Xiana Lara
October 6, 2020
CS 471

Exception Handling in Java

For this assignment, I was given an Ada code that took in integer values as grades and organized them by limit and frequency within the limit. The task was to rewrite that code in Java and change the second half of the first loop. This change made it so that "freq()" was only updated in the exception portion of my code.

My Code:

```java
/*
 * Xiana Lara
 * October 6th, 2020
 * Programming 5: Exception Handling in JAVA

 * Purpose: This program is based off the ada code grade_distribution.adb.
 * In my java version, I changed the second half of the first loop so that
 * all assignments to "Freq()" are updated in the Exception portion

 * Input: Grades in the form of integers in the range of [0 - 100] using
 * -1 to end the loop
 * Output: number limits and frequency of numbers within those limits
 */

import java.util.*;

class gradeDistribution{

    public static void main(String[] args){

        int freq[] = new int [10];
        int newGrade, index, lim1, lim2;

        try{

            throw new Exception("Error has occurred");

        } // of try

        catch(Exception e){

            System.out.println("Enter Grade [0-100]: ");
            System.out.println("-1 to exit loop");

            Scanner scnr = new Scanner(System.in);
            newGrade = scnr.nextInt();
```

```java
        while(newGrade >= 0){

            index = newGrade/10;

            if(newGrade < 100){
                freq[index] = freq[index] + 1;
            }// of if
            else if(newGrade == 100){
                freq[index - 1] = freq[index - 1] + 1;
            }// of else if
            else{
                System.out.println("Error: " + newGrade + " not in range");
            }// of else

            newGrade = scnr.nextInt();

        }// of while

    }// of catch

    System.out.println("   Limits\tFrequency");

    for(int i = 0; i < 10; i++){

        lim1 = 10 * i;
        lim2 = lim1 + 9;

        if(i == 9){
            lim2 = 100;
        }// end if

        System.out.printf("%2d\t%3d\t\t%d\n", lim1, lim2, freq[i]);

    }// end for

    }// of main

}// of class
```

Test Runs:

```
PS C:\Users\xiana>
ncoding=UTF-8' '-cp' 'C:\Users\xiana\AppData\Local\Temp\vscodesws_a8d8f\jdt_ws\jdt.ls-java-proje
ct\bin' 'gradeDistribution'
Enter Grade [0-100]:
-1 to exit loop
10
50
90
75
68
88
25
98
72
67
-1
   Limits         Frequency
  0        9               0
 10       19               1
 20       29               1
 30       39               0
 40       49               0
 50       59               1
 60       69               2
 70       79               2
 80       89               1
 90      100               2
```

```
s\launcher.bat' 'C:\Program Files\AdoptOpenJDK\jdk-11.0.8.10-hotspot\bin\java.exe' '-Dfile.encod
ing=UTF-8' '-cp' 'C:\Users\xiana\AppData\Local\Temp\vscodesws_a8d8f\jdt_ws\jdt.ls-java-project\b
in' 'gradeDistribution'
Enter Grade [0-100]:
-1 to exit loop
50
45
90
888
Error: 888 not in range
660
Error: 660 not in range
80
90
-1
   Limits         Frequency
  0        9               0
 10       19               0
 20       29               0
 30       39               0
 40       49               1
 50       59               1
 60       69               0
 70       79               0
 80       89               1
 90      100               2
```