# Q2:

**import** java.util.Scanner;

**public** **class** JanKhan

{

**public** **static** **void** main(String[] args)

{

Scanner input= **new** Scanner(System.***in***);

System.***out***.println("Enter the size of boolean array: ");

**int** size=input.nextInt();

**boolean** arraay[]=**new** **boolean**[size];

**for**(**int** i=0;i<arraay.length;i++)

{

arraay[i]=**true**;

}

**for**(**int** i=2;i<arraay.length/2;i++)//no need to check after reaching reaching the mid

{

**if**(arraay[i]==**false**){

**continue**;//just to make program efficient

}

**int** count=i;

**while**(count<arraay.length)

{

**if**(count!=i)

{

arraay[count]=**false**;

}

count=count+i;

}

}

//printing

**for**(**int** i=0; i<arraay.length;i++)

{

**if**(arraay[i]==**true**)

{

System.***out***.printf(" %d",i);

}

**else**

{

System.***out***.printf(" \*");

}

}

}

}

# Q1 (part one)

**import** java.util.Scanner;

**class** Encrypter{

**private** **int** num[];

Encrypter(**int**[] number\_array){

**this**.num=number\_array;

}

**public** **int**[] encrypt(){

//adding 7 to every element and mod with 10

**for**(**int** i=0;i<num.length;i++){

num[i]=num[i]+7;

num[i]=num[i]%10;

}

//swapping first with third and second with fourth

**for**(**int** i=0; i<num.length/2;i++){

**int** temp=num[i];

num[i]=num[i+2];

num[i+2]=temp;

}

**return** num;

}

}

**class** ArrayOrNum{

**public** **int** convert(**int**[] arraay){

**int** temp=arraay[0];

**for**(**int** i=1;i<arraay.length;i++){

temp=(temp\*10)+ arraay[i];

}

**return** temp;

}

**public** **int**[] convert(**int** number){

**int** arraay[]=**new** **int**[4];

**int** divider=1000;

**for**(**int** i=0; i<arraay.length;i++){

arraay[i]=number/divider;

arraay[i]=arraay[i]%10;

divider=divider/10;

}

**return** arraay;

}

}

**public** **class** JanKhan

{

**public** **static** **void** main(String[] args)

{

Scanner input = **new** Scanner(System.***in***);

System.***out***.println("Enter a four digit number:");

**int** number = input.nextInt();

ArrayOrNum converter = **new** ArrayOrNum();

**int**[] inArray = converter.convert(number);

Encrypter mEncrypter = **new** Encrypter(inArray);

inArray=mEncrypter.encrypt();

**int** output = converter.convert(inArray);

System.***out***.println("The encrypted result is: "+ output);

}

}

# Q2 (part two)

**import** java.util.Scanner;

**class** Decrypter{

**private** **int** num[];

Decrypter(**int**[] number\_array){

**this**.num=number\_array;

}

**public** **int**[] encrypt(){

//adding 3 to every element and mod with 10

**for**(**int** i=0;i<num.length;i++){

num[i]=num[i]+3;

num[i]=num[i]%10;

}

//swapping first with third and second with fourth

**for**(**int** i=0; i<num.length/2;i++){

**int** temp=num[i];

num[i]=num[i+2];

num[i+2]=temp;

}

**return** num;

}

}

**class** ArrayOrNum{

**public** **int** convert(**int**[] arraay){

**int** temp=arraay[0];

**for**(**int** i=1;i<arraay.length;i++){

temp=(temp\*10)+ arraay[i];

}

**return** temp;

}

**public** **int**[] convert(**int** number){

**int** arraay[]=**new** **int**[4];

**int** divider=1000;

**for**(**int** i=0; i<arraay.length;i++){

arraay[i]=number/divider;

arraay[i]=arraay[i]%10;

divider=divider/10;

}

**return** arraay;

}

}

**public** **class** JanKhan

{

**public** **static** **void** main(String[] args)

{

Scanner input = **new** Scanner(System.***in***);

System.***out***.println("Enter a four digit number to decrypt:");

**int** number = input.nextInt();

ArrayOrNum converter = **new** ArrayOrNum();

**int**[] inArray = converter.convert(number);

Decrypter mDecrypter = **new** Decrypter(inArray);

inArray=mDecrypter.encrypt();

**int** output = converter.convert(inArray);

System.***out***.println("The decrypted result is: "+ output);

}

}