

EXCEPTION HANDLING

- 1.a. Using the two arrays shown below, write a program that prompts the user to enter an integer between 1 and 12 and then displays the months and its number of days corresponding to the integer entered. Your program should display “wrong number” if the user enters a wrong number by catching `ArrayIndexOutOfBoundsException`.

```
String[] months = {"January", "February", "March", "April",  
"May", "June", "July", "August", "September", "October",  
"November", "December"};  
int[] dom = {31, 28, 31, 30, 31, 30, 31, 31, 30, 31, 30, 31};
```

1. b. The previous program works well as long as the user enters an integer. Otherwise, you may get another kind of exception. For instance, if you use `nextInt()` of `Scanner`, you could have an `InputMismatchException`. Modify it to prevent users entering anything other than an integer.
2. a. Write `hex2Dec(String hexString)` method, which converts a hex string into a decimal number. Implement the `hex2Dec` method to throw a `NumberFormatException` if the string is not a hex string.
2. b. Define a custom exception called `HexFormatException`. Implement the `hex2Dec` method to throw a `HexFormatException` if the string is not a hex string.
3. Write a Java program to create a method that takes an integer as a parameter and throws an exception if the number is odd.
4. Write a Java program to create a method that takes a string as input and throws an exception if the string does not contain vowels.
5. Write a Program to Print all Permutations of a String and throws an exception if the string length is greater than 10.