public class Company {

private String name;

private Employee[] arrEmps;

private int nbe;

Company(String name, int size){

this.name = name;

arrEmps = new Employee[size];

nbe = 0;

}

public boolean addEmployee(Employee e){

if(nbe >= arrEmps.length)

return false;

if(e instanceof Manager)

arrEmps[nbe++] = new Manager((Manager)e);

else if(e instanceof Consultant)

arrEmps[nbe++] = new Consultant((Consultant)e);

else

arrEmps[nbe++] = new Employee(e);

return true;

}

public void displayAll(){

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

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

arrEmps[i].display();

}

public int countConsultant(){

int count=0;

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

if(arrEmps[i] instanceof Consultant)

count++;

return count;

}

public Employee[] getHighSalary(double s){

Employee[] res = new Employee[nbe];

int j=0;

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

if( arrEmps[i].calculateSalary() > s)

res[j++]= arrEmps[i];

return res;

}

public Manager[] getManagers(int n){

Manager[] res = new Manager[nbe];

int j=0;

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

if(arrEmps[i] instanceof Manager)

if(((Manager)arrEmps[i]).getNbEmps()>n)

res[j++]=(Manager) arrEmps[i];

return res;

}

}

///////////////////////////

public class Consultant extends Employee{

private int hoursPerWeek ;

Consultant(String name, int rank, int yearsOfExperince, int hoursPerWeek ) {

super(name, rank, yearsOfExperince);

this.hoursPerWeek = hoursPerWeek ;

}

Consultant(Consultant c){

super(c);

hoursPerWeek= c.hoursPerWeek;

}

public int getHoursPerWeek() {

return hoursPerWeek;

}

public void display(){

super.display();

System.out.println(" Hours per Week: "+hoursPerWeek);

}

public double calculateSalary(){

return hoursPerWeek \* 1000 + getRank() \* 500 ;

}

}

//////////////////////////

public class Employee {

private String name;

private int rank;

private int yearsOfExperince;

Employee(String name, int rank, int yearsOfExperince)

{

this.name = name;

this.rank = rank;

this.yearsOfExperince = yearsOfExperince;

}

Employee(Employee e){

name = e.name;

rank = e.rank;

yearsOfExperince = e.yearsOfExperince;

}

public int getRank() {

return rank;

}

public int getYearsOfExperince() {

return yearsOfExperince;

}

public void display(){

System.out.print("name: "+name+" Rank: "+rank+" Years of Exp: "+ yearsOfExperince +" Salary: "+ calculateSalary());

}

public double calculateSalary() {

return yearsOfExperince \* 500 + rank \* 1000;

}

}

////////////////////////////

public class Manager extends Employee{

private int nbEmps;

Manager(String name, int rank, int yearsOfExperince, int nbEmps) {

super(name, rank, yearsOfExperince);

this.nbEmps = nbEmps;

}

Manager(Manager m){

super(m);

this.nbEmps = m.nbEmps;

}

public int getNbEmps() {

return nbEmps;

}

public void display(){

super.display();

System.out.println(" Number of employees: "+nbEmps+" Salary: ");

}

public double calculateSalary(){

return getYearsOfExperince() \* 500 + getRank() \* 1500 + nbEmps \* 10;

}

}

////////////////////////////

public class Test {

public static void main(String[] args) {

Employee emp = new Employee("Ahmed",8,7);

Manager manager = new Manager("Ali",12,12,20);

Consultant consultant = new Consultant("Hamad",10,9,19);

Company company = new Company("STC", 10);

company.addEmployee(emp);

company.addEmployee(manager);

company.addEmployee(consultant);

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

company.displayAll();

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

System.out.println("Number of Consultants = "+company.countConsultant());

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

Employee[] a = company.getHighSalary(20000);

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

if(a[i] != null)

a[i].display();

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

Manager[] m = company.getManagers(10);

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

if(m[i] != null)

m[i].display();

}

}