import java.util.ArrayList;

import java.util.Date;

import java.util.List;

public class EmployeeManagementSystem {

public static class Employee {

private int intEmployeeID;

private String strFirstName;

private String strLastName;

private String strSSN;

private Date dtDOB;

private String strPIN;

public Employee(int employeeID, String firstName, String lastName, String ssn, Date dob, String pin) {

this.intEmployeeID = employeeID;

this.strFirstName = firstName;

this.strLastName = lastName;

this.strSSN = ssn;

this.dtDOB = dob;

this.strPIN = pin;

}

public int getEmployeeID() { return intEmployeeID; }

public String getFirstName() { return strFirstName; }

public String getLastName() { return strLastName; }

public String getSSN() { return strSSN; }

public Date getDOB() { return dtDOB; }

public String getPIN() { return strPIN; }

public void setEmployeeID(int employeeID) { this.intEmployeeID = employeeID; }

public void setFirstName(String firstName) { this.strFirstName = firstName; }

public void setLastName(String lastName) { this.strLastName = lastName; }

public void setSSN(String ssn) { this.strSSN = ssn; }

public void setDOB(Date dob) { this.dtDOB = dob; }

public void setPIN(String pin) { this.strPIN = pin; }

@Override

public String toString() {

return "Employee[ID=" + intEmployeeID +

", Name=" + strFirstName + " " + strLastName +

", SSN=" + strSSN +

", PIN=" + strPIN +

", DOB=" + dtDOB + "]";

}

}

// ============================================================================

// Department Class

// ============================================================================

public static class Department {

private String strDepartmentName; // Department name

private List<Employee> lstEmployees; // List of employees

public Department(String departmentName) {

this.strDepartmentName = departmentName;

this.lstEmployees = new ArrayList<Employee>();

}

public void AddEmployee(Employee employee) {

lstEmployees.add(employee);

}

public String getDepartmentName() { return strDepartmentName; }

public List<Employee> getEmployees() { return lstEmployees; }

@Override

public String toString() {

return "Department: " + strDepartmentName;

}

}

// ============================================================================

// Company Class

// ============================================================================

public static class Company {

// [Hungarian Notation] Private fields.

private String strCompanyName;

private String strCEO;

private String strCTO;

private String strCFO;

private List<Department> lstDepartments;

public Company(String companyName, String ceo, String cto, String cfo) {

this.strCompanyName = companyName;

this.strCEO = ceo;

this.strCTO = cto;

this.strCFO = cfo;

this.lstDepartments = new ArrayList<Department>();

}

public void AddDepartment(Department department) {

lstDepartments.add(department);

}

public String getCompanyName() { return strCompanyName; }

public String getCEO() { return strCEO; }

public String getCTO() { return strCTO; }

public String getCFO() { return strCFO; }

public List<Department> getDepartments() { return lstDepartments; }

@Override

public String toString() {

return "Company: " + strCompanyName +

"\nCEO: " + strCEO +

"\nCTO: " + strCTO +

"\nCFO: " + strCFO;

}

}

// ============================================================================

// Main Method (Entry Point)

// ============================================================================

public static void main(String[] args) {

Department hrDepartment = new Department("Human Resources");

Department itDepartment = new Department("Information Technology");

// Create Employee objects using Pascal for object creation.

Employee emp1 = new Employee(1001, "Alice", "Smith", "SSN123456", new Date(), "PIN98765");

Employee emp2 = new Employee(1002, "Bob", "Johnson", "SSN789012", new Date(), "PIN54321");

// Add employees to departments.

hrDepartment.AddEmployee(emp1);

itDepartment.AddEmployee(emp2);

// Create a Company and add departments.

Company company = new Company("Tech Solutions Inc.", "John CEO", "Emily CTO", "Michael CFO");

company.AddDepartment(hrDepartment);

company.AddDepartment(itDepartment);

// Display Company Information.

System.out.println(company);

System.out.println("\n--- Departments and Employees ---");

for (Department dept : company.getDepartments()) {

System.out.println(dept);

for (Employee emp : dept.getEmployees()) {

System.out.println(" " + emp);

}

}

}

}