LabReport01 – Paksh Patel

1. **Problem**
   - A scrambled list of 100 words needs to be sorted by vowels, consonants, and by length of the word.

2. **Solution Description**
   - The solution is to make a new project that has three main methods sortByVowels, sortByConsonants, and sortByLength.
   - The sortByVowels and sortByConsonants will use one more method each to count the number of vowels(numOfVowels) and consonants(numOfCons).
   - Each numOf… will have the letter I am looking for specified.
   - Each sortBy… will also have bubble sorts to sort the list for the main program to print.
   - Each sortBy… method will be stored and used in the main java file, WordSorterFrontEnd.

3. **Problems Encountered**
   - I was struggling to get the bubble sort to work, missed an i or a while line of code.
   - Mostly every error I had were syntax errors.

4. **What are the advantages of using an array?**
   - It allows for all the words to be stored within java and easily sorted within an array.

5. **What are the disadvantages of using an array?**
   - It makes the user write an extra line of code that make a copy of the original array in every sortBy method, so that the program can use the original array.

6. **Describe the range of valid indices for an array?**
   - Valid indices are from 0 through (the number of elements in an array) – 1.
   - This is an index number/amount.

7. **Code Snippet 1**
   - This code has a syntax error because the code is trying to store "a"+i in the char array abcs[i]. "a"+i is a string variable, therefore cannot be stored in a char.
   - To fix this, I would get rid of the array and first make a string variable that stores the alphabet. Then have a for loop that then includes a char variable to print each letter until the end.

8. **Code Snippet 2**
   - This code did not have any errors but simple syntax mistakes that would not allow the code to print what it is supposed to. The code present will work but will never end nor print anything.
   - To fix this I would split the divisible by 4 and 5 code and make the i in the end of the for statement to i++.

9. **Code Snippet 3**
   - To fix this code you would need change the code to create a new array then have a for loop and return said array to ret. So you would need to add and int[] array named ret.

10. **Code Snippet 4**
    - This code is error free and prints the full array first then the array with each number doubled.