Practical No. 7(1)

```
package Prac7_1;

import java.util.*;

public class Assign7
{
   static int count=0;

   static void even_odd(int n)
   {
       if(n%2==0)
       {
          System.out.println(n+"is even");
          count++;
       }
      else
      {
          System.out.println(n+"is odd");
      }
   }

   public static void palindrome(String str)
   {
      String reverse = new StringBuffer(str).reverse().toString();
      if (str.equals(reverse))
      {
      System.out.println("String is palindrome");
      count++;
      }
      else
      {
      System.out.println("String is not palindrome");
      }
  }

  public static void prime_number(int num)
  {
        int i;
      for( i=2;i<=num-1;i++)
      {
         if(num%2==0){
          break;
         }
      }
      if(i==num)
      {
        System.out.println(num+"is prime");
        count++;
      }
      else
      {
        System.out.println(num+"is not prime");
      }
   }

  public static void check(int ch,int x)
  {
        switch(ch)
      {
         case 1:
          even_odd(x);
```

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            break;
        case 2:
         prime_number(x);
            break;
        default:
        System.out.println("Enter the correct option!");
      }
   }

  static void number_op()
  {
    int n,element,choice;
    Scanner sc=new Scanner(System.in);

    ArrayList<Integer>nums=new ArrayList<Integer>();
    System.out.println("Enter the numbers of element:");
    n=sc.nextInt();
    System.out.println("Enter the elements:");

    for(int i=0;i<n;i++)//n=0,1,2,3
    {
      element=sc.nextInt();// 7,9,12,22
      nums.add(element);//nums.add(7) 7,9,12,22
    }

    System.out.println("Enter the operation to be performed");
    System.out.println("1.odd or even");
    System.out.println("2.prime number");

    choice=sc.nextInt();
    Iterator itr=nums.iterator();
    count=0;

    while(itr.hasNext())
    {
     check(choice,(int)itr.next());
    }
    if(choice==1)
    {
      System.out.println("The number of Even number is "+count);
      System.out.println("The number of Odd number is "+(nums.size()-
count));
    }
    else
    {
      System.out.println("The number of prime number is "+count);
      System.out.println("The number of non-prime number is "+(nums.size()-
count));
    }
  }

  static void string_op(){
    int n;
    String word;
    Scanner sc=new Scanner(System.in);

    ArrayList<String>words=new ArrayList<String>();
    System.out.println("\nEnter the numbers of element:");
    n=sc.nextInt();

    System.out.println("Enter the elements in String :");
```

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    for(int i=0;i<n;i++)
    {
     word=sc.next();
     words.add(word);
    }
    count=0;

    for(String w:words)
    {
      palindrome(w);
    }

    System.out.println("The number of PALINDROMES is:"+ count);
  }

  public static void main(String[] args) {
      Scanner sc = new Scanner(System.in);

      System.out.println("Choose Type:");
      System.out.println("1. String");
      System.out.println("2. Integer");
      int ch = sc.nextInt();

      if(ch == 2)
        number_op();
      else
        string_op();
  }
}
```

OUTPUT :

```
Choose Type:
1. String
2. Integer
1

Enter the numbers of element:
3

Enter the elements in String :
aisia
nayan
rohit

String is palindrome
String is palindrome
String is not palindrome

The number of PALINDROMES is:2
```

Choose Type:
1. String
2. Integer
2
Enter the numbers of element:
3
Enter the elements:
121
123
321

Enter the operation to be performed
1.odd or even
2.prime number
1

121is odd
123is odd
321is odd
The number of Even number is 0
The number of Odd number is 3

Choose Type:
1. String
2. Integer
2
Enter the numbers of element:
3
Enter the elements:
12
29
17

Enter the operation to be performed
1.odd or even
2.prime number
2

12is not prime
29is prime
17is prime
The number of prime number is 2
The number of non-prime number is 1