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**COUSE : JAVA FULL STACK**

**ROLL NO : 24**

//1.    Print Hello World

class P1

{

    public static void main(String[] args) {

        System.out.println("Hello World");

    }

}

//2.    Add two numbers/binary numbers/characters

public class P2 {

    public static void main(String args[])

    {

        int a=10;

        int b=20;

        int c= a+b;

        System.out.println("Addition is : "+c);

    }

}

//3.    Calculate compound interest

import java.util.Scanner;

public class P3 {

    public static void main(String[] args) {

        double principle,rate=0.1,time,ci;

        Scanner sc =new Scanner(System.in);

        System.out.println("Enter a Principle amount:");

        principle= sc.nextDouble();

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

        time=sc.nextDouble();

        ci=principle\*(Math.pow((1+rate/100),time))-principle;

        System.out.println("Compound Interest is :"+ci);

    }

}

//4.    Calculate power of a number

import java.util.Scanner;

public class P4 {

    public static void main(String[] args) {

        Scanner sc =new Scanner(System.in);

        int num,power;

        double result;

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

        num=sc.nextInt();

        System.out.println("Enter the power of the nuumber:");

        power=sc.nextInt();

        result=Math.pow(num,power);

        System.out.println("Result:"+result);

        /\*

         \* long result=1;

         \* while(power!=0)

         \* {

         \*      result=result\*base;

         \*      --power;

         \* }

         \* System.out.println("Result = "+result);

         \*/

    }

}

//5.    Swap two numbers

public class P5 {

    public static void main(String[] args) {

        int x=10,y=20;

        System.out.println("1st number:"+x);

        System.out.println("2nd Number:"+y);

        x=x+y;

        y=x-y;

        x=x-y;

        System.out.println("After Swapping--");

        System.out.println("1st number:"+x);

        System.out.println("2nd number:"+y);

    }

}

//6.    Area and Circumference of a Circle

public class P6 {

    public static void main(String[] args) {

        int radius=5;

        double area,circum;

        area=3.14\*radius\*radius;

        circum=2\*3.14\*radius;

        System.out.println("Radius :"+radius);

        System.out.println("Area:"+area);

        System.out.println("Circumference:"+circum);

    }

}

//7.    Print Ascii Value of the Character

public class P7 {

    public static void main(String[] args) {

        char c1='p';

        char c2='b';

        int asciivalue1=c1;

        int asciivalue2=c2;

        System.out.println("ASCII value of "+c1+" is "+asciivalue1);

        System.out.println("ASCII value of "+c2+" is "+asciivalue2);

    }

}

//8.    Simple Interest

import java.util.Scanner;

class P8 {

    public static void main(String[] args) {

        double principle,rate=2,time,si;

        Scanner sc= new Scanner(System.in);

        System.out.println("Enter the principle amount: ");

        principle=sc.nextDouble();

        System.out.println("Enter the time in years:");

        time= sc.nextDouble();

        si=(principle\*rate\*time)/100;

        System.out.println("Simple interest is :"+si);

    }

}

//9.    The Display Size of the Different Data Type

public class P9 {

    public static void main(String[] args) {

        System.out.println("Size of byte: "+(Byte.SIZE/8)+" bytes.");

        System.out.println("Size of short: "+(Short.SIZE/8)+" bytes.");

        System.out.println("Size of int: "+(Integer.SIZE/8)+" bytes.");

        System.out.println("Size of long: "+(Long.SIZE/8)+" bytes.");

        System.out.println("Size of char: "+(Character.SIZE/8)+" bytes.");

        System.out.println("Size of float: "+(Float.SIZE/8)+" bytes.");

        System.out.println("Size of double: "+(Double.SIZE/8)+" bytes.");

    }

}

//10.   Factorial of a Given Number

import java.util.Scanner;

public class P10 {

    public static void main(String[] args) {

        int num,fact=1;

        Scanner sc= new Scanner(System.in);

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

        num=sc.nextInt();

        for(int i=1;i<num;i++){

            fact=fact\*i;

        }

        System.out.println("Factorial of given number: "+fact);

    }

}

//11.   Read Integer (N) and Print the First Three Powers (N^1, N^2, N^3)

import java.util.Scanner;

class P11 {

    public static void main(String args[])

    {

        Scanner sc = new Scanner(System.in);

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

        int n = sc.nextInt();

        int power1 = n;

        int power2 = n\*n;

        int power3 = n\*n\*n;

        System.out.println("First Power (n^1): "+power1);

        System.out.println("Second Power (n^2): "+power2);

        System.out.println("Third Power (n^3): "+power3);

    }

}

//12.  Area of a Circle

import java.util.Scanner;

class P12

{

    public static void main(String[] args)

    {

        Scanner sc = new Scanner(System.in);

        double radius,area;

        System.out.println("Enter the radius of the circle: ");

        radius = sc.nextDouble();

        area = 3.14\*radius\*radius;

        System.out.println("The area of the circle is: "+area);

    }

}

//13.   LCM of Two Numbers

import java.util.Scanner;

public class P13 {

    public static void main(String[] args) {

        Scanner sc = new Scanner(System.in);

        System.out.println("Enter two numbers: ");

        int a = sc.nextInt();

        int b = sc.nextInt();

        int lcm = 0;

        for (int i = 1; i <= a \* b; i++)

        {

            if (i % a == 0 && i % b == 0)

            {

                lcm = i;

            }

        }

                System.out.println("LCM of " + a + " and " + b + " is "+lcm);

    }

}

//14.   GCD of Two Numbers

import java.util.Scanner;

public class P14

{

    public static void main(String[] args)

    {

        Scanner sc = new Scanner(System.in);

        System.out.println("Enter two numbers: ");

        int a = sc.nextInt();

        int b = sc.nextInt();

        int gcd = 1;

        for(int i=1; i<=a && i<=b; ++i)

        {

            if(a%i==0 && b%i==0)

            {

                gcd = i;

            }

        }

        System.out.println("GCD of "+a+" and "+b+" is "+gcd);

    }

}

//15.   How to Print the Message " HELLO JAVA " In Java

public class P15 {

    public static void main(String[] args)

    {

        System.out.println("HELLO JAVA");

    }

}

//16.   How to Variable Declaration and Initialization in Java

public class P16 {

    public static void main(String[] args) {

        int a = 10;

        int b = 20;

        System.out.println("a = " + a + " b = " + b);

        char c = 'c';

        char d = 'd';

        System.out.println("c = " + c + " d = " + d);

        String e = "Hello";

        String f = "World";

        System.out.println("e = " + e + " f = " + f);

        Boolean g= true;

        boolean h= false;

        System.out.println("g = " + g + " h = " + h);

    }

}

//17.   How to Concatenate in Java

public class P17 {

    public static void main(String[] args) {

        String s1 = "Hello";

        String s2 = "World";

        String s3 = s1 + s2;

        System.out.println(s3);

    }

}

//18.   How to Print Different Values in Java

public class P18 {

    public static void main(String[] args) {

        int intValue = 42;

        double doubleValue = 3.14159;

        char charValue = 'A';

        String stringValue = "Hello, Java!";

        // Printing different types of values

        System.out.println("Integer value: " + intValue);

        System.out.println("Double value: " + doubleValue);

        System.out.println("Character value: " + charValue);

        System.out.println("String value: " + stringValue);

    }

}

//19.   Java Programs To Find Area And Circumference Of Circle

public class P19 {

    public static void main(String[] args) {

        double radius = 5.5;

        double area = Math.PI \* radius \* radius;

        double circumference = 2 \* Math.PI \* radius;

        System.out.println("Area of circle is " + area);

        System.out.println("Circumference of circle is " + circumference);

    }

}

//20.   How to Print ASCII Value in Java Programs

class P20

{

    public static void main(String[] args) {

        char ch = 'A';

        int ascii = ch;

        System.out.println("ASCII value of " + ch + " is " + ascii);

    }

}

//21.   Java Programs To Find Area Of Triangle

public class P21 {

    public static void main(String[] args) {

        double base, height, area;

        base = 5.0;

        height = 4.0;

        area = (base \* height) / 2.0;

        System.out.println("Area of Triangle is: " + area);

    }

}

//22.   Java Programs to Convert a Person's Name in Abbreviated

public class P22 {

    public static void main(String[] args) {

        String name = "Sachin Tendulkar";

        String[] words = name.split(" ");

        String initials = words[0].substring(0, 1) + words[1].substring(0, 1);

        System.out.println(initials);

    }

}

//23.   Java Programs For Calculate A Simple Interest

public class P23 {

    public static void main(String[] args) {

        int principle = 1000;

        int rate = 5;

        int time = 5;

        int si = (principle \* rate \* time) / 100;

        System.out.println("Simple Interest is: " + si);

    }

}

//24.   Write a Program to Calculate the Gross Salary of an Employee in Java

public class P24 {

    public static void main(String[] args) {

        int basicSalary = 10000;

        int da = 1000;

        int hra = 2000;

        int pf = 1000;

        int grossSalary = basicSalary + da + hra - pf;

        System.out.println("Gross Salary of an Employee is: " + grossSalary);

    }

}

//25.   Java Programs For Converting Temperature Celsius Into Fahrenheit

public class P25 {

    public static void main(String[] args) {

        float celsius = 32.0f;

        float fahrenheit = (float) (celsius \* 9 / 5 + 32);

        System.out.println("Celsius = " + celsius + " Fahrenheit = " + fahrenheit);

    }

}

//26.   Java Program to Find Size of Different Data Types

public class P26 {

    public static void main(String[] args) {

        int a = 10;

        float b = 10.5f;

        double c = 10.5;

        char d = 'a';

        String e = "Hello";

        System.out.println("Size of int is " + Integer.BYTES + " bytes");

        System.out.println("Size of float is " + Float.BYTES + " bytes");

        System.out.println("Size of double is " + Double.BYTES + " bytes");

        System.out.println("Size of char is " + Character.BYTES + " bytes");

        //System.out.println("Size of String is " + String.BYTES + " bytes");

    }

}

//27.   Java Program to Find Square and Cube of a Number (N^1, N^2, N^3)

public class P27

{

    public static void main(String[] args)

    {

        int num = 5;

        int square = num \* num;

        int cube = num \* num \* num;

        System.out.println("Square of " + num + " is " + square);

        System.out.println("Cube of " + num + " is " + cube);

    }

}

//28.   Fibonacci Series in Java

public class P28 {

    public static void main(String[] args) {

        int n1=0,n2=1,n3,i,count=10;

        System.out.print(n1+" "+n2);

        for(i=2;i<count;i++)

        {

            n3=n1+n2;

            System.out.print(" "+n3);

            n1=n2;

            n2=n3;

        }

    }

}

//29.   Prime Number Program in Java

import java.util.Scanner;

public class P29

{

    public static void main(String[] args) {

        Scanner sc = new Scanner(System.in);

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

        int n = sc.nextInt();

        int i;

        for (i = 2; i < n; i++)

        {

            if (n % i == 0)

            {

                break;

            }

        }

        if (i == n)

        {

            System.out.println("Prime Number");

        }

        else {

            System.out.println("Not a Prime Number");

        }

    }

}

//30.   Palindrome Program in Java

public class P30

{

    public static void main(String[] args) {

        int num = 121, temp = num, rev = 0, rem;

        while (num > 0) {

            rem = num % 10;

            rev = rev \* 10 + rem;

            num = num / 10;

        }

        if (temp == rev)

        {

            System.out.println("The number is a palindrome.");

        }

        else {

            System.out.println("The number is not a palindrome.");

        }

    }

}

//31.   Factorial Program in Java

import java.util.Scanner;

public class P31

{

    public static void main(String args[])

    {

        Scanner sc = new Scanner(System.in);

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

        int n = sc.nextInt();

        int fact = 1;

        for(int i=1;i<=n;i++)

        {

            fact = fact\*i;

        }

        System.out.println("Factorial of "+n+" is "+fact);

    }

}

//32.   Armstrong Number in Java

import java.util.Scanner;

public class P32

{

    public static void main(String[] args)

    {

        Scanner sc= new Scanner(System.in);

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

        int num= sc.nextInt();

        int temp=num, sum=0, rem;

        while(temp>0)

        {

            rem=temp%10;

            sum=sum+(rem\*rem\*rem);

            temp=temp/10;

        }

        if(sum==num)

        {

            System.out.println("The number is an Armstrong number");

        }

        else{

            System.out.println("The number is not an Armstrong number.");

        }

    }

}

//33.   How to Generate Random Numbers in Java

import java.util.Random;

public class P33

{

    public static void main(String args[])

    {

        Random rand = new Random();

        int random = rand.nextInt(100);

        System.out.println("Random integer: "+random);

    }

}

//34.   How to Print Patterns in Java

class P34

{

    public static void main(String[] args)

    {

        int n=5;

        for(int i=1;i<=n;i++)

        {

            for(int j=1;j<=i;j++)

            {

                System.out.print(j+" ");

            }

                System.out.println();

            }

    }

}

//35.   How to Compare Two Objects in Java

import java.util.Scanner;

public class P35 {

    public static void main(String args[])

    {

        Scanner sc = new Scanner(System.in);

        System.out.println("Enter first number:");

        Integer a = sc.nextInt();

        System.out.println("Enter second number:");

        Integer b = sc.nextInt();

        if(a.compareTo(b)==0)

        {

            System.out.println("a is equal to b.");

        }

        else{

            System.out.println("a is not equal to b.");

        }

    }

}

//36.   How to Create Objects in Java

class Person{

    String name;

    int age;

    public Person(String name,int age)

    {

        this.name=name;

        this.age=age;

    }

    public void display()

    {

        System.out.println("Name : "+name+ " Age : "+age);

    }

}

public class P36

{

    public static void main(String[] args) {

        Person p1 = new Person("Ramesh",20);

        Person p2 = new Person("Suresh",22);

        p1.display();

        p2.display();

    }

}

//37.   Calculate area of rectangle

import java.util.Scanner;

class Rectangle{

    double length;

    double width;

    public Rectangle(double length,double width)

    {

        this.length=length;

        this.width=width;

    }

    public double calculateArea()

    {

        return length\*width;

    }

}

public class P37

{

    public static void main(String[] args) {

        Scanner sc = new Scanner(System.in);

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

        double l = sc.nextDouble();

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

        double w = sc.nextDouble();

        Rectangle R1 = new Rectangle(l,w);

        System.out.println("Area of Rectangle : "+R1.calculateArea());

    }

}

//38.   Calculate area and circumference of circle using multiple classes

class Circle

{

    double radius;

    public Circle(double radius)

    {

        this.radius= radius;

    }

    public double calculateArea()

    {

        return Math.PI\*radius\*radius;

    }

    public double calculateCircum()

    {

        return 2\*Math.PI\*radius;

    }

}

public class P38

{

    public static void main(String[] args) {

        Circle c1 = new Circle(5.2);

        double area = c1.calculateArea();

        double circum = c1.calculateCircum();

        System.out.println("Area of circle : "+area);

        System.out.println("Circumference of circle : "+circum);

    }

}

//39.   The Greatest Number Among the Given Three Number

import java.util.Scanner;

class P39

{

    public static void main(String[] args) {

        Scanner sc = new Scanner(System.in);

        int a,b,c;

        System.out.println("Enter three numbers:");

        a= sc.nextInt();

        b= sc.nextInt();

        c= sc.nextInt();

        if(a>=b && a>=c)

        {

            System.out.println(a+" is largest.");

        }

        else if(b>=a && b>=c)

        {

            System.out.println(b+" is largest.");

        }

        else

        {

            System.out.println(c+" is largest.");

        }

    }

}

//40.   The Number Is Positive or Negative

import java.util.Scanner;

public class P40 {

    public static void main(String[] args) {

        Scanner sc = new Scanner(System.in);

        int num;

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

        num = sc.nextInt();

        if(num==0)

        {

            System.out.println("Number is 0.");

        }

        else if(num<0)

        {

            System.out.println("Negative number.");

        }

        else

        {

            System.out.println("Positive number.");

        }

    }

}

//41.   Character Is Vowel or Consonant

import java.util.Scanner;

class P41

{

    public static void main(String[] args) {

        Scanner sc = new Scanner(System.in);

        System.out.println("Enter a Character :");

        char ch = sc.next().charAt(0);

        if(ch=='a'||ch=='e'||ch=='i'||ch=='o'||ch=='u')

        {

            System.out.println(ch+ " is vowel.");

        }

        else

        {

            System.out.println(ch+" is constant.");

        }

    }

}

//42.   A Character Is an Alphabet or Not

import java.util.Scanner;

class P42

{

    public static void main(String[] args) {

        Scanner sc = new Scanner(System.in);

        System.out.println("Enter a Character :");

        char ch = sc.next().charAt(0);

        if(Character.isLetter(ch))

        {

            System.out.println(ch+ " is character");

        }

        else

        {

            System.out.println(ch+" is not a character");

        }

    }

}

//43.   Uppercase, Lowercase, Special Character, or Digit

import java.util.Scanner;

class P43 {

    public static void main(String[] args) {

        Scanner sc = new Scanner(System.in);

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

        char st = sc.next().charAt(0);

        if (Character.isLetter(st))

        {

            System.out.printf("Entered character is a letter ");

            if (Character.isUpperCase(st))

            {

                System.out.println(" and a Uppercase.");

            }

            else if (Character.isLowerCase(st))

            {

                System.out.println("and a Lowercase.");

            }

        }

        else if (Character.isDigit(st))

        {

            System.out.println("Entered charcter is a digit.");

        }

        else

        {

            System.out.println("Entered character is a Symbol.");

        }

    }

}

//44.   The Number Is Positive or Negative

import java.util.Scanner;

class P44

{

    public static void main(String[] args)

    {

        Scanner sc = new Scanner(System.in);

        int num;

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

        num = sc.nextInt();

        if(num<0)

        {

            System.out.println("Number is negative.");

        }

        else

        {

            System.out.println("Number is poisitive.");

        }

    }

}

//45.   The Number Is Even or Odd

import java.util.Scanner;

class P45

{

    public static void main(String[] args)

    {

        Scanner sc = new Scanner(System.in);

        int num;

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

        num = sc.nextInt();

        if(num%2==0)

        {

            System.out.println("Even number.");

        }

        else

        {

            System.out.println("Odd number.");

        }

    }

}

//46.   Greatest of Two Numbers

import java.util.Scanner;

class P46

{

    public static void main(String args[])

    {

        Scanner sc = new Scanner(System.in);

        int a,b;

        System.out.println("Enter  two numbers:");

        a=sc.nextInt();

        b=sc.nextInt();

        if(a<b)

        {

            System.out.println(b+" is the greatest.");

        }

        else

        {

            System.out.println(a+" is the greatest.");

        }

    }

}

//47.   Greatest Among Three Numbers

import java.util.Scanner;

class P47

{

    public static void main(String[] args) {

        Scanner sc = new Scanner(System.in);

        int a,b,c;

        System.out.println("Enter three numbers:");

        a= sc.nextInt();

        b= sc.nextInt();

        c= sc.nextInt();

        if(a>=b && a>=c)

        {

            System.out.println(a+" is largest.");

        }

        else if(b>=a && b>=c)

        {

            System.out.println(b+" is largest.");

        }

        else

        {

            System.out.println(c+" is largest.");

        }

    }

}

//48.   Leap Year

import java.util.Scanner;

class P48

{

    public static void main(String[] args)

    {

        Scanner sc = new Scanner(System.in);

        int year;

        System.out.println("Enter year to check : ");

        year = sc.nextInt();

        if(year%4==0)

        {

            System.out.println("Year is leap year.");

        }

        else

        {

            System.out.println("Year is not leap year.");

        }

    }

}

//49.   The Date Is Correct or Not

import java.util.Scanner;

class P49

{

    public static void main(String[] args)

    {

        Scanner sc = new Scanner(System.in);

        int date,month,year;

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

        date= sc.nextInt();

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

        month = sc.nextInt();

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

        year = sc.nextInt();

        if(year<0)

        {

            System.out.println("Invalid year.");

        }

        else

        {

            if(month>0 && month<13)

            {

                if(date>0 && date<31)

                {

                    System.out.println("Valid date...");

                }

            }

            else

            {

                System.out.println("Invalid date...");

            }

        }

    }

}

//50.   Voting Eligibility Checker

import java.util.Scanner;

class P50

{

    public static void main(String[] args)

    {

        Scanner sc = new Scanner(System.in);

        int age;

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

        age= sc.nextInt();

        if(age<18)

        {

            System.out.println("Not eligible for voting.");

        }

        else

        {

            System.out.println("Eligible for voting.");

        }

    }

}

//51.   Find the maximum between two numbers.

import java.util.Scanner;

class P51

{

    public static void main(String args[])

    {

        Scanner sc = new Scanner(System.in);

        int a,b;

        System.out.println("Enter  two numbers:");

        a=sc.nextInt();

        b=sc.nextInt();

        if(a<b)

        {

            System.out.println(b+" is the greatest.");

        }

        else

        {

            System.out.println(a+" is the greatest.");

        }

    }

}

//52.   Find the maximum between the three numbers

import java.util.Scanner;

class P52

{

    public static void main(String[] args) {

        Scanner sc = new Scanner(System.in);

        int a,b,c;

        System.out.println("Enter three numbers:");

        a= sc.nextInt();

        b= sc.nextInt();

        c= sc.nextInt();

        if(a>=b && a>=c)

        {

            System.out.println(a+" is largest.");

        }

        else if(b>=a && b>=c)

        {

            System.out.println(b+" is largest.");

        }

        else

        {

            System.out.println(c+" is largest.");

        }

    }

}

//53.   Check whether a number is negative, positive or zero.

import java.util.Scanner;

class P53

{

    public static void main(String[] args)

    {

        Scanner sc = new Scanner(System.in);

        int num;

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

        num = sc.nextInt();

        if(num==0)

        {

            System.out.println("Number is zero.");

        }

        else if(num<0)

        {

            System.out.println("Number is negative.");

        }

        else

        {

            System.out.println("Number is positive.");

        }

    }

}

//54.   Check whether a number is divisible by 5 and 11 or not.

import java.util.Scanner;

class P54

{

    public static void main(String args[])

    {

        int num;

        Scanner sc= new Scanner(System.in);

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

        num=sc.nextInt();

        if(num%5==0 && num%11==0)

        {

            System.out.println("The number is divisible by 5 and 11");

        }

        else

        {

            System.out.println("Not divisible.");

        }

    }

}

//55.   Find whether a number is even or odd.

import java.util.Scanner;

class P55

{

    public static void main(String[] args)

    {

        Scanner sc = new Scanner(System.in);

        int num;

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

        num = sc.nextInt();

        if(num%2==0)

        {

            System.out.println("Even number.");

        }

        else

        {

            System.out.println("Odd number.");

        }

    }

}

//56.   Check whether a year is a leap year or not.

import java.util.Scanner;

class P56

{

    public static void main(String[] args)

    {

        Scanner sc = new Scanner(System.in);

        int year;

        System.out.println("Enter year to check : ");

        year = sc.nextInt();

        if(year%4==0)

        {

            System.out.println("Year is leap year.");

        }

        else

        {

            System.out.println("Year is not leap year.");

        }

    }

}

//57.   Check whether a character is an alphabet or not.

import java.util.Scanner;

class P57

{

    public static void main(String[] args) {

        Scanner sc = new Scanner(System.in);

        System.out.println("Enter a Character :");

        char ch = sc.next().charAt(0);

        if(Character.isLetter(ch))

        {

            System.out.println(ch+ " is character");

        }

        else

        {

            System.out.println(ch+" is not a character");

        }

    }

}

//58.   Input any alphabet and check whether it is vowel or consonant.

import java.util.Scanner;

class P58

{

    public static void main(String[] args) {

        Scanner sc = new Scanner(System.in);

        System.out.println("Enter a Character :");

        char ch = sc.next().charAt(0);

        if(ch=='a'||ch=='e'||ch=='i'||ch=='o'||ch=='u')

        {

            System.out.println(ch+ " is vowel.");

        }

        else

        {

            System.out.println(ch+" is constant.");

        }

    }

}

//59.   Input any character and check whether it is the alphabet, digit or special character.

import java.util.Scanner;

class P59 {

    public static void main(String[] args) {

        Scanner sc = new Scanner(System.in);

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

        char st = sc.next().charAt(0);

        if (Character.isLetter(st))

        {

            System.out.printf("Entered character is a letter ");

            if (Character.isUpperCase(st))

            {

                System.out.println(" and a Uppercase.");

            }

            else if (Character.isLowerCase(st))

            {

                System.out.println("and a Lowercase.");

            }

        }

        else if (Character.isDigit(st))

        {

            System.out.println("Entered charcter is a digit.");

        }

        else

        {

            System.out.println("Entered character is a Symbol.");

        }

    }

}

//60.   Check whether a character is an uppercase or lowercase alphabet.

import java.util.Scanner;

class P60 {

    public static void main(String[] args) {

        Scanner sc = new Scanner(System.in);

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

        char st = sc.next().charAt(0);

        if (Character.isLetter(st))

        {

            System.out.printf("Entered character is a letter ");

            if (Character.isUpperCase(st))

            {

                System.out.println(" and a Uppercase.");

            }

            else if (Character.isLowerCase(st))

            {

                System.out.println("and a Lowercase.");

            }

        }

        else if (Character.isDigit(st))

        {

            System.out.println("Entered charcter is a digit.");

        }

        else

        {

            System.out.println("Entered character is a Symbol.");

        }

    }

}

//61.   Input week number and print weekday.

import java.util.Scanner;

public class P61 {

    public static void main(String[] args)

    {

        int week;

        Scanner sc = new Scanner(System.in);

        System.out.print("Enter week number: ");

        week = sc.nextInt();

        switch (week)

        {

            case 1:

            System.out.println("Monday");

            break;

            case 2:

            System.out.println("Tuesday");

            break;

            case 3:

            System.out.println("Wednesday");

            break;

            case 4:

            System.out.println("Thursday");

            break;

            case 5:

            System.out.println("Friday");

            break;

            case 6:

            System.out.println("Saturday");

            break;

            case 7:

            System.out.println("Sunday");

            break;

            default:

            System.out.println("Invalid week number");

        }

    }

}

//62.   Input month number and print number of days in that month

import java.util.Scanner;

public class P62 {

    public static void main(String[] args) {

        int month;

        Scanner sc = new Scanner(System.in);

        System.out.println("Enter month number: ");

        month = sc.nextInt();

        switch (month) {

            case 1:

                System.out.println("January");

                break;

            case 2:

                System.out.println("February");

                break;

            case 3:

                System.out.println("March");

                break;

            case 4:

                System.out.println("April");

                break;

            case 5:

                System.out.println("May");

                break;

            case 6:

                System.out.println("June");

                break;

            case 7:

                System.out.println("July");

            case 8:

                System.out.println("August");

                break;

            case 9:

                System.out.println("September");

                break;

            case 10:

                System.out.println("October");

                break;

            case 11:

                System.out.println("November");

                break;

            case 12:

                System.out.println("December");

        }

    }

}

//63.   Count the total number of notes in a given amount.

import java.util.Scanner;

public class P63

{

    public static void main(String[] args)

    {

        Scanner sc=new Scanner(System.in);

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

        int amount=sc.nextInt();

        int fivehundred = amount/500;

        int hundred=amount/100;

        int fifty=amount/50;

        int twenty=amount/20;

        int ten=amount/10;

        System.out.println("Number of five hundred rupee notes:"+fivehundred);

        System.out.println("Number of hundred rupee notes:"+hundred);

        System.out.println("Number of fifty rupee notes:"+fifty);

        System.out.println("Number of twenty rupee notes:"+twenty);

        System.out.println("Number of ten rupee notes:"+ten);

    }

}

//64.   Input angles of a triangle and check whether the triangle is valid or not.

import java.util.Scanner;

class P64{

    public static void main(String[] args)

    {

        Scanner sc = new Scanner(System.in);

        System.out.println("Enter the first angle of the triangle: ");

        int a = sc.nextInt();

        System.out.println("Enter the second angle of the triangle: ");

        int b = sc.nextInt();

        System.out.println("Enter the third angle of the triangle: ");

        int c = sc.nextInt();

        if(a+b+c==180)

        System.out.println("The triangle is valid");

        else

        System.out.println("The triangle is not valid");

    }

}

//65.   Input all sides of a triangle and check whether the triangle is valid or not.

import java.util.Scanner;

public class P65

{

    public static void main(String[] args)

    {

        Scanner sc = new Scanner(System.in);

        System.out.println("Enter the first side of the triangle:");

        double a = sc.nextDouble();

        System.out.println("Enter the second side of the triangle:");

        double b = sc.nextDouble();

        System.out.println("Enter the third side of the triangle:");

        double c = sc.nextDouble();

        if((a+b>c)&&(a+c>b)&&(b+c>a))

        {

            System.out.println("The triangle is valid.");

        }

        else

        {

            System.out.println("The triangle is not valid.");

        }

    }

}

//66.   Check whether the triangle is an equilateral, isosceles or scalene triangle.

import java.util.Scanner;

class P66

{

    public static void main(String args[])

    {

        int x,y,z;

        Scanner sc = new Scanner(System.in);

        System.out.println("Enter 1st side: ");

        x = sc.nextInt();

        System.out.println("Enter 2nd side: ");

        y = sc.nextInt();

        System.out.println("Enter 3rd side: ");

        z = sc.nextInt();

        if(x==y && y==z)

        {

            System.out.println("Equilateral Triangle.");

        }

        else if(x==y || y==z || z==x)

        {

            System.out.println("Isosceles Triangle.");

        }

        else

        {

            System.out.println("Scalene Triangle.");

        }

    }

}

//67.   Find all roots of a quadratic equation.

import java.util.Scanner;

public class P67

{

    public static void main(String args[])

        {

            Scanner sc = new Scanner(System.in);

            double a,b,c;

            System.out.println("Enter the value of constants: ");

            a= sc.nextDouble();

            b= sc.nextDouble();

            c= sc.nextDouble();

            double firstroot,secondroot;

            double det = b\*b- 4\*a\*c;

            if(det>0)

            {

                firstroot = (-b + Math.sqrt(det))/(2\*a);

                secondroot = (-b + Math.sqrt(det))/(2\*a);

                System.out.printf("First root = %.2f and Second Root = %.2f",firstroot,secondroot);

            }

            else if(det==0)

            {

                firstroot = secondroot = -b/(2\*a);

                System.out.printf("First root = %.2f and Second Root = %.2f",firstroot,secondroot);

            }

            else

            {

                double real = -b/(2\*a);

                double imaginary = Math.sqrt(-det)/(2\*a);

                System.out.printf("First root = %.2f + %.2fi",real,imaginary);

                System.out.printf("\nSecond root = %.2f + %.2fi",real,imaginary);

            }

        }

}

//68.   Calculate profit or loss.

import java.util.Scanner;

public class P68 {

    public static void main(String[] args) {

        int cp,sp,profit;

        Scanner sc = new Scanner(System.in);

        System.out.println("Enter the cost price:");

        cp = sc.nextInt();

        System.out.println("Enter the selling price:");

        sp = sc.nextInt();

        profit = sp-cp;

        if(profit>0)

        {

            System.out.println("Profit of :"+profit);

        }

        else

        {

            System.out.println("Loss of :"+profit);

        }

    }

}

//69.   Java Program To Check Character Is Uppercase, Lowercase Alphabet Or A Digit Or A Special Symbol

import java.util.Scanner;

public class P69

{

    public static void main(String[] args) {

        Scanner sc = new Scanner(System.in);

        System.out.println("Enter a character: ");

            char ch = sc.next().charAt(0);

        if (ch >= 'a' && ch <= 'z')

            System.out.println("Lowercase alphabet");

        else if (ch >= 'A' && ch <= 'Z')

            System.out.println("Uppercase alphabet");

        else if (ch >= '0' && ch <= '9')

            System.out.println("Digit");

        else

            System.out.println("Special symbol");

    }

}

//70.   Write a Java Program to Find the Largest of Three Numbers Using Nested IF

import java.util.Scanner;

class P70

{

    public static void main(String[] args)

    {

        Scanner sc = new Scanner(System.in);

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

        int a = sc.nextInt();

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

        int b = sc.nextInt();

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

        int c = sc.nextInt();

        if(a>b)

        {

            if(a>c)

            {

                System.out.println("The largest number is: "+a);

            }

            else

            {

                System.out.println("The largest number is: "+c);

            }

        }

        else

        {

            if(b>c)

            {

                System.out.println("The largest number is: "+b);

            }

            else

            {

                System.out.println("The largest number is: "+c);

            }

        }

    }

}

//71.   Employee Salary Program in Java

import java.util.Scanner;

public class P71

{

    public static void main(String[] args)

    {

        Scanner sc = new Scanner(System.in);

        double salary, hra, da, gross\_salary;

            System.out.println("Enter details for Employee :");

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

            salary = sc.nextDouble();

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

            hra = sc.nextDouble();

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

            da = sc.nextDouble();

            gross\_salary = salary + hra - da;

            System.out.println("Gross Salary: "+gross\_salary);

            System.out.println("Gross salary of Employee :"+gross\_salary);

    }

}

//72.   Java Program to Find Number Is Positive or Negative

import java.util.Scanner;

public class P72 {

    public static void main(String[] args)

    {

        Scanner sc = new Scanner(System.in);

        System.out.print("Enter a number: ");

        int num = sc.nextInt();

        if (num > 0)

        {

            System.out.println("The number is positive.");

        }

        else if (num < 0)

        {

            System.out.println("The number is negative.");

        }

        else

        {

            System.out.println("The number is zero.");

        }

    }

}

//73.   Java Program To Find Character Is Vowel Or Not

import java.util.Scanner;

public class P73

{

    public static void main(String[] args)

    {

        Scanner sc = new Scanner(System.in);

        System.out.println("Enter a character:");

        char ch = sc.next().charAt(0);

        if(ch == 'a' || ch == 'e' || ch == 'i' ||ch == 'o' || ch == 'u' || ch == 'A' || ch == 'E' || ch == 'I' || ch == 'O' || ch =='U')

        {

            System.out.println("The Character is Vowel.");

        }

        else

        {

            System.out.println("The Character is not Vowel.");

        }

    }

}