

JAVA PRACTISE PROGRAMS

//1. Write a program to check whether a character entered is uppercase or lower case alphabet.

```
import java.util.Scanner;
class Extra01 {
    public static void main(String args[]){
        char ch;//variable declaration
        Scanner scan=new Scanner(System.in);

        System.out.println("Enter the character ");
        ch=scan.next().charAt(0);; // store the input from the user

        if(ch>='A' && ch<='Z'){ //if it is true ,display upper case
            System.out.println(ch+" is an upper case letter ");
        }
        else if(ch>='a' && ch<='z'){ //if it is true ,display lower case
            System.out.println(ch+" is a lower case letter ");
        }
        else{
            System.out.println(ch+" is not a Alphabets ");
        }
    }
}
```

//2. Write a program to input month number and year and print number of days in that month

```
import java.util.Scanner;
class Extra02 {
    public static void main(String[] strings) {
        Scanner sc = new Scanner(System.in);

        int number_Of_DaysInMonth = 0;
        String MonthOfName = "Unknown"; //initialization, to be replaced in switch

        System.out.print("Input a month number: ");
        int month = sc.nextInt();
```

```
System.out.print("Input a year: ");
int year = sc.nextInt();

switch (month) {
    case 1:
        MonthOfName = "January";
        number_Of_DaysInMonth = 31;
        break;
    case 2:
        MonthOfName = "February";
        if ((year % 400 == 0) || ((year % 4 == 0) && (year % 100 != 0))) {
            number_Of_DaysInMonth = 29;
        } else {
            number_Of_DaysInMonth = 28;
        }
        break;
    case 3:
        MonthOfName = "March";
        number_Of_DaysInMonth = 31;
        break;
    case 4:
        MonthOfName = "April";
        number_Of_DaysInMonth = 30;
        break;
    case 5:
        MonthOfName = "May";
        number_Of_DaysInMonth = 31;
        break;
    case 6:
        MonthOfName = "June";
        number_Of_DaysInMonth = 30;
        break;
    case 7:
        MonthOfName = "July";
        number_Of_DaysInMonth = 31;
        break;
    case 8:
        MonthOfName = "August";
        number_Of_DaysInMonth = 31;
```

```

        break;
    case 9:
        MonthOfName = "September";
        number_Of_DaysInMonth = 30;
        break;
    case 10:
        MonthOfName = "October";
        number_Of_DaysInMonth = 31;
        break;
    case 11:
        MonthOfName = "November";
        number_Of_DaysInMonth = 30;
        break;
    case 12:
        MonthOfName = "December";
        number_Of_DaysInMonth = 31;
    }
    System.out.print(MonthOfName + " " + year + " has " + number_Of_DaysInMonth + "
days\n");
}
}

```

//3. Write a program to input angles of a triangle and check whether triangle is valid or not

```

import java.util.*;

public class Extra03 {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        int ang1, ang2, ang3, total;
        sc = new Scanner(System.in);

        System.out.println("Enter Triangles First, Second & Thrid Angles = ");
        ang1 = sc.nextInt();
        ang2 = sc.nextInt();
        ang3 = sc.nextInt();

        total = ang1 + ang2 + ang3;
    }
}

```

```

        if (total == 180 && ang1 > 0 && ang2 > 0 && ang3 > 0)
        {
            System.out.println("It is a Valid Triangle");
        }
        else {
            System.out.println("It is Not a Valid Triangle");
        }
    }
}

```

//4. Write a program to check whether triangle is equilateral, isosceles or scalene triangle.

```

import java.util.*;
class Extra04 {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        double side1, side2, side3;
        sc = new Scanner(System.in);

        System.out.println("Please Enter Three sides of Triangle ");
        side1 = sc.nextDouble();
        side2 = sc.nextDouble();
        side3 = sc.nextDouble();

        if(side1 == side2 && side2 == side3)
        {
            System.out.println("It is an Equilateral Triangle");
        }
        else if(side1 == side2 || side2 == side3 || side1 == side3)
        {
            System.out.println("It is an Isosceles Triangle");
        }
        else
        {
            System.out.println("It is a Scalene Triangle");
        }
    }
}

```

// 5. Write a program to Calculate Profit or Loss

```
import java.util.Scanner;
class Extra05 {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        float saleAmount, unitPrice, amount;
        sc = new Scanner(System.in);

        System.out.print(" Please Enter the Actual Product Cost : ");
        unitPrice = sc.nextFloat();

        System.out.print(" Please Enter the Selling Price (Market Price) : ");
        saleAmount = sc.nextFloat();

        if(saleAmount > unitPrice )
        {
            amount = saleAmount - unitPrice;
            System.out.println("\n Profit Amount = " + amount);
        }
        else if(unitPrice > saleAmount)
        {
            amount = unitPrice - saleAmount;
            System.out.println("\n Loss Amount = " + amount);
        }
        else
        {
            System.out.println("\n No Profit No Loss! ");
        }
    }
}
```

//6. Write a program to perform input/output of all basis data types

```
import java.util.Scanner;
class Extra06 {
    public static void main(String[] args) {
        // create an object of Scanner class
        Scanner input = new Scanner(System.in);
        // take input from users
        System.out.print("Enter Byte Value: ");
```

```

        byte a=input.nextByte();
        System.out.print("Enter short Value: ");
        short b=input.nextShort();
        System.out.print("Enter Integer Value: ");
        int c=input.nextInt();
        System.out.print("Enter Long Value: ");
        long d=input.nextLong();
        System.out.print("Enter Float Value: ");
        float e=input.nextFloat();
        System.out.print("Enter Double Value: ");
        double f=input.nextDouble();
        System.out.print("Enter Character Value: ");
        char g=input.next().charAt(0);
        System.out.print("Enter Boolean Value: ");
        boolean h=input.nextBoolean();

//Print output
        System.out.println("Byte Value:"+a);
        System.out.println("short Value:"+b);
        System.out.println("Integer Value:"+c);
        System.out.println("Long Value:"+d);
        System.out.println("Float Value:"+e);
        System.out.println("Double Value:"+f);
        System.out.println("Character Value:"+g);

    }
}

// 7. Write a program to enter length in centimeter and convert it into meter and kilometer.
import java.util.Scanner;
class Extra07 {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter the length in centimeter::\n");
        float c = sc.nextFloat();
        float m;
        float k;
        m = (float)(c / 100);
        k = (float)(c / 100000);
        System.out.print("\n");
        System.out.println("Length in Meter    = " + m + " meter");
        System.out.println("Length in Kilometer = " + k + " kilometer");
    }
}

```

```
}  
}
```

//8. Write a program to convert days into years, weeks and days

```
import java.util.*;  
class Extra08  
{  
    public static void main(String[] args) {  
        Scanner input = new Scanner(System.in);  
        int noOfDays, year, month, week, days;  
        System.out.print("Enter Number of Days: ");  
        noOfDays = input.nextInt();  
  
        year = noOfDays/365;  
        noOfDays=noOfDays%365;  
  
        month = noOfDays/31;  
        noOfDays=noOfDays%31;  
  
        week = noOfDays/7;  
        noOfDays=noOfDays%7;  
        System.out.println("Year: " + year);  
        System.out.println("Month: " + month);  
        System.out.println("Week: " + week);  
        System.out.println("Day: " + noOfDays);  
    }  
}
```

// 9. Write a program to enter P, T, R and calculate simple interest

```
import java.util.Scanner;  
class Extra09  
{  
    public static void main (String args[])  
    {  
        Scanner sc = new Scanner(System.in);  
        System.out.println("Enter Principal amount,rate and time::\n");  
        float p, r, t, si; // principal amount, rate, time and simple interest respectively  
        p = sc.nextFloat();  
        r = sc.nextFloat();  
        t = sc.nextFloat();
```

```

        si = (p*r*t)/100;
        System.out.println("Simple Interest is: " +si);
    }}

```

// 10. Write a program to enter P, T, R and calculate compound interest

```

import java.util.Scanner;
class Extra10 {
    public static void main(String[] args) {
        // create an object of Scanner class
        Scanner input = new Scanner(System.in);
        // take input from users
        System.out.print("Enter the principal: ");
        double principal = input.nextDouble();
        System.out.print("Enter the rate: ");
        double rate = input.nextDouble();

        System.out.print("Enter the time: ");
        double time = input.nextDouble();
        System.out.print("Enter number of times interest is compounded: ");
        int number = input.nextInt();
        double interest = principal * (Math.pow((1 + rate/100), (time * number))) - principal;
        System.out.println("Principal: " + principal);
        System.out.println("Interest Rate: " + rate);
        System.out.println("Time Duration: " + time);
        System.out.println("Number of Time interest Compounded: " + number);
        System.out.println("Compound Interest: " + interest);
    }
}

```

//11. Write a program to check whether a number is even or odd using bitwise operator.

```

import java.util.*;
public class Extra11
{
    public static void main(String[] args)
    {
        Scanner sc=new Scanner(System.in);
        System.out.println("Enter number=");
        int n=sc.nextInt();
        if ((n & 1) == 1)

```

```

        {
System.out.println("Number is Odd");
        }
        else
        {
                System.out.println("Number is Even");
        }
    }
}

```

//12. Write a program to print total number of days in a month using switch case.

```

import java.util.Scanner;
public class Extra12
{

    public static void main(String[] args)
    {
        Scanner sc=new Scanner(System.in);
        System.out.print(" Please Enter Month Number from 1 to 12 (1 = Jan, and 12 =
Dec) : ");
        int month = sc.nextInt();

        switch(month)
        {
            case 1:
            case 3:
            case 5:
            case 7:
            case 8:
            case 10:
            case 12:
                System.out.println("\n 31 Days in this Month");
                break;

            case 4:
            case 6:
            case 9:
            case 11:
                System.out.println("\n 30 Days in this Month");

```

```

        break;

    case 2:
        System.out.println("Enter Year:");
        int year = sc.nextInt();
        if((year%400==0)||((year%4==0)&&(year%100!=0)))
            System.out.println("\n 29 Days in this Month");
        else
            System.out.println("\n 28 Days in this Month");
        break;

    default:
        System.out.println("\n Please enter Valid Number between 1 to
12");
    }
}

```

//13. Write a program to find maximum of three numbers using ternary operator.

```

import java.util.*;
class Extra13
{
    public static void main(String args[])
    {
        Scanner sc=new Scanner(System.in);
        System.out.println("Enter a,b,c=");
        int a=sc.nextInt();
        int b=sc.nextInt();
        int c=sc.nextInt();
        int max = (a > b) ? (a > c ? a : c) : (b > c ? b : c);
        System.out.println("Maximum number =" + max);
    }
}

```

//14. Write a program to convert temperature from Fahrenheit to Celsius and Celsius to Fahrenheit based on user input.

```

import java.util.*;
class Extra14
{

```

```

public static void main(String arg[])
{
    double f,c;
    Scanner sc=new Scanner(System.in);
    System.out.println("Choose type of conversion \n 1.Fahrenheit to Celsius \n
2.Celsius to Fahrenheit");
    int ch=sc.nextInt();
    switch(ch)
    {
        case 1: System.out.println("Enter Fahrenheit temperature");
                f=sc.nextDouble();
                c=(f-32)*5/9;
                System.out.println("Celsius temperature is = "+c);
                break;
        case 2: System.out.println("Enter Celsius temperature");
                c=sc.nextDouble();
                f=((9*c)/5)+32;
                System.out.println("Fahrenheit temperature is = "+f);
                break;
        default: System.out.println("please choose valid choice");
    }
}
}

```

//15. Write a program to take a value from user as input from all sides of a triangle and check whether the triangle is valid or not. Using if – else.

Hint: A triangle is valid if sum of its two sides is greater than the third side. If three sides are a, b and c, then three conditions should be met.

```

1.a + b > c
2.a + c > b
3.b + c > a
*/

```

```

import java.util.*;
class Extra15
{
    public static void main(String args[])
    {
        Scanner sc=new Scanner(System.in);
        System.out.println("Enter a,b,c=");
    }
}

```

```

        int a=sc.nextInt();
        int b=sc.nextInt();
        int c=sc.nextInt();
        if (a + b <= c || a + c <= b || b + c <= a)
            System.out.print("Invalid");
        else
            System.out.print("Valid");
    }
}

```

//16. Write a program to take a value from the user as input any character and check whether it is the alphabet, digit or special character. Using if – else.

```

import java.util.*;

class Extra16
{
    public static void main(String [] args)
    {
        Scanner sc=new Scanner(System.in);
        System.out.print("Enter character = ");
        char ch=sc.next().charAt(0);
        if((ch>=65 && ch<=90) || (ch>=97 && ch<=122))
        {
            System.out.println("Entered character is Alphabet");
        }
        else if(ch>=48 && ch<=57)
        {
            System.out.println("Entered character is Digit");
        }
        else
        {
            System.out.println("Entered character is a special character");
        }
    }
}

```

```

    }
}
//Output
/*
Enter character = A
Entered character is Alphabet
Enter character = z
Entered character is Alphabet

Enter character = 8
Entered character is Digit
Enter character = *
Entered character is a special character
*/

```

//17. Write a program to take the hours and minutes as input by the user and show that whether it is AM or PM using if – else statement.

```

import java.util.*;

class Extra17
{
    public static void main(String[] args)
    {
        double h,m,total_hour;
        Scanner sc=new Scanner(System.in);
        System.out.println("Enter Hours");
        h=sc.nextDouble();
        System.out.println("Enter Minutes");
        m=sc.nextDouble();
        total_hour=h+(m/60);
        System.out.println("total_hour="+total_hour);
    }
}

```

```

        if(total_hour>=12 && total_hour<24)
        {
            System.out.println("PM");
        }
        else
        {
            System.out.println("AM");
        }
    }
}

```

//Output

/*Enter Hours

10

Enter Minutes

180

total_hour=13.0

PM

Enter Hours

2

Enter Minutes

500

total_hour=10.333333333333334

AM */

//18. Write a program to input any number from user and if it is even number convert it into its upper nearest odd number or if it is odd number convert it into its lower nearest even number.

```
import java.util.*;
```

```
class Extra18
```

```
{
```

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

```

    {
        int n;
        Scanner sc=new Scanner(System.in);
        System.out.println("Enter Number");
        n=sc.nextInt();
        if(n%2==0)
        {
            System.out.println("Entered number is even");
            System.out.println("The upper nearest odd number of entered
number="+n+1));
        }
        else
        {
            System.out.println("Entered number is odd");
            System.out.println("The lower nearest even number of entered number="+n-
1));
        }
    }
}

```

//Output

/*

Enter Number

10

Entered number is even

The upper nearest odd number of entered number=11

Enter Number

37

Entered number is odd

The lower nearest even number of entered number=36

```
*/
```

//19. Write a program to print ASCII value of the character

```
import java.util.*;
```

```
class Extra19
```

```
{
```

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

```
    {
```

```
        char ch;
```

```
        Scanner sc=new Scanner(System.in);
```

```
        System.out.println("Enter Character");
```

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

```
        System.out.println("The Entered character is="+ch);
```

```
        System.out.println("The ascii value of Entered character is="+((int)ch));
```

```
    }
```

```
}
```

//Output

```
/*
```

```
Enter Character
```

```
A
```

```
The Entered character is=A
```

```
The ascii value of Entered character is=65
```

```
Enter Character
```

```
9
```

```
The Entered character is=9
```

```
The ascii value of Entered character is=57
```

```
Enter Character
```

```
@
```

```
The Entered character is=@
```

The ascii value of Entered character is=64

```
*/
```

//20. Write a program to read integer N and print the first three powers (N1 , N2 , N3).

```
import java.util.*;
```

```
class Extra20
```

```
{
```

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

```
    {
```

```
        int N;
```

```
        Scanner sc=new Scanner(System.in);
```

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

```
        N=sc.nextInt();
```

```
        System.out.println("The power one of entered number N="+N);
```

```
        System.out.println("The power two of entered number N="+N*N);
```

```
        System.out.println("The power three of entered number N="+N*N*N);
```

```
    }
```

```
}
```

```
//Output
```

```
/*
```

```
Enter Number
```

```
5
```

```
The power one of entered number N=5
```

```
The power two of entered number N=25
```

```
The power three of entered number N=125
```

```
*/
```

//21. A shop will give discount of 10% if the cost of purchased quantity is more than 1000. Ask user for quantity. Suppose, one unit will cost 100. Judge and print total cost for user.

Solution:

```
import java.util.*;

class Extra21 {

    public static void main(String args[]){

        int quantity;

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

        Scanner sc = new Scanner(System.in);

        quantity = sc.nextInt();

        double discount = ((quantity*100)-((0.1)*(quantity*100)));

        if (quantity*100 > 1000){

            System.out.println("Cost is: " +discount);

        }

        else{

            System.out.println("Cost is: "+ quantity*100);

        }

    }

}
```

//22. A company decided to give bonus of 5% to employee if his/her year of service is more than 5 years. Ask user for their salary and year of service and print the net bonus amount.

Solution:

```
import java.util.*;

class Extra22 {

    public static void main(String args[]){

        double salary;

        double years;

        Scanner sc = new Scanner(System.in);

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

        salary = sc.nextDouble();

        System.out.println("Enter total years of service: ");

        years = sc.nextDouble();


        if (years > 5){

            System.out.println("Bonus is: "+(0.05*salary));

        }

        else{

            System.out.println("No Bonus");

        }

    }

}
```

//23. Take input age of 3 people by user and determine oldest and youngest among them.

Solution:

```
import java.util.*;

class Extra23 {

    public static void main(String args[]){

        int a, b, c;

        int oldest=0;

        int youngest=0;

        Scanner sc = new Scanner(System.in);

        System.out.println("Enter age of first Person: ");

        a = sc.nextInt();

        System.out.println("Enter age of Second Person: ");

        b = sc.nextInt();

        System.out.println("Enter age of Third Person: ");

        c = sc.nextInt();

        if ((a>b) && (a>c)){

            if (b>c){

                oldest = a;

                youngest = c;

            }

            else{

                oldest = a;

                youngest = b;

            }

        }

        else if ((b>a) && (b>c)){
```

```
    if (a>c){
        oldest = b;
        youngest = c;
    }
    else{
        oldest = b;
        youngest = a;
    }
}
else if ((c>a) && (c>b)){
    if (a>b){
        oldest = c;
        youngest = b;
    }
    else{
        oldest = c;
        youngest = a;
    }
}
System.out.println("Oldest is: "+oldest);
System.out.println("Youngest is: "+youngest);
}
}
```

//24. Write a program to print absolute value of a number entered by user.

Ex:

Input: 1 Output: 1

Input: -1 Output: 1

Solution:

```
import java.util.*;

class Extra24 {

    public static void main(String args[]){

        double num;

        Scanner sc = new Scanner(System.in);

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

        num = sc.nextDouble();

        if (num<0){

            System.out.println("Absolute value is: "+(-1)*num);

        }

        else{

            System.out.println("Absolute value is: "+num);

        }

    }

}
```

//25. A student will not be allowed to sit in exam if his/her attendance is less than 75%.

Take the following input from user.

a. Number of classes held

b. Number of classes attended

And print percentage of class attended and if student is allowed to sit in exam or not.

Solution:

```
import java.util.*;

class Extra25 {

    public static void main(String args[]){

        int total_lec;

        int attendance;

        Scanner sc = new Scanner(System.in);

        System.out.println("Enter total number of classes held: ");

        total_lec = sc.nextInt();

        System.out.println("Enter total number of classes attended: ");

        attendance = sc.nextInt();

        double percentage = (double)attendance/total_lec*100;

        System.out.println("Total Percentage: "+percentage);

        if (percentage>=75){

            System.out.println("Allowed to sit in exam");

        }

        else{

            System.out.println("Not Allowed to sit in exam");

        }

    }

}
```

```
}
```

//26. Ask user to enter age, sex (M or F), marital status (Y or N) and then using following rules

print their place of service.

a. If employee is female, then she will work only in urban areas.

b. If employee is a male and age is in between 20 to 40 then he may work in anywhere

c. If employee is male and age is in between 40 to 60 then he will work urban areas only.

d. And any other input of age should be print “ERROR”.

Solution:

```
import java.util.*;

class Extra25 {

    public static void main(String args[]){

        int age;

        char sex;

        char marital_status;

        Scanner sc = new Scanner(System.in);

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

        age = sc.nextInt();

        System.out.println("Enter sex: (M or F only) ");

        sex = sc.next().charAt(0);

        System.out.println("Enter Marital Status: (Y or N only) ");

        marital_status = sc.next().charAt(0);

        if (sex == 'F' || sex == 'f'){

            System.out.println("Will work only in Urban Areas.");

        }

    }

}
```

```
else if ((sex == 'M' || sex == 'm') &&(age>=20 && age<=40)) {  
    System.out.println("He will work in anywhere.");  
}  
else if ((sex == 'M' || sex == 'm') &&(age>40 && age<=60)) {  
    System.out.println("He will work only in urban areas.");  
}  
else{  
    System.out.println("ERROR");  
}  
}  
}
```