**Fibo**

**import** java.util.Scanner;

**public** **class** Fibo {

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

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

**int** n,i=0,a=0,b=1,c=0;

System.***out***.println("enter number you wanna create fibonacci series upto");

n=sc.nextInt();

**if**(n==1)

System.***out***.println("0");

**else** **if**(n==2)

System.***out***.println("0 1");

**else** **if**(n>2) {

System.***out***.println("0 1");

**for**(i=1;i<=(n-2);i++) {

c=a+b;

System.***out***.println(""+c);

a=b;

b=c;

}

}

}

}

**Fibor**

**import** java.util.Scanner;

**public** **class** Fibor {

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

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

**int** n;

System.***out***.println("enter number you wanna create fibonacci series upto");

n=sc.nextInt();

**if**(n==1)

System.***out***.println("0");

**else** **if**(n==2)

System.***out***.println("0 1");

**else** **if**(n>2) {

System.***out***.println("0 1");

*fib*(n,0,1);

}

}

**public** **static** **void** fib(**int** num,**int** a,**int** b) {

**while**(num>2) {

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

*fib*(--num,b,(a+b));

num=0;

}

}

}

**Prime**

**import** java.util.Scanner;

**public** **class** Prime {

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

**int** c=0;

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

System.***out***.println("enter a number");

**int** num=sc.nextInt();

**for**(**int** i=2;i<=num;i++) {

**if**(num%i == 0)

c++;

}

**if**(c==1)

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

**else**

System.***out***.println("Not Prime");

}

}

**Bubble**

**import** java.util.Scanner;

**public** **class** bubble {

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

**int** n,i,j,temp;

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

System.***out***.println("enter the size");

n=sc.nextInt();

**int** A[]=**new** **int** [n];

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

System.***out***.println("enter elements");

A[i]=sc.nextInt();

}

System.***out***.println("before sorting");

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

System.***out***.println(A[i]+"");

}

**for**(i=0;i<n-1;i++)

**for**(j=0;j<n-1-i;j++) {

temp=A[j];

A[j]=A[j+1];

A[j+1]=temp;

}

System.***out***.println("after sorting");

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

System.***out***.println(A[i]+"");

}

}

}

**Account**

**import** java.util.\*;

**public** **class** Account {

**int** accno;

String name;

**int** phno;

**float** bal\_amt;

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

**void** getinput() {

System.***out***.println("enter acc no");

accno=sc.nextInt();

System.***out***.println("enter name");

name=sc.next();

System.***out***.println("enter phone number");

phno=sc.nextInt();

bal\_amt=0.0f;

}

**void** deposit() {

System.***out***.println("enter the amount you want to deposit");

**float** amt=sc.nextFloat();

bal\_amt+=amt;

}

**void** withdraw() {

System.***out***.println("enter the amount you want to withdraw");

**float** amt=sc.nextFloat();

**if**(bal\_amt<amt) {

System.***out***.println("insufficient balance");

}

**else**

bal\_amt-=amt;

}

**void** display() {

System.***out***.println("Name"+name);

System.***out***.println("phone number"+phno);

System.***out***.println("account number"+accno);

System.***out***.println("balance amount"+bal\_amt);

}

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

Account ob=**new** Account();

System.***out***.println("enter details");

ob.getinput();

**int** ch;

**do**{

System.***out***.println("1.Deposit 2.Withdraw 3.Display 4.Exit");

System.***out***.println("enter choice");

ch=ob.sc.nextInt();

**switch**(ch) {

**case** 1:System.***out***.println("Deposit");

ob.deposit();

**break**;

**case** 2:System.***out***.println("withdraw");

ob.withdraw();

**break**;

**case** 3:System.***out***.println("display");

ob.display();

**break**;

**case** 4:System.***out***.println("exit");

**break**;

**default**:System.***out***.println("invalid choice");

}

}**while**(ch!=4);

}

}

**Stacks**

**import** java.util.Scanner;

**public** **class** Stacks {

**int** size;

**int** top;

**int** stacks[];

Stacks(**int** size,**int** top){

**this**.size=size;

**this**.top=top;

**this**.stacks=**new** **int**[size];

}

**public** **void** push(**int** ele) {

**if**(top==size-1) {

System.***out***.println("Stackoverflow");

}

**else**

stacks[++top]=ele;

System.***out***.println("element added successfully");

}

**public** **int** pop() {

**if**(top==-1) {

**return** -1;

}

**else**

**return** stacks[top--];

}

**public** **void** display() {

**if**(top==-1) {

System.***out***.println("the stack is empty");

}

**else** {

System.***out***.println("the elements are");

**for**(**int** i=top;i>=0;i--) {

System.***out***.println(stacks[i]+"");

}

}

}

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

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

System.***out***.println("enter size");

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

Stacks ob =**new** Stacks(size,-1);

System.***out***.println("1.push");

System.***out***.println("2.pop");

System.***out***.println("3.display");

System.***out***.println("4.exit");

**while**(**true**) {

System.***out***.println("enter choice");

**int** ch=sc.nextInt();

**switch**(ch) {

**case** 1:System.***out***.println("enter element");

**int** ele1=sc.nextInt();

ob.push(ele1);

**break**;

**case** 2: **int** ele2=ob.pop();

**if**(ele2!=-1) {

System.***out***.println("element popped"+ele2);

}

**else**

{

System.***out***.println("Stack underflow");

}

**break**;

**case** 3: ob.display();

**break**;

**case** 4: System.*exit*(0);

**break**;

**default**:System.***out***.println("invalid choice");

}

}

}

}

**Complex**

**import** java.util.\*;

**public** **class** Complex {

**double** r1,r2,i1,i2;

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

Complex(){

r1=+0.0;

r2=+0.0;

i1=+0.0;

i2=+0.0;

}

**void** add() {

System.***out***.println("The sum is"+(r1+r2)+"+("+(i1+i2)+")i");

}

**void** diff() {

System.***out***.println("the difference is"+(r1-r2)+"+("+(i1-i2)+")i");

}

**void** mul() {

System.***out***.println("the product is"+(r1\*r2-i1\*i2)+"+("+(r1\*i2+r2\*i1)+")i");

}

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

Complex ob=**new** Complex();

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

System.***out***.println("enter first real and imaginary");

ob.r1=sc.nextInt();

ob.i1=sc.nextInt();

System.***out***.println("enter second real and imaginary");

ob.r2=sc.nextInt();

ob.i2=sc.nextInt();

System.***out***.println("1.ADD 2.SUB 3.MUL 4.EXIT");

System.***out***.println("entr choice");

**int** ch=sc.nextInt();

**switch**(ch) {

**case** 1:ob.add();

**break**;

**case** 2:ob.diff();

**break**;

**case** 3:ob.mul();

**break**;

**case** 4 :System.*exit*(0);

**break**;

**default**:System.***out***.println("invalid choice");

}

}

}

**Matrices**

**import** java.util.\*;

**class** product {

**int** i,j,k, m,n,A[][];

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

product(){

System.***out***.println("enter no of rows and columns");

m=sc.nextInt();

n=sc.nextInt();

A=**new** **int**[m][n];

}

product(product ob1,product ob2) {

m=ob1.m;

n=ob2.n;

A=**new** **int**[m][n];

**for**(i=0;i<m;i++) {

**for**(j=0;j<n;j++) {

A[i][j]=0;

**for**(k=0;k<ob2.m;k++) {

A[i][j]+=ob1.A[i][k]\*ob2.A[k][j];

}

}

}

}

**void** input() {

**for**(i=0;i<m;i++) {

**for**(j=0;j<n;j++) {

System.***out***.println("enter elements");

A[i][j]=sc.nextInt();

}

}

}

**void** display() {

**for**(i=0;i<m;i++) {

**for**(j=0;j<n;j++) {

System.***out***.println(A[i][j]+"");

System.***out***.println();

}

}

}

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

product ob1=**new** product();

product ob2=**new** product();

**if**(ob1.n==ob2.m) {

System.***out***.println("enter 1st mat");

ob1.input();

System.***out***.println("enter 2nd mat");

ob2.input();

product ob3=**new** product(ob1,ob2);

System.***out***.println("first matrice");

ob1.display();

System.***out***.println("second matrice");

ob2.display();

System.***out***.println("product matrice");

ob3.display();

}

**else** {

System.***out***.println("multi not possible");

}

}

}

**Strings**

**import** java.util.\*;

**public** **class** strings {

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

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

System.***out***.println("1.extract");

System.***out***.println("2.extract");

System.***out***.println("3.extract");

System.***out***.println("4.extract");

System.***out***.println("5.extract");

System.***out***.println("6.extract");

System.***out***.println("enter choice");

**int** ch=sc.nextInt();

**switch**(ch) {

**case** 1:System.***out***.println("enter string");

String s=sc.next();

System.***out***.println("enter pos where you wanna extract from");

**int** n=sc.nextInt();

System.***out***.println("enter amount of characters u wanna extract from");

**int** m=sc.nextInt();

String k=s.substring(n-1,m+n-1);

System.***out***.println("Extracted"+k);

**break**;

**case** 2:System.***out***.println("enter string");

s=sc.next();

System.***out***.println("enter the word you wanna find occurences for");

k=sc.next();

**int** counter=0;

String arr[]=s.split("");

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

**if**(arr[i].equals(k)) {

counter++;

}

}

System.***out***.println("the number of occurences"+counter);

**break**;

**case** 3:System.***out***.println("enter string");

s=sc.next();

System.***out***.println("enter string you wanna replace");

k=sc.next();

System.***out***.println("enter string you wanna replace with");

String p=sc.next();

String c=s.replace(k, p);

System.***out***.println("replaced string"+c);

**break**;

**case** 4:System.***out***.println("enter string");

s=sc.next();

k=s.toLowerCase();

**char** arr2[]=k.toCharArray();

Arrays.*sort*(arr2);

p=**new** String(arr2);

System.***out***.println("alpabetical"+p);

**break**;

**case** 5:System.***out***.println("enter string");

s=sc.next();

System.***out***.println("enter string");

k=sc.next();

**boolean** cmp=s.equalsIgnoreCase(k);

**if**(cmp) {

System.***out***.println("equal");

}

**else** {

System.***out***.println("not equal");

}

**break**;

**case** 6:System.***out***.println("enter string ");

k=sc.next();

System.***out***.println("enter string ");

s=sc.next();

p=k.concat(s);

System.***out***.println("concat"+p);

**break**;

**default**:System.***out***.println("invalid");

}

}

}

**Personal**

Employee.java:

**package** Personal;

**class** Salary{

**float** da,hra,basic,total;

Salary(**float** basic){

**this**.basic=basic;

hra=(**float**)(basic\*0.4);

da=(**float**)(basic\*0.6);

total=(hra+da+basic);

}

}

**public** **class** Employee{

String name,education;

**int** yearsofexp,noofloans,loanamt,age,basic,tax;

Salary salary;

Employee(String name,**int** age,String education,**int** yearsofexp,**int** noofloans,**int** loanamt,**int** basic){

**this**.basic=basic;

**this**.education=education;

**this**.name=name;

**this**.age=age;

**this**.yearsofexp=yearsofexp;

**this**.noofloans=noofloans;

**this**.loanamt=loanamt;

salary=**new** Salary(basic);

}

**void** isEligible() {

**if**((loanamt<=salary.total/2)&&(noofloans<5)) {

System.***out***.println("Eligible for loan");

}

**else** {

System.***out***.println("not eligible");

}

}

**void** taxPay() {

**if**(salary.total<250000) {

tax=0;

}

**else** **if**((salary.total>250000)&&(salary.total<5000000)) {

tax=(**int**)(0.1\*salary.total);

}

}

**void** isEligiblePromotion() {

**if**(yearsofexp>10) {

System.***out***.println("promotion eligible");

}

**else** {

System.***out***.println("no promotion eligible");

}

}

**void** Display() {

System.***out***.println("name: " + name);

System.***out***.println("age :" + age);

System.***out***.println("education :" + education);

System.***out***.println("Years of Experience: " + yearsofexp);

System.***out***.println("Number of Loans: " + noofloans);

System.***out***.println("Salary: " + salary.total);

isEligible();

System.***out***.println("The tax to be paid is " + tax);

isEligiblePromotion();

System.***out***.println("\n\n\n");

}

}

EmployeeDriver.java:

**package** Personal;

**import** java.util.Scanner;

**public** **class** EmployeeDriver {

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

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

System.***out***.println("Enter the number of employees to be created");

**int** num = sc.nextInt();

Employee employees[] = **new** Employee[num];

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

System.***out***.println("Enter the information for employee number "+(i+1));

System.***out***.println("Enter the name");

sc.nextLine();

String name = sc.nextLine();

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

**int** age = sc.nextInt();

System.***out***.println("Enter Education");

sc.nextLine();

String education = sc.nextLine();

System.***out***.println("Enter years of experience");

**int** yearsofexp = sc.nextInt();

System.***out***.println("Enter number of Loans");

**int** noofloans = sc.nextInt();

System.***out***.println("Enter the basic salary");

**int** basic = sc.nextInt();

System.***out***.println("Enter the loan amount");

**int** loanAmount = sc.nextInt();

employees[i] = **new** Employee(name, age, education, yearsofexp, noofloans, basic, loanAmount);

}

**for** (**int** j = 0; j < num; j++) {

System.***out***.println("This is employee number "+(j+1)+"'s Information");

employees[j].Display();

System.***out***.println("\n\n\n");

}

}

}

**Circle**

**import** java.util.\*;

**public** **class** Circle {

**double** r;

Circle(**double** r){

**this**.r=r;

}

**double** area() {

**return** Math.***PI***\*Math.*pow*(r, 2);

}

}

**class** Sector **extends** Circle{

**double** ctr\_ang;

Sector(**double** r,**double** ctr\_ang){

**super**(r);

**this**.ctr\_ang=Math.*toRadians*(ctr\_ang);

}

**double** area() {

**return** 0.5\*Math.*pow*(r, 2)\*ctr\_ang;

}

}

**class** Segment **extends** Circle{

**double** h;

Segment(**double** r,**double** h){

**super**(r);

**this**.h=h;

}

**double** area() {

**return** Math.*abs*((Math.*pow*(r, 2)\*Math.*toRadians*((r-h)/r))-((r-h)\*Math.*sqrt*((2\*r\*h)-Math.*pow*(h, 2))));

}

}

**class** Compute{

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

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

System.***out***.println("enter radius");

**double** r=sc.nextDouble();

Circle ob1=**new** Circle(r);

System.***out***.println("enter angle");

**double** ctr\_ang=sc.nextDouble();

Sector ob2=**new** Sector(r,ctr\_ang);

System.***out***.println("enter length of segment");

**double** h=sc.nextDouble();

Segment ob3=**new** Segment(r,h);

System.***out***.println("Area of Circle"+ob1.area());

System.***out***.println("Area of Sector"+ob2.area());

System.***out***.println("Area of Segment"+ob3.area());

}

}

**Vehicle**

**import** java.util.Scanner;

**abstract** **class** Vehiclee

{

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

**int** year\_of\_manufacture,m,sp;

**abstract** **void** getData();

**abstract** **void** putData();

Vehiclee()

{

year\_of\_manufacture=0;

}

}

**class** TwoWheeler **extends** Vehiclee

{

**void** getData()

{

System.***out***.println("Enter the year of manufacture");

year\_of\_manufacture = sc.nextInt();

System.***out***.println("Enter the mileage in Km/L");

m = sc.nextInt();

System.***out***.println("Enter the top speed in Km/Hr");

sp = sc.nextInt();

}

**void** putData()

{

System.***out***.println("Year of manufacture : "+year\_of\_manufacture);

System.***out***.println("Mileage : "+m+"Km/L");

System.***out***.println("Top Speed : "+sp+"Km/Hr");

}

}

**final** **class** FourWheeler **extends** Vehiclee

{

**void** getData()

{

System.***out***.println("Enter the year of manufacture");

year\_of\_manufacture = sc.nextInt();

System.***out***.println("Enter the mileage in Km/L");

m = sc.nextInt();

System.***out***.println("Enter the top speed in Km/Hr");

sp = sc.nextInt();

}

**void** putData()

{

System.***out***.println("Year of manufacture : "+year\_of\_manufacture);

System.***out***.println("Mileage : "+m+"Km/L");

System.***out***.println("Top Speed : "+sp+"Km/Hr");

}

}

**class** MyTwoWheeler **extends** TwoWheeler

{

{

**super**.getData();

**super**.putData();

}

}

**class** Drive

{

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

{

MyTwoWheeler ob = **new** MyTwoWheeler();

}

}

**ArrayList**

**import** java.util.\*;

**public** **class** Queue

{

ArrayList<String> alist = **new** ArrayList<>();

**void** insert(String s)

{

alist.add(s);

}

**void** delete()

{

**if** (alist.isEmpty())

System.***out***.println("UNDERFLOW");

**else** {

System.***out***.println("String deleted is " + alist.get(0));

alist.remove(0);

}

}

**void** display()

{

**if** (alist.isEmpty())

System.***out***.println("UNDERFLOW");

**else**

System.***out***.println(alist);

}

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

{

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

Queue ob = **new** Queue();

**int** ch;

**while** (**true**)

{

System.***out***.println("Press 1 to insert\nPress 2 to delete\nPress 3 to display\nPress 4 to exit");

ch = sc.nextInt();

**switch** (ch) {

**case** 1: System.***out***.println("Enter a string");

sc.nextLine();

ob.insert(sc.nextLine());

**break**;

**case** 2: ob.delete();

**break**;

**case** 3: ob.display();

**break**;

**case** 4: System.*exit*(0);

**default**:System.***out***.println("Incorrect choice");

}

}

}

}

**LinkedList**

**import** java.util.Scanner;

**import** java.util.LinkedList;

**import** java.util.Iterator;

**class** LinkedList1{

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

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

LinkedList<String> ll = **new** LinkedList<String>();

**while**(**true**){

System.***out***.println("1. Insert an element into the linked list");

System.***out***.println("2. List all elements with length less than 5");

System.***out***.println("3. Display the LinkedList");

System.***out***.println("4. Exit!");

System.***out***.print("Enter your choice:\t");

**int** ch = sc.nextInt();

**switch**(ch){

**case** 1:

System.***out***.println("Enter the element to be inserted");

String x = sc.next();

ll.add(x);

System.***out***.println("Element inserted successfully");

**break**;

**case** 2:

**if**(ll.peek() == **null**){

System.***out***.println("The Linked list is empty");

}

**else**{

Iterator<String> itr = ll.iterator();

String e1 = "";

System.***out***.println("The strings with length less than 5 are: ");

**while**(itr.hasNext()){

e1 = itr.next();

**if**(e1.length()<5){

System.***out***.println(e1);

}

}

}

**break**;

**case** 3:

**if**(ll.peek() == **null**){

System.***out***.println("The linked list is empty");

}

**else**{

Iterator<String> itr = ll.iterator();

System.***out***.println("The elements of the linked list are:");

**while**(itr.hasNext()){

System.***out***.println(itr.next());

}

}

**break**;

**case** 4:

System.*exit*(0);

**break**;

**default**:

System.***out***.println("Invalid choice");

}

}

}

}