

**EXCEPTION HANDLING**

1. Read the Register Number and Mobile Number of a student. If the Register Number does not contain exactly 9 characters or if the Mobile Number does not contain exactly 10 characters, throw an `IllegalArgumentException`. If the Mobile Number contains any character other than a digit, raise a `NumberFormatException`. If the Register Number contains any character other than digits and alphabets, throw a `NoSuchElementException`. If they are valid, print the message 'valid' else 'invalid'

2. A bag contains balls of 4 different colors- red, green, blue and yellow. Simulate picking up a ball at random for ten times. If the same colored ball is picked more than thrice, throw `SameColorBallException` and proceed with the simulation once again. After 10 valid picks, print the number of balls chosen from each of these colors.

Question no 1:

Code:

```
import java.util.NoSuchElementException;
import java.util.Scanner;
import java.util.regex.Matcher;
import java.util.regex.Pattern;

public class ExcepHandle {
    static void validate(String r, String n) {
        if (r.length() != 9) {
            System.out.println("Invalid");
            throw new IllegalArgumentException("Register Number does not contain exactly 9 characters");
        }

        if (n.length() != 10) {
            System.out.println("Invalid");
            throw new IllegalArgumentException("Mobile Number does not contain exactly 10 characters");
        }
        String pattern = "[6|7|8|9]{1}\\d{9}";
        Pattern a = Pattern.compile(pattern);
        Matcher m1 = a.matcher(n);
```

```

        if (!m1.find()) {
            throw new NumberFormatException("Mobile Number cannot contain any character otherthan a digit");
        }
        String pattern2 = "[1-9][0-9][A-Z a-z]{3}[0-9]{4}$";
        Pattern b = Pattern.compile(pattern2);
        Matcher m2 = b.matcher(r);
        if (!m2.find()) {
            throw new NoSuchElementException(
                "Registration Number cannot contain any character other than digits and alphabets");
        }
    }

    public static void main(String args[]) {
        String reg;
        String no;
        System.out.println("Enter the registration number and the mobile number : ");

        try (Scanner sc = new Scanner(System.in)) {

            reg = sc.nextLine();
            no = sc.nextLine();
        }
        validate(reg, no);
        System.out.println("Valid");
    }
}

```

Output:

```

Enter the registration number and the mobile number :
9818382222
Valid
PS D:\VIT\class room\3rd Sem\JAVA\lab> d:; cd 'd:\VIT\class room\3rd Sem\JAVA\lab'; & 'c:\Users\acer\.vscode\extensions\vscj
bat' 'C:\Program Files\Java\jdk-16.0.2\bin\java.exe' '--enable-preview' '-XX:+ShowCodeDetailsInExceptionMessages' '-Dfile.enc
ing\Code\User\workspaceStorage\9801d9d7229a8ae5e8ba2eb4848eb21d\redhat.java\jdt_ws\lab_5b1b4174\bin' 'ExcepHandle'
Enter the registration number and the mobile number :
208ce29999
3498234444
Invalid
Exception in thread "main" java.lang.IllegalArgumentException: Register Number does not contain exactly 9 characters
    at ExcepHandle.validate(ExcepHandle.java:10)
    at ExcepHandle.main(ExcepHandle.java:41)
PS D:\VIT\class room\3rd Sem\JAVA\lab> d:; cd 'd:\VIT\class room\3rd Sem\JAVA\lab'; & 'c:\Users\acer\.vscode\extensions\vscj
bat' 'C:\Program Files\Java\jdk-16.0.2\bin\java.exe' '--enable-preview' '-XX:+ShowCodeDetailsInExceptionMessages' '-Dfile.enc
ing\Code\User\workspaceStorage\9801d9d7229a8ae5e8ba2eb4848eb21d\redhat.java\jdt_ws\lab_5b1b4174\bin' 'ExcepHandle'
Enter the registration number and the mobile number :
20bce2893
1098273333
Exception in thread "main" java.lang.NumberFormatException: Mobile Number cannot contain any character otherthan a digit
    at ExcepHandle.validate(ExcepHandle.java:22)
    at ExcepHandle.main(ExcepHandle.java:42)
PS D:\VIT\class room\3rd Sem\JAVA\lab>

```

Question no 2:

Code:

```
import java.lang.Math;

class SameColourBallException extends Exception {
    SameColourBallException(int x) {
        System.out.println("Same colour was picked more than thrice");
    }
}

public class Balls {
    public static void main(String[] args) {
        int rand;
        int r = 0, g = 0, b = 0, y = 0;
        for (int i = 0; i < 10; i++) {
            rand = (int) ((Math.random() * ((4 - 1) + 1)) + 1);
            if (rand == 1)
                r++;
            if (rand == 2)
                g++;
            if (rand == 3)
                b++;
            if (rand == 4)
                y++;
            try {
                if (r > 3 || g > 3 || b > 3 || y > 3)
                    throw new SameColourBallException(0);
            } catch (SameColourBallException e) {
                System.out.println("Error Caught");
            }
        }
        System.out.println(r);
        System.out.println(g);
        System.out.println(b);
        System.out.println(y);
    }
}
```

Output:

```
chose colours 10 times
red-1,green-2,blue-3,yellow-4
1 3 2 4 3 4 3 2 4 4
Same colour was picked more than thrice
Error Caught
1
2
3
4
PS D:\VIT\class_room\3rd Sem\JAVA\lab>
```