```
1    import CSCI.*;
2    import java.util.*;
3    public class RadioCodes
4    {
5        public static class radioCode //create a radiocode datatype
6        {
7            char letter;
8            String code;
9        }
10
11       final static int ERROR = 0; //error constant is declared
12       public static void main (String[] args)
13       {
14           String filename = args[0];
15           char input = 'a'; //initialize input char
16           ArrayList<radioCode> codes = getRadioCodes(filename);
17           String code;
18
19           while(true) //loop to run while true, allowing user to input until exit
                 condition is met
20           {
21               input = GetLetter(); //set input to char passed by GetLetter method
22               if(testValue(input))
23               {
24                   System.exit(0); //exit program if input is invalid or if user chooses
                       to exit
25               }
26               code = findCode(input,codes);
27               System.out.println("Letter = " + input + " Code = " + code);//print out
                     what the input letter was
28           }
29       } //end main
30
31       //begin GetLetter method for reading user input of letters
32       public static char GetLetter()
33       {
34           char input = 'a'; //initialize char value
35           keyBoard read = new keyBoard(); //initialize keyBoard class from CSCI package
36           System.out.println("Please enter a letter from a to z, non-letter to exit");
37           input = read.readLowerCase(input); //call readLowerCase method from CSCI
                 package to parse input
38           return input;
39       }
40
41       public static boolean testValue(char input)
42       {
43           if((input >= 'a') && (input <= 'z')) //check if input is within the latin
                 alphabet
44           {
45               return false; //return boolean as false if input is valid
46           }
47           else
48           {
49               System.out.println("Invalid input/Exiting..."); //return error message if
                     input is not between a and z
50               return true; //return boolean as true if input is invalid
51           } //end decision logic
52       } //end testValue method
53
54
55       public static ArrayList<String> Reader(String filename)
56       {
57           FileIn myFile = new FileIn(filename);
58           ArrayList<String> input = new ArrayList<String>();
59           String line; //primer read
60           line = myFile.Read();
61           while (line != null) //while loop until end of file is reached
62               {
63                   input.add(line); //place data into arrayList using add
```

```java
64                line = myFile.Read(); //read next line
65            }
66        myFile.close(); //close file
67        return input; //return arraylist
68    }

69
70    public static ArrayList <radioCode> getRadioCodes(String filename)
71    {
72        ArrayList<radioCode> codes = new ArrayList<radioCode> ();
73        ArrayList<String> input = Reader(filename);

74
75        int size = input.size();
76        String line;
77        radioCode radio;
78        // loop through the list of Strings and
79       // decode them into radio code records.
80        for (int i = 0; i < size; i++)
81        {
82            line = input.get(i); //line == A,Alpha
83            radio = decode(line); //break up the csv record into component parts
84            codes.add(radio);
85        }
86        return codes;
87    }

88
89    public static radioCode decode(String line)
90    {
91        String[] parts;
92        radioCode entry = new radioCode();
93        parts = line.split(","); // [0] = A [1] = Alpha
94        parts[0] = parts[0].toLowerCase(); //A becomes a
95        entry.letter = parts[0].charAt(0); //a
96        entry.code = parts[1]; //alpha

97
98        return entry;
99    }

100
101    public static String findCode(char value, ArrayList<radioCode> radio)
102    {
103        int size = radio.size(); //set size to same size as array in file
104        String code = "Not found"; //return this if no comparable entry found
105        radioCode entry; //declare
106        for(int i = 0; i < size; ++i)
107        {
108            entry = radio.get(i); //set entry to value at index
109            if(value == entry.letter) return entry.code; //return entry code if char
                equates to entry
110        }
111        return code;
112    }
113 }
```