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Advance Programming c++

COMSC 165-8271

Extend Lab #12, such that there is a separate class ContactMeans that contains the phone number and email as *private* variables, along with *public* functions:

\* one default constructor that sets phone and email to empty.

\* 2 specialized constructors that set just the email, or both phone and email.

\* setter and getter functions for phone and email.

Then each Contact contains an object of ContactMeans.

The purpose is to get practice with classes that contain other classes' objects (aggregation).

Code :

This is the class that was supposed to be created and its Object is in the class Contact, Highlighted in BOLD

**public class ContactMeans{**

private String email;

private String phone;

// constructor

public ContactMeans() {

this.email = " ";

this.phone = " ";

}

// constructor with fields

public ContactMeans(String email, String phone) {

this.email = email;

this.phone = phone;

}

// constructor with fields

public ContactMeans(String email) {

this.email = email;

this.phone = "";

}

// getter for getting email

public String getEmail() {

return email;

}

// setter for setting email

public void setEmail(String email) {

this.email = email;

}

// getter for getting phone

public String getPhone() {

return phone;

}

// setter for setting phone

public void setPhone(String phone) {

this.phone = phone;

}

}

-------------------------------------------------------------------------------------------------------------------------

**public class Contact {**

// private instance variables

**ContactMeans contactMeans;**

private String name;

private String email;

private String phone;

// constructor

public Contact() {

this.name = " ";

this.email = " ";

this.phone = " ";

}

// constructor with fields

public Contact(String name, String email, String phone) {

this.name = name;

this.email = email;

this.phone = phone;

}

// getter for getting name

public String getName() {

return name;

}

// setter for setting name

public void setName(String name) {

this.name = name;

}

// getter for getting email

public String getEmail() {

return email;

}

// setter for setting email

public void setEmail(String email) {

this.email = email;

}

// getter for getting phone

public String getPhone() {

return phone;

}

// setter for setting phone

public void setPhone(String phone) {

this.phone = phone;

}

public static void main(String... args) {

// contacts array

Contact[] contacts = new Contact[10];

// Add three friends data

contacts[0] = new Contact("Friend A", "friend\_a@xmail.com", "6543210");

contacts[1] = new Contact("Friend B", "friend\_b@xmail.com", "6643617");

contacts[2] = new Contact("Friend C", "friend\_c@xmail.com", "6243219");

// add seven contacts with blank data

for (int i = 3; i < 10; i++) {

contacts[i] = new Contact();

}

// Print list

System.out.println("Original Contacts List : ");

System.out.println();

for (int i = 0; i < 10; i++) {

System.out.println(contacts[i].name + " " + contacts[i].email + " " + contacts[i].phone);

}

// change Friend C data

contacts[2].setPhone("6200012");

// Print modified lits

System.out.println("Modified Contacts List after changing friend C phone : ");

System.out.println();

for (int i = 0; i < 10; i++) {

System.out.println(contacts[i].name + " " + contacts[i].email + " " + contacts[i].phone);

}

}

}