# Programming Assignment 1:

## Question 1: Take values of length and breadth and check if it is a rectangle or a square

import java.util.List;  
import java.util.Scanner;  
  
public class Main {  
 public static void main(String[] args)  
 {  
 Scanner scan= new Scanner(System.in);  
 System.out.println("Enter the length");  
 int length= scan.nextInt();  
 System.out.println("Enter the Breadth");  
 int breadth= scan.nextInt();  
 if(length==breadth)  
 {  
 System.out.println("It is a square");  
 }  
 else  
 {  
 System.out.println("It is a rectangle");  
 }}  
}

## Question 2: Find largest between 4 numbers

import java.util.List;  
import java.util.Scanner;  
  
public class Main {  
 public static void main(String[] args) {  
 *//Find largest between 4 numbers* int[] arr = {10, 40, 20, 30};  
 int max=arr[0];  
 for(int i=0;i<=arr.length-1;i++)  
 {  
  
 if(arr[i]>max)  
 {  
 max=arr[i];  
 }  
 }  
  
 System.out.println("The Max among the element is:"+ max);

## Questions 3: Check if a year is leap or not

import java.util.List;  
import java.util.Scanner;  
  
public class Main {  
 public static void main(String[] args) {  
 *// Find if the year is leap or not* Scanner scan= new Scanner(System.in);  
 int year= scan.nextInt();  
 if(year%4==0)  
 {  
 System.out.println("Its a leap year");  
 }  
 else {  
 System.out.println("It is not a leap year");  
 }  
  
 }  
}

## Question 4: Check the grading System

## number is below 20 print fail

## if number is between 20 and 40 and number in maths is <20 print D

## if number is between 40 and 60 and number in maths is >30 print C

## if number is between 60 and 80 and number in maths is >60 print B

## if number is between 80 and 100 and number in maths is >80 print A

import javax.sound.midi.Soundbank;  
import java.util.List;  
import java.util.Scanner;  
  
public class Main {  
 public static void main(String[] args) {  
 *// Find if the year is leap or not* Scanner scan= new Scanner(System.in);  
 System.out.println("Enter the Number");  
 int number= scan.nextInt();  
 System.out.println("Enter the Maths Marks");  
 int marks=scan.nextInt();  
 if(number<20)  
 {  
 System.out.println("Failed");  
 } else if (number>=20 && number<=40) {  
 if(marks<20) {  
 System.out.println("The Grade is D:");  
 }  
 }  
 else if (number>=40 && number<=60) {  
 if(marks>30)  
 {  
 System.out.println("The Grade is C:");  
 }  
 }  
 else if (number>=60 && number<=80) {  
 if(marks>60)  
 {  
 System.out.println("The Grade is B:");  
 }  
 }  
 else if (number>=80 && number<=100) {  
 if(marks>80)  
 {  
 System.out.println("The Grade is A:");  
 }  
 }  
  
 }  
}

## Question 5: Calculate the factorial of a 9

import java.util.List;  
import java.util.Scanner;  
  
public class Main {  
 public static void main(String[] args) {

Scanner scan= new Scanner(System.in);  
 System.out.println("Enter the Number");  
 int number= scan.nextInt();  
 int fact=1;  
  
 for(int i=1;i<=number;i++)  
 {  
 fact\*=i;  
 }  
  
 System.out.println(fact);  
 }  
}

## Question 6: Count the number of digits in an integer.

import javax.sound.midi.Soundbank;  
import java.util.List;  
import java.util.Scanner;  
  
public class Main {  
 public static void main(String[] args) {  
 *// Find if the year is leap or not* Scanner scan= new Scanner(System.in);  
 System.out.println("Enter the Number");  
 int number= scan.nextInt();  
 int count = 0;  
 while(number>0)  
 {  
 number=number/10;  
 count++;  
 }  
 System.out.println(count);  
 }  
}

## Question 7: Print the sum of even numbers between 1 and 50.

import javax.sound.midi.Soundbank;  
import java.util.List;  
import java.util.Scanner;  
  
public class Main {  
 public static void main(String[] args) {  
 *// Print the sum of even numbers between 1 and 50.* int[] arr={1,2,3,4,5,6,7,8,9,10};  
 int sum=0;  
 for(int i=0;i<arr.length;i++)  
 {  
 if(arr[i]%2==0)  
 {  
 sum+=arr[i];  
 }  
 }  
 System.out.println("The sum of all the even numbers:"+ sum);  
  
 }  
}

## Question 8: Print a menu-driven program for calculator operations (add, subtract, multiply, divide).

import javax.sound.midi.Soundbank;  
import java.util.List;  
import java.util.Scanner;  
  
public class Main {  
 public static void main(String[] args) {  
 Scanner scan= new Scanner(System.in);  
 System.out.println("Please Enter First Number");  
 int num1= scan.nextInt();  
 System.out.println("Please Enter Second Number");  
 int num2= scan.nextInt();  
 System.out.println("Please Enter the operation to be performed");  
 String operation=scan.next();  
  
 switch(operation){  
 case "Addition":  
 System.out.println(num1 +num2);  
 break;  
 case "Subtraction":  
 System.out.println(num1 -num2);  
 break;  
 case "Multiplication":  
 System.out.println(num1 \*num2);  
 break;  
 case "Division":  
 System.out.println(num1 /num2);  
 break;  
 default:  
 System.out.println("No Valid operation entered.");  
 }  
  
 }  
}

## Question 9: Display the first 10 odd numbers.

import javax.sound.midi.Soundbank;  
import java.util.List;  
import java.util.Scanner;  
  
public class Main {  
 public static void main(String[] args) {  
 int count=0;  
 int number=1;  
 while(count<10)  
 {  
 System.out.println(number);  
 number+=2;  
 count++;  
 }  
 }  
}

## Question 11: Print the multiplication table of a 29 using while loop.

public class Mul {  
 public static void main(String[] args) {  
 int num=29;  
  
 int i=1;  
  
 while(i<=10)  
 {  
 System.*out*.println(**"Printing the 29 multiplication table:"** + **"29"** + **" \* "** + i + **" "** + **" = "** +i \* num );  
 i++;  
 }  
 }  
}

## Question 12: Check if a number is positive or negative.

import java.util.Scanner;  
  
public class Postive {  
 public static void main(String[] args) {  
 Scanner scan= new Scanner(System.*in*);  
 System.*out*.println(**"Enter the Number"**);  
 int num= scan.nextInt();  
  
 if(num>=0)  
 {  
 System.*out*.println(**"The Number is Positive"**);  
 }  
 else {  
  
 System.*out*.println(**"The Number is Negative"**);  
 }  
 }  
}

## Question 13: Write a Program in Java to calculate Simple Interest

import java.util.Scanner;  
  
public class SimpleInterest {  
 public static void main(String[] args) {  
 Scanner scan = new Scanner(System.*in*);  
 System.*out*.println(**"Enter the Principal Amount"**);  
 long principal= scan.nextLong();  
 System.*out*.print(**"Enter the Rate of Interest (% per** *annum***): "**);  
 double rate= scan.nextDouble();  
 System.*out*.print(**"Enter the Time Period (in years): "**);  
 int time= scan.nextInt();  
  
 System.*out*.println(**"The Simple Interest as the Calculation is : "**+ (principal\*rate\*time)/100);  
 }  
}

## Question 15: Verify if the Number is an Armstrong Number or not

import java.util.Scanner;  
  
public class Armstrong {  
 public static void main(String[] args) {  
 //First get the length of the number  
 // using math.power and calculate the sum  
 // verify the sum and the original number is same or not  
  
 Scanner scan = new Scanner(System.*in*);  
 int num= scan.nextInt();  
 int count=0;  
 int sum=0;  
 int temp=num;  
  
 while(temp!=0)  
 {  
 temp= temp/10;  
 count++;  
  
 }  
 temp=num;  
 while(temp!=0)  
 {  
 int digit = temp % 10;  
 sum += Math.*pow*(digit, count);  
 temp = temp / 10;  
  
 }  
   
 if(sum==num)  
 {  
 System.*out*.println(**"It is an Armstrong Number"**);  
 }  
 else {  
 System.*out*.println(**"It is not an Armstrong Number"**);  
 }  
  
  
  
  
  
 }  
}

## Question 16: Print the below Patterns

a.

\*

\*\*

\*\*\*

\*\*\*\*

\*\*\*\*\*

b.

1

22

333

4444

55555

c. 12345

1234

123

12

1

d.

A

AB

ABC

ABCD

ABCDE

public class Patterns {  
 public static void main(String[] args) {  
  
  
 System.*out*.println(**"Printing the first** *Patern***"**);  
 for(int i=1;i<=5;i++)  
 {  
  
 for(int j=1;j<=i;j++)  
 {  
 System.*out*.print(**"\*"**);  
 }  
 System.*out*.println();  
 }  
 System.*out*.println(**"Printing the Second** *Patern***"**);  
  
 for(int i=1;i<=5;i++)  
 {  
  
 for(int j=1;j<=i;j++)  
 {  
 System.*out*.print(i);  
 }  
 System.*out*.println();  
 }  
  
 System.*out*.println(**"Printing the Third** *Patern***"**);  
  
 for(int i=5;i>0;i--)  
 {  
  
 for(int j=1;j<=i;j++)  
 {  
 System.*out*.print(j);  
 }  
 System.*out*.println();  
 }  
 System.*out*.println(**"Printing the Fourth** *Patern***"**);  
  
 for(int i=1;i<=5;i++)  
 {  
  
 for(int j=1;j<=i;j++)  
 {  
 System.*out*.print((char)(j+64));  
 }  
 System.*out*.println();  
 }  
 }  
  
  
}