**Q.No: 1**

Write a java program to create an application that calculates the salary of employees based on their job title. The program should have a superclass called **Employee** with a method **calculateSalary()** that returns the basic salary. There should be two subclasses called **Manager** and **Engineer** which override the calculateSalary() method to add a bonus or overtime pay to the basic salary.

The program should prompt the user to enter the details of a Manager and an Engineer, including their name, basic salary, and either bonus or overtime pay.

The program should then create objects of the Manager and Engineer classes and call their respective calculateSalary() methods. Finally, the program should display the calculated salaries for both employees.

**CODE:**

import java.util.\*;

class Employee

{

String name;

int salary;

Employee(String n,int bs)

{

name=n;

salary=bs;

}

int calculateSalary()

{

return salary;

}

}

class Manager extends Employee

{

int bonus;

Manager(String n,int bs,int b)

{

super(n,bs);

bonus=b;

}

int calculateSalary()

{

return (super.calculateSalary()+bonus);

}

}

class Engineer extends Employee

{

int otpay;

Engineer(String n,int bs,int pay)

{

super(n,bs);

otpay=pay;

}

int calculateSalary()

{

return (super.calculateSalary()+otpay);

}

}

class HelloWorld {

public static void main(String[] args) {

Scanner sc=new Scanner(System.in);

String managername=sc.next();

int basics=sc.nextInt();

int bon=sc.nextInt();

Manager man=new Manager(managername,basics,bon);

System.out.println("Manager Name:"+man.name+"\n"+"Manager Salary:"+man.calculateSalary());

System.out.println();

String engineername=sc.next();

int ebasics=sc.nextInt();

int otp=sc.nextInt();

Engineer eng=new Engineer(engineername,ebasics,otp);

System.out.println("Engineer Name:"+eng.name+"\n"+"Engineer Salary:"+eng.calculateSalary());

}

}

**INPUT / OUTPUT:**

Tharun 50000 10000

Manager Name:Tharun

Manager Salary:60000

Gautam 40000 5000

Engineer Name:Gautam

Engineer Salary:45000

**Q.No: 2**

A secret code encrypts a message by putting it in an array and reading down the columns (blanks are replaced by asterisks and full stops are added to fill up the array). Write a program that encrypts an input string.

**CODE:**

import java.util.\*;

class HelloWorld {

public static void main(String[] args) {

Scanner sc=new Scanner(System.in);

String s=sc.nextLine();

char[] ch=s.toCharArray();

int l=s.length();

int n=l/6;

if(l%6!=0)

{

n++;

}

char m[][]=new char[n][6];

int p=0;

for(int i=0;i<n;i++)

{

for(int j=0;j<6;j++)

{

if(p>=l)

{

m[i][j]='.';

}

else

{

if(ch[p]==' ')

{

m[i][j]='\*';

}

else

{

m[i][j]=ch[p];

}

}

p++;

}

}

System.out.println("Before Ecnryption:");

for(int i=0;i<n;i++)

{

for(int j=0;j<6;j++)

{

System.out.print(m[i][j]);

}

//System.out.println();

}

System.out.println();

System.out.println("After Ecnryption:");

for(int i=0;i<6;i++)

{

for(int j=0;j<n;j++)

{

System.out.print(m[j][i]);

}

//System.out.println();

}

System.out.println();

System.out.println("Matrix:");

for(int i=0;i<n;i++)

{

for(int j=0;j<6;j++)

{

System.out.print(m[i][j]);

}

System.out.println();

}

}

}

**INPUT / OUTPUT:**

LETS GO TO THE SANDWICH SHOP TODAY

Before Ecnryption:

LETS\*GO\*TO\*THE\*SANDWICH\*SHOP\*TODAY..

After Ecnryption:

LOHDSOE\*EWHDTT\*IOASOSCPY\*\*AH\*.GTN\*T.

Matrix:

LETS\*G

O\*TO\*T

HE\*SAN

DWICH\*

SHOP\*T

ODAY..

**Q.No: 3**

Manoj is working as a ticket checker in sathyam cinemas. Due to overcrowding, everyone is asked to form a queue. so people who came together got separated in the queue. People who came together are considered to be a single group. Always assume that the person of each group who is standing first in the queue holds the ticket. You have to check the ticket of each person and make sure all the members of his group enter the screen along with him.

**CODE:**

import java.util.\*;

class HelloWorld {

public static void main(String[] args) {

System.out.print("Input:");

Scanner sc=new Scanner(System.in);

String s=sc.nextLine();

String p="";

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

{

if(p.contains(String.valueOf(s.charAt(i))))

{

continue;

}

else

{

int count=1;

for(int j=i+1;j<s.length();j++)

{

if(s.charAt(j)==s.charAt(i))

{

count++;

}

}

for(int j=0;j<count;j++)

{

p+=s.charAt(i);

}

}

}

System.out.print("Output:"+p);

}

}

**INPUT / OUTPUT:**

Input:abcaaubcc

Output:aaabbcccu

**Q.No: 4**

Write a program to find the smallest and largest word in the given string.

**CODE:**

import java.util.\*;

class HelloWorld {

public static void main(String[] args) {

System.out.print("Input:");

Scanner sc=new Scanner(System.in);

String s=sc.nextLine();

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

int min=1000,max=0;

String p="",k="";

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

{

if(q[i].length()<min)

{

min=q[i].length();

p=q[i];

}

if(q[i].length()>max)

{

max=q[i].length();

k=q[i];

}

}

System.out.print("Smallest word:"+p+"\n"+"Largest word:"+k);

}

}

**INPUT / OUTPUT:**

Input:an apple for a day

Smallest word:a

Largest word:apple

**Q.No: 5**

Write a program to remove consecutive vowels from a string.

**CODE:**

import java.util.\*;

class HelloWorld {

public static void main(String[] args) {

Scanner sc=new Scanner(System.in);

System.out.print("Input:");

String s=sc.nextLine();

int l=s.length();

String k="";

for(int i=0;i<l-1;i++)

{

char c=Character.toLowerCase(s.charAt(i));

char p=Character.toLowerCase(s.charAt(i+1));

if((c=='a'||c=='e'||c=='i'||c=='o'||c=='u')&&(p=='a'||p=='e'||p=='i'||p=='o'||p=='u'))

{

continue;

}

else

{

k+=s.charAt(i);

}

}

if(s.charAt(l-1)!=s.charAt(l-2))

{

k+=s.charAt(l-1);

}

System.out.print("Ouput:"+k);

}

}

**INPUT / OUTPUT:**

Input:cool

Ouput:col