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| **Date Assigned: 2/16/16** | **Date Due: 2/18/16** |
| **Unit:** Language Basics | **Turn In List:** **1. This document** |
| *“I will understand and implement sequential file access.”* | |

**Title: Sequential File Access**

**Content Objectives:** Students will become familiar with how to access, read, write and manipulate external data.

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| **Starter Activity** |
| Research the difference between [sequential](http://en.wikipedia.org/wiki/Sequential_access) and [random](http://en.wikipedia.org/wiki/Random_access) file access:  Sequential file access allows data to be read from or written to a file from beginning to end. Random access files permit random access to a file's contents. You can "seek" to any particular location within a file. |

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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_files_io.htm>  C++: <http://www.tutorialspoint.com/cplusplus/cpp_files_streams.htm>  C#: <http://www.tutorialspoint.com/csharp/csharp_file_io.htm>  Python: <http://www.tutorialspoint.com/python/python_files_io.htm> and the final lesson of CodeAcademy |

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| **Include Sample Code or Explanation for the following Concepts Below (copy and paste lines from editor)** | |
| What is the proper syntax for opening a file stream? | FileReader in = null;  in= new FileReader("C:/Users/9525651/Programming\_1\_YEE/output.txt"); |
| What is the syntax writing to a file? | FileWriter fW;  int c = 0;  c = in.read();  while (c != null) {  fW.write(c);  } |
| What is the proper syntax for closing a file stream? | in.close(); |
| Where must the file reside in relation to your source code? | In the same directory |
| List and describe three modes or methods specific to your language that deal with writing or reading info to a file. | FileReader for text files in your system's default encoding  FileInputStream for binary files and text files that contain 'weird' characters.  BufferedFileReader reads line by line. |

Psuedocode an app that draws randomly from a string array of 10 open-ended thought provoking questions, whose answer is typed to the console by the user and stored in an “output.txt” file with question before it.

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| Initialize array and set each one to a question. Choose random question. Get user input and store to output.txt file. |

Divide and conquer! Group leads may break the app into code blocks that accomplish small portions of the functionality mentioned above in pseudocode. Group leads will then take submissions through GitHub to piece together the master code for the group!

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| |  | | --- | | import java.io.\*; | |  |  | |  | public class WritetoFile | |  | { | |  | public void write(String question,String answer) throws IOException | |  | { | |  | FileWriter out = null; | |  | out = new FileWriter("//gsdstudents08/2018/9525647/output.txt"); | |  | try | |  | { | |  | int c=0; | |  | while (c<question.length()) | |  | { | |  | out.append(question.charAt(c)); | |  | c++; | |  | } | |  | c=0; | |  | out.append(" "); | |  | while (c<answer.length()) | |  | { | |  | out.append(answer.charAt(c)); | |  | c++; | |  | } | |  | } | |  | finally | |  | { | |  | out.close(); | |  |  | |  | } | |  | } | |  |  | |  | } |  |  | | --- | | import java.util.Scanner; | |  | import java.io.IOException; | |  | public class Questions { | |  |  | |  | public static void main(String[] args) throws IOException { | |  | String[] questions = new String[10]; | |  | questions[0] = "What is the meaning of life?"; | |  | questions[1] = "Why do cows say 'MOO'?"; | |  | questions[2] = "What is wrong with Andy?"; | |  | questions[3] = "What is the airspeed velocity of an unlaiden swallow?"; | |  | questions[4] = "What type of swallow is non-migratory and could carry a coconut?"; | |  | questions[5] = "What does Buttercup realize Wesley means when he says 'as you wish'?"; | |  | questions[6] = "For most of American history, Americans sought to resolve their political conflicts through compromise. \nBut by 1860, this no longer seemed possible. \nAnalyze the reasons for this change."; | |  | questions[7] = "What 'S' shaped letter comes between 'R' and 'T'"; | |  | questions[8] = "What is the formula for the angular momentum of a pendulum?"; | |  | questions[9] = "Who is Andre the Giant?"; | |  | int x = (int) (Math.random()\*questions.length); | |  | System.out.println(questions[x]); | |  | Scanner input = new Scanner(System.in); | |  | String ans = input.nextLine(); | |  | WritetoFile w = new WritetoFile(); | |  | w.write(questions[x], ans); | |  | } | |  | } | |