**PROG10082 Object Oriented Programming 1 – JAVA**

**Assignment 5**

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**Problem:** Develop an “Address Book” application to manage personal contacts information.

**Object specifications**

Each contact in an address book is an object.

Each contact object has properties like contact name, mobile phone, email, the date when the contact was added/updated to the address book, and a comment. Comment can be any text note.

Each property of a contact can be updated as needed.

**Coding recommendations**

**Contact class**

1. a. For complete encapsulation, each contact property should have private visibility
2. b. no-arg constructor and at least one constructor with arguments
3. c. Getter and setter method for each property
4. d. Overridden toString() method which should return contact information as a String that can be used to display the contact with each instance variable with appropriate label on a line.

**Address book application**

1. The main method of the Address Book application should

a. Create an array of 5 Contact objects

b. Create two Contact objects using no-arg constructor and set their properties using setter methods of the Contact class

c. Create three Contact objects using constructor with arguments

d. Display the contact data on the console using toString() method of each object in the array with ***enhanced-for loop*** as a formatted table. Each data item should be left-justified in its space. Name should be in 20 spaces, Email in 25 spaces, phone number in 15 spaces, and the date in 10 spaces. Comment property should not be printed

2. Output of the application should look like

**Address Book of** *lastName, firstName*:

Contact Name Email Phone Date

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**Solution:**

**Solution**

I have a class named Contact. It has attributes name. mobilePhone, date, email, and comment. It has two type of constructor, one without any parameter and one with all the attributes as the parameters. There are setter public methods for setting the attributes and public getter methods for returning each attribute. There is also a public method toString that returns all the value of methods as one string. In another class named Addressbook, I created an array , named entry, of Contacts without with size of 5 Contacts. I initialized three of the entry elements with Contact constructor with parameters and two of them without parameter and used setter for setting the private attributes. Then I used for loop to call toString of every entry to print the Contact objects attributes’ value.

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1. **Source code**

AddressBook…

package Assignment5

import javax.swing.text.AbstractDocument.LeafElement;

public class AddressBook {

    public static void main(String[] args) {

        Contact[] entry=new Contact[5];

        entry[0] = new Contact("Robert", "222-321-8371","aaa@gmail.com",

                                    "2022-12-09","Hi!!!");

        entry[1] = new Contact("Bob","333-345-7648", "aba@gmail.com",

                                    "2022-12-09", "Hi!!!");

        entry[2] = new Contact("Bruce", "222-321-8371", "caa@gmail.com",

                                    "2022-12-09", "Hi!!!");

        entry[3] = new Contact();

        entry[3].setName("Alex");

        entry[3].setEmail("XXX@gmail.com");

        entry[3].setMobilePhone("234-345-3344");

        entry[3].setDate("2022-12-09");

        entry[3].setComment("Hi");

        entry[4] = new Contact();

        entry[4].setName("Amir");

        entry[4].setEmail("Amir@gmail.com");

        entry[4].setMobilePhone("457-467-3854");

        entry[4].setDate("2022-12-09");

        entry[4].setComment("Hi");

        System.out.println("Name        Email        Phone           Date");

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

            System.out.println(entry[i].toString());

        }

    }

}

Contact…

package Assignment5

public class Contact {

    private String name;

    private String mobilePhone;

    private String email;

    private String date;

    private String comment;

    public Contact(){

    }

    public Contact(String name, String mobilePhone, String email, String date, String comment) {

                            this.name = name;

                            this.mobilePhone = mobilePhone;

                            this.email = email;

                            this.date = date;

                            this.comment = comment;

                            }

    public Contact(String name) {

        this.name = name;

    }

    public String getName() {

        return name;

    }

    public void setName(String name) {

        this.name = name;

    }

    public String getMobilePhone() {

        return mobilePhone;

    }

    public void setMobilePhone(String mobilePhone) {

        this.mobilePhone = mobilePhone;

    }

    public String getEmail() {

        return email;

    }

    public void setEmail(String email) {

        this.email = email;

    }

    public String getDate(String date) {

        return date;

    }

    public void setDate(String date) {

        this.date = date;

    }

    public String getComment() {

        return comment;

    }

    public void setComment(String comment) {

        this.comment = comment;

    }

    public String toString() {

        return(this.name+"  "+this.email+"  "+this.mobilePhone+"    "+this.date);

    }

}

**Test cases:**

Name Email Phone Date

Robert aaa@gmail.com 222-321-8371 2022-12-09

Bob aba@gmail.com 333-345-7648 2022-12-09

Bruce caa@gmail.com 222-321-8371 2022-12-09

Alex XXX@gmail.com 234-345-3344 2022-12-09

Amir Amir@gmail.com 457-467-3854 2022-12-09

**Class Diagram**

|  |
| --- |
| AddressBook |
| -name:String  -mobilePhone:String  -email:String  -date:String  -comment:String |
| +setName(name:String)  +setMobilePhone(phone:String)  +setDate(date:String)  +setEmail(email:String)  +setComment(comment:String)  +getName():String  +getEmail():String  +getMobilePhone():String  +getDate():String  +getComment():String  +toString():String |