

CS 2, Fall 2015
Dr. Gurka

CS 2 Cover Letter

Name: Sergiy Kolodyazhnyy
Assignment: Project 2, Soundex
Date submitted: 09/14/2015
Total time: Approx 14 – 16 hours

On time or late? On time
GOOJF? no

Did you collaborate with any classmates on this project? No
If yes, who and what did you work together on?

Did you get any tutoring or similar help on this project? Explain.

How'd it go?

What went well?

Right from the beginning I knew to use switch-case structure, so converting user input to numeric index wasn't a problem and I got it right away.

What problems did you have?

The biggest challenge was figuring out logic for removing duplicates. Even though it was fairly simple, I've spend some time on it.

What did you learn new?

Substring method was new to me. I've used it with awk scripting, however it's the first time I've used in Java. Also equalsIgnoreCase. Otherwise, I've relied mostly on my knowledge gained in CS1

Any remaining questions?

Other comments on the project?

Small comment on the output of the program. The test surnames for user input from keyboard were all taken from "Soundex examples" handout given in class. The output is recorded with the *script* Linux command. It much simpler than taking multiple screenshots of the command line.

If this project is late, what is not included or not working correctly?

Other discussions as specified with the project.

Driver class

```
1  /*****
2  Author: Sergiy Kolodyazhnyy
3  Date: 09/14/2015
4  Instructor: Prof.Gurka
5  Purpose: Program for generating Soundex code
6           for surnames
7  *****/
8
9  import java.io.File;
10 import java.io.IOException;
11 import java.util.Scanner;
12
13 public class cs2hw2Driver
14 {
15
16     /*****
17     The control flow of the main method is fairly straightforward.
18     As required in the point #3 of the assignment, the program
19     starts with first phase, where user manually enters names, until
20     they enters "nextphase" in order to go to phase 2.
21     Phase 2 is where the user is prompted to enter file or path to file
22     that will be analyzed.
23
24     As stated in the requirements, the driver class merely creates
25     the object, and the driver then calls getSoundex method in
26     both cases.
27     *****/
28     public static void main(String[] args) throws IOException
29     {
30         String lastName = "";
31         cs2hw2Soundex toSoundex = new cs2hw2Soundex ();
32         // phase 1: getting input from user
33         Scanner readInputKbd = new Scanner ( System.in );
34         while ( true )
35         {
36             System.out.print("Enter a surname: ");
37             lastName = readInputKbd.nextLine();
38             if (! lastName.equalsIgnoreCase("nextphase"))
39             {
40                 toSoundex.getSoundex(lastName);
41             }
42             else
43             {
44                 break;
45             }
46         }
47         // phase 2: get input from file
48         String listFile;
49         System.out.print("Enter filename or path to file: ");
50         listFile = readInputKbd.nextLine();
51         // inputData object and readInputFile object are
52         // created here, because we need to get filename form user first
53         File inputData = new File (listFile);
54         Scanner readInputFile = new Scanner ( inputData );
55
56         while ( readInputFile.hasNext() )
57         {
58             lastName = readInputFile.nextLine();
```

```

59         toSoundex.getSoundex(lastName);
60     }
61     readInputFile.close();
62 }
63
64
65 }

```

Soundex Class

```

1  public class cs2hw2Soundex
2  {
3
4      public void getSoundex ( String surname )
5      {
6          // converting to uppercase simplifies processing
7          // I tried adding if statement that would convert
8          // the initial letter when i==0 but then realized it
9          // extra code that was unnecessary
10         surname = surname.toUpperCase();
11         char[] surnameChars = surname.toCharArray();
12         char initial = surnameChars[0]; //hold the initial letter
13         String output = "";
14
15         // because we need to avoid duplicates, we need to convert
16         // the initial too, hence for loop starting at 0
17         for (int i = 0 ; i < surnameChars.length; i++ )
18         {
19             switch (surnameChars[i])
20             {
21                 case 'B':
22                 case 'F':
23                 case 'P':
24                 case 'V':
25                     surnameChars[i] = '1';
26                     break;
27                 case 'C':
28                 case 'G':
29                 case 'J':
30                 case 'K':
31                 case 'Q':
32                 case 'S':
33                 case 'X':
34                 case 'Z':
35                     surnameChars[i] = '2';
36                     break;
37                 case 'D':
38                 case 'T':
39                     surnameChars[i] = '3';
40                     break;
41                 case 'L':
42                     surnameChars[i] = '4';
43                     break;
44                 case 'M':
45                 case 'N':
46                     surnameChars[i] = '5';
47                     break;
48                 case 'R':
49                     surnameChars[i] = '6';

```

```

50             break;
51         default:
52             surnameChars[i] = '0';
53             break;
54     }
55 }
56
57 // for loop that builds up the output string
58 // it skips duplicates and characters marked by 0 (vowels, h, and w)
59 for (int i = 1; i < surnameChars.length; i++)
60 {
61     if ( surnameChars[i] == '0' || surnameChars[i] ==
surnameChars[i-1] )
62         continue;
63     output += surnameChars[i];
64 }
65 output = initial + output + "0000";
66
67 System.out.printf("%s:%s\n", surname, output.substring(0,4));
68 }
69
70
71 }

```

Command line output

Script started on Mon 14 Sep 2015 05:15:02 AM MDT

```
CURRENT DIR:[/home/xieerqi/bin/cs2/hw2]
$ java cs2hw2Driver
Enter a surname: Smith
SMITH:S530
Enter a surname: Dykstra
DYKSTRA:D236
Enter a surname: Oliver
OLIVER:O416
Enter a surname: Witherspoon
WITHERSPOON:W362
Enter a surname: Moore
MOORE:M600
Enter a surname: Little
LITTLE:L340
Enter a surname: Cesaer
CESAER:C260
Enter a surname: nextphase
Enter filename or path to file: Project 2 - Soundex data file.txt
GREENAWALT:G654
GRUENWALD:G654
SMITH:S530
SMYTHE:S530
BOWER:B600
LOWE:L000
HEINNINGER:H552
LITTLE:L340
VANDEUSEN:V532
DESJARDINS:D263
FINKLESTEIN:F524
SOUNDEX:S532
STEIN:S350
PROVENZANO:P615
GONZALES:G524
GONSALES:G524
NG:N200
SAKAMORU:S256
WANAMAKER:W552
LIAO:L000
ALKOWARIZMI:A426
ZILBERSCHLAG:Z416
WOLFF:W410
DIJKSTRA:D236
CHEVROLET:C164
HERSCHEL:H624
ZHOU:Z000
VEMULAKONDA:V542
STUDEBAKER:S331
DEUTSCHER:D326
YANG:Y520
VILHJALMSSON:V424
VAVRA:V160
ZAHRADNIK:Z635
EINSTEIN:E523
WALDO:W430
```

ADRIAANSEN:A365
MACGREGOR:M262
BRANDT:B653
CHU:C000
LLEWELLYN:L450
RHYDDERCH:R362
HEIMIRSSON:H562
SCHOVAJSA:S120
STRNAD:S365
DOMINGUEZ:D552
CAVANAGH:C152

CURRENT DIR:[/home/xieerqi/bin/cs2/hw2]
\$ exit

Script done on Mon 14 Sep 2015 05:16:12 AM MDT