# Practice Problems:  File I/O

## 1. File I/O and exception throw

a.  (FileLetter.java) Write a program that asks the user to enter the name of a file, and then asks the user to enter a character. The program should check the validation of such a file (i.e., existing or not), and avoid using any unaccepted file name. Then, the program will count and display (on screen) the number of times that the specified character appears in the file. This program is required not to throw any exception.

b.  (FileLetterSimple.java) Redo the above question with "throw".

c.  (FileHead.java) Write a program that asks the user for the name of a file. The program should check the validation of such a file (i.e., existing or not), and avoid using any unaccepted file name. The program should display only the first 5 lines of the file's content. If the file contains fewer than 5 lines, it should display the file's entire contents. This program is required not to throw any exception.

d.  (FileHeadSimple.java) Redo question c with "throw".

```java
 1 import java.util.Scanner;
 2 import java.io.*;
 3 public class FileLetterThrowException{
 4 public static void main(String [] args) throws IOException
 5 {
 6     Scanner keyboard = new Scanner(System.in);
 7     System.out.print("Enter the name of a file:  ");
 8     String filename = keyboard.nextLine();
 9     File inputFile = new File (filename);
10     if(!inputFile.exists()){
11         System.out.println("The file is not found.");
12         System.exit(0);
13     }
14     Scanner input = new Scanner(inputFile);
15
16     String ch = "";
17     do{
18     System.out.print("Enter the target character:  ");
19     ch = keyboard.nextLine();
20     }while (ch.length()<1);
21
22     int count = 0;
23     while(input.hasNext()){
24     String content = input.nextLine();
25     for(int i = 0; i< content.length(); i++)
26         if(content.charAt(i) == ch.charAt(0))
27             count++;
28     System.out.println(content);
29     System.out.println(count);
30     }
31
32     input.close();
33     System.out.println("The number of apperance: "+count);
34 }
35 }
36
```

```java
1 import java.util.Scanner;
2 import java.io.*;
3 public class FileHeadThrowException{
4 public static void main(String [] args) throws IOException
5 {
6     Scanner keyboard = new Scanner(System.in);
7     System.out.print("Enter the name of a file:  ");
8     String filename = keyboard.nextLine();
9     File inputFile = new File (filename);
10    if(!inputFile.exists()){
11        System.out.println("The file is not found.");
12        System.exit(0);
13    }
14    Scanner input = new Scanner(inputFile);
15
16    int count = 0;
17    while(input.hasNext() && count<5){
18    String content = input.nextLine();
19    System.out.println(content);
20    count++;
21    }
22
23    input.close();
24    System.out.println("The number of lines in this file: "+count);
25 }
26 }
27
```

```java
 1 import java.util.Scanner;
 2 import java.io.File;
 3 import java.io.FileNotFoundException;
 4
 5 public class FileLetterWithException
 6 {
 7     public static void main(String[] args)
 8     {
 9         Scanner keyboard = new Scanner(System.in);
10         System.out.print("Enter the name of a file:  ");
11         String fileName = keyboard.nextLine();
12
13         Scanner inputStream = null;
14
15         try
16         {
17             inputStream = new Scanner(new File(fileName));
18         }
19         catch(FileNotFoundException e)
20         {
21             System.out.println("Error opening the file " +
22                                 fileName);
23             System.exit(0);
24         }
25
26         System.out.println("The file " + fileName + " exists.\n");
27
28         String ch = "";
29         do{
30           System.out.print("Enter the target character:  ");
31           ch = keyboard.nextLine();
32         }while (ch.length()<1);
33
34         int count = 0;
35         while (inputStream.hasNextLine() && count<5)
36         {
37             String line = inputStream.nextLine();
38             for(int i = 0; i< line.length(); i++)
39                 if(line.charAt(i) == ch.charAt(0))
40                     count++;
41
42             System.out.println(line);
43             System.out.println(count);
44         }
45         System.out.println("The number of appearance in file: "+count);
46         inputStream.close();
47     }
48 }
```

```java
1 import java.util.Scanner;
2 import java.io.File;
3 import java.io.FileNotFoundException;
4
5 public class FileHeadWithException
6 {
7     public static void main(String[] args)
8     {
9         Scanner keyboard = new Scanner(System.in);
10         System.out.print("Enter the name of a file:  ");
11         String fileName = keyboard.nextLine();
12
13         Scanner inputStream = null;
14         System.out.println("The file " + fileName +
15                             "\ncontains the following lines:\n");
16
17         try
18         {
19             inputStream = new Scanner(new File(fileName));
20         }
21         catch(FileNotFoundException e)
22         {
23             System.out.println("Error opening the file " +
24                                 fileName);
25             System.exit(0);
26         }
27
28         int count = 0;
29         while (inputStream.hasNextLine() && count<5)
30         {
31             String line = inputStream.nextLine();
32             System.out.println(line);
33             count++;
34         }
35         System.out.println("The number of lines in file: "+count);
36         inputStream.close();
37     }
38 }
```