/\*

Aim: Implement a generic program using any collection class to count the number of elements in a collection that have a specific property such as even numbers, odd number, prime number and palindromes.

\*/

Program:

public class Generics{

static boolean isPrime(int num){

int flag =0;

for(int i = 2;i<num;i++)

if(num%i==0)

{

flag = 1;

break;

}

if(flag==0)

return true;

return false;

}

static <T> void count(String str,T[] element){

int even=0,odd=0,prime=0,palin=0;

if(str.equals("even")){

for(T value:element)

if(Integer.parseInt(value.toString())%2==0)

even++;

System.out.println("Total Even : "+even);

}

if(str.equals("odd")){

for(T value:element)

if(Integer.parseInt(value.toString())%2!=0)

odd++;

System.out.println("Total Odd : "+odd);

}

if(str.equals("prime")){

for(T value:element)

if(isPrime(Integer.parseInt(value.toString())))

prime++;

System.out.println("Total Prime : "+prime);

}

if(str.equals("palindrome")){

for(T value:element){

StringBuffer rev = new StringBuffer(value.toString());

if(value.toString().equals(new String(rev.reverse())))

palin++;

}

System.out.println("Total Palindrome : "+palin);

}

}

public static void main(String[] args){

Integer iarray[] = {45,70,12,84,38,151,29,30,19,11};

count("even",iarray);

count("odd",iarray);

count("prime",iarray);

count("palindrome",iarray);

}

}

OUTPUT:

Total Even : 5

Total Odd : 5

Total Prime : 4

Total Palindrome : 2