import java.util.\*;

import java.lang.\*;

import java.io.\*;

public class JavaApplication10{

static int count = 0; //COUNT VARIABLE

**//FUNCTION TO CHECK PALINDROME**

static void check\_palindrome(String x){

StringBuilder s1 = new StringBuilder(x);

if(x.equals(s1.reverse().toString())){

System.out.println(x+" is a Palindrome");

count += 1; //count the number of palindromes

}

else{

System.out.println(x+" is not a Palindrome");

}

}

//FUNCTION TO CHECK EVEN OR ODD

static void even\_odd(int x){

if(x % 2 == 0){

System.out.println(x+" IS EVEN");

count += 1; //count the number of even numbers

}

else{

System.out.println(x+" IS ODD");

}

}

**//FUNCION TO CHECK PRIME NUMBER**

static void prime(int x)

{

boolean flag = false;

for(int i = 2; i <= x/2; i++)

{

if(x % i == 0){

flag = true;

break;

}

}

if (!flag) // flag ==false

{

System.out.println(x + " is a prime number.");

count += 1; //count the number of prime numbers

}

else{

System.out.println(x + " is not a prime number.");

}

}

**//FUNCTION TO DECIDE WHICH FUNCTION TO CHECK**

static void check(int ch,int x){

switch(ch){

case 1:

even\_odd(x); //call even\_odd fucntion for number x

break;

case 2:

prime(x); //call prime fucntion for number x

break;

default:

System.out.println("ENTER CORRECT OPTION");

}

}

**//FUNCTION FOR INTEGER ARRAY**

static void number\_op(){

int element,n,choice;

Scanner sc = new Scanner(System.in);

//ArrayList from Collection Interface

//Integer type

ArrayList<Integer> nums = new ArrayList<Integer>();

System.out.println("Enter the number of elements:");

n = sc.nextInt();

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

for(int i=0;i<n;i++){

element = sc.nextInt();

nums.add(element); //Add elements to the ArrayList

}

System.out.println("Enter the Operation to be performed:");

System.out.println("1. ODD or EVEN");

System.out.println("2. PRIME OR NOT");

choice = sc.nextInt();

Iterator itr = nums.iterator(); //Iterator from the COLLECTION interface

count = 0;

while(itr.hasNext()){ //Loop till there are elements in the ArrayList

check(choice,(int)itr.next()); //call the check function for each element

}

//Give the Count

if(choice == 1){

System.out.println("The number of EVEN numbers is: "+ count);

System.out.println("The number of ODD numbers is: "+ (nums.size()-count));

}

else{

System.out.println("The number of PRIME numbers is: "+ count);

System.out.println("The number of Non-PRIME numbers is: "+ (nums.size()-count));

}

}

**//FUNCTION FOR STRING ARRAY**

static void string\_op(){

int n;

String word;

//ArrayList from COLLECTION interface

//String type

ArrayList<String> words = new ArrayList<String>();

Scanner sc = new Scanner(System.in);

System.out.println("Enter the number of elements:");

n = sc.nextInt();

System.out.println("Enter elements:");

for(int i=0;i<n;i++){

word = sc.next();

words.add(word); //Add elements to the ArrayList

}

count = 0;

for(String w:words){ //Loop the ArrayList

check\_palindrome(w);

}

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

}

**// Main Function**

public static void main(String[] args){

Scanner sc = new Scanner(System.in);

//Choose the type of List needed

System.out.println("Choose Type:");

System.out.println("1. String");

System.out.println("2. Integer");

int ch = sc.nextInt();

if(ch == 2)

number\_op(); //Calls Interger arraylist

else

string\_op(); //Calls String arraylist

}

}

Output

Choose Type:

1. String

2. Integer

1

Enter the number of elements:

1 2

Enter elements:

2 is a Palindrome

The number of PALINDROMES is: 1