**Coding Challenge – Dilan De Silva**

Out of the two coding challenges, I have chosen the **1-800 Coding Challenge** as I thought it would be an exciting problem to solve. I have encountered many instances where an advertisement or poster mentioned a telephone number using the corresponding letters and haven’t given much thought until now on how that could be done programmatically, therefore after reading this challenge I thought of giving it a go.

**The approach**

Initially, the dictionary file is read and is put into a map with the key as the corresponding encoded numbers and the value as a list of matching words to that number. Then, the number list is read into an array list. Afterwards, each number of the number list is fed to the get method of the map and checked if any words are returned for that number key. The matched are then loaded on to the POJO dedicated to holding the results and that POJO is then iterated to printout the results.

**Compiling and running the application**

Change the value of the “defaultDictionaryLocation” property (In com.dilan.aconex.util.Constants.java) to point to the location of your default dictionary file. (A file is provided in the root of the project folder.)

*If you plan on executing the J-Unit tests*, change the value of the “testDictionaryLocation”, “testNumberListLocation” properties (in com.dilan.aconex.TestConstants.java) to point to the location of your test dictionary and test number list files. (These files are provided in the root of the test folder structure)

* **Command Line**

1. Navigate to: ***1800CodingChallenge\src\com\dilan\acone***
2. Issue the following command: ***javac api/\*.java exception/\*.java util/\*.java PhoneNumberConverter.java -d classes***
3. Navigate to: ***1800CodingChallenge\src\com\dilan\aconex\classes***
4. Issue the following command: ***java -cp ../classes com.dilan.aconex.PhoneNumberConverter <PATH\_TO\_THE\_NUMBERS\_FILE>***OR you could give your own dictionary file as below (If you don’t specify a dictionary, the program will use a default dictionary):   
     
   Issue the following command: ***java -cp ../classes com.dilan.aconex.PhoneNumberConverter –d “<PATH\_TO\_THE\_DICTIONARY\_FILE>” “<PATH\_TO\_THE\_NUMBERS\_FILE>”***

* **Eclipse**Import the project into your workspace and run the PhoneNumberConverter.java class as a java program.

**Notes**

* I have run **emma** on the project to make sure the desired test coverage is achieved; I have included the coverage report along with the J-Unit test results with my answer. (Screenshots)
* The classes with low coverage are either classes containing constants or classes that print the output to the users.
* I have run **findbugs** on the project and made sure that there are no major/minor issues in the code.
* I have used “OpenPOJO” to test the POJOs without writing unit tests for each and every POJO.