Workshop #2: Exceptions

Learning Outcomes:

Upon successful completion of this workshop, you will have demonstrated the abilities to:

- Practice handling errors in your program.
- Describe to your instructor what you have learned in completing this workshop.

Requirements:

Part1: [5 points]

Write a Java program to accept a number and print out it. If the number is below 1 then a message “the number is invalid” is printed out. Using do..while to input again, try-catch block to handle errors.

The user interface may be:
Enter the number: - 2
The number is invalid”

Enter the number: world
The number is invalid”

Enter the number: 2
The number is 2

Step by step workshop instructions:

- Create a new project named “workshop2”
- In the project, create a new file named “Part1.java”
- In the method main, you type:

```
1
2  import java.util.Scanner;
3  public class test {
4      public static void main(String[] args) {
5          boolean cont=false;
6          do{
7              try{
8                  int num;
9                  Scanner sc=new ...
10                 System.out.println("enter the number:");
11                 num=sc.....
12                 if( num<1)
13                     throw new Exception();
14                 System.out.println("The number is "+ num);
15                 cont=false;
16             }catch(Exception e){
17                 System.out.println("The number is invalid");
18                 cont=true;
19             }
20         }while(cont);
21     }
22 }
```

Part 2: [5 points]

Write a Java program to accept a string and print out it. If the string does not match SExxx(x is digit) then a message “the string is invalid” is printed out. Using do..while to input again.

Hint: In library class String, you should use the method matches() to do this, use try-catch block and use throws to handle errors.

The user interface may be:

Input the string 1: I love u
the string is invalid

Input the string 1: SE123
the string is SE123

Step by step workshop instructions:

Background: In this workshop, you will use the pattern string(also called regular expression, see more What is a Regular Expression? - Definition from Techopedia). You should read the document to complete the exercise.

Task 1: use try-catch

- In the project “Workshop2”, create a new file named “Part2.java”
- In the method main, you type:

```
1
2  import java.util.Scanner;
3  public class test {
4      public static void main(String[] args) {
5          boolean cont=false;
6          do{
7              try{
               String s="";
               String pattern=....
               Scanner sc=new ...
11             System.out.println("enter the string:");
               s=sc.....
13             if( ! s.matches( pattern))
14                 throw new Exception();
15             System.out.println("The string is "+ s);
16             cont=false;
17         }catch(Exception e){
18             System.out.println("The string is invalid");
19             cont=true;
20         }
21     }while(cont);
22 }
23 }
```

At the row 9, use rules of the regular expression to create a pattern string “SExxx”, x is digit

Task 2: use throws keyword

- create a new file named “Part2_2.java”
- in the method main, type:

```
1
2  import java.util.Scanner;
3  public class Part2_2 {
4      public String inputString() throws Exception
5      {
6          String pattern="";//use rules of regular expression to c
           String s="";
8          Scanner sc=new Scanner(System.in);
9          System.out.println("input the string:");
10         s=sc.nextLine();
11         if(!s.matches(pattern))
12             throw new Exception();
13         return s;
14     }
15     public static void main(String[] args) {
16         Part2_2 obj=new Part2_2();
           boolean cont=false;
18         do{
19             try{
20                 String s=obj.inputString();
21                 System.out.println("the string is " +s);
22                 cont=false;
23             }catch(Exception e){
24                 System.out.println("The string is invalid");
25                 cont=true;
26             }
27         }while(cont);
28     }
29 }
```