharp/index.htm>  Note: if your editor is NOT functioning on your computer, use the web-based version on <http://www.tutorialspoint.com/codingground.htm> |

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| **Include Proper Syntax for the Concepts Below** | |
| Create a number variable called num1 with no decimals and set it to 10 | int num1 = 10; |
| Create a number variable called num2 with decimals and set it to 3.14 | float number = 3.14; |
| Create a text variable called firstName and set it to your first name | string firstName = “Sam”; |
| Find a data type for the value  -9,223,372,036,854,775,808 and set it with the name bigNum | long long bigNum = -9,223,372,036,854,775,808; |
| Create variables named a, b, c, d in one statement, then set them to large random decimal numbers between one and 100,000 in another statement (Python you can do this in one statement) | int a,b,c,d;  a = rand() % 100 +1;  b = rand() % 100 +1;  c = rand() % 100 +1;  d = rand() % 100 +1; |
| Create an if statement that checks the value of a number variable and prints “greater than half” when value is more than half and “less than half” when the value is smaller than half | using namespace std;  int i = 20;  if(i > 10) {  cout << “greater than half” << endl;  } else if (i < 10) {  cout << “less than half”” << endl;  } |
| Create a while loop that prints the numbers 1 to 20 | using namespace std;  int i = 20;  while(i < 20) {  cout << i << endl;  i++;  } |
| Create a for loop that prints the numbers 1 to 20 | using namespace std;  for(int i = 0; i < 20; i++ {  cout << i << endl;  } |
| Create two string variable with words “Hello” and “World” as values and print them to the console with a concatenation | using namespace std;  string str1 = “Hello”;  string str2 = “World”;  cout << str1 << str2 << endl; |

Psuedocode a “99 Bottles” that checks for plural bottles.

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| #include <iostream>  using namespace std;  int main() {  for(int i = 99; i >= 2; i--) {  cout << i << " bottles of juice on the wall." << endl;  }  for(int i = 1; i >= 1; i--) {  cout << i << " bottle of juice on the wall." << endl;  }  } |

Code a ***working*** “99 Bottles” app and include code to check for plural bottles.

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| Upload your code to the 99Bottles directory in Github and include a URL to the source file in this box. File name should be formatted with initials, 99Bottles and the proper file extension (i.e. .java, .cpp, and .py) |