

```

package email_Client;

abstract class Recipient {
    private String type;
    private String name;
    private String email;
    private static int objectCount;

    String getType() {
        return type;
    }
    void setType(String type) {
        this.type = type;
    }
    String getName() {
        return name;
    }
    void setName(String name) {
        this.name = name;
    }
    String getEmail() {
        return email;
    }
    void setEmail(String email) {
        this.email = email;
    }
    static int getObjectCount() {
        return objectCount;
    }
    static void setObjectCount(int objectCount) {
        Recipient.objectCount = objectCount;
    }
    Recipient(String name, String email) {
        this.name = name;
        this.email = email;
        objectCount++;
    }
}

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package email_Client;

interface BirthdayGreeting {
    String getBirthdayWish();
    String getBirthday();
}

```

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class PersonalRecipient extends Recipient implements BirthdayGreeting{
    private String nickname;
    private String birthday;

    String getNickname() {
        return nickname;
    }
    void setNickname(String nickname) {
        this.nickname = nickname;
    }
    @Override
    String getBirthday() {
        return birthday;
    }
    void setBirthday(String birthday) {
        this.birthday = birthday;
    }

    PersonalRecipient(String name, String nickname,String email,String
birthday){
        super(name, email);
        this.nickname = nickname;
        this.birthday = birthday;

    }

    @Override
    String getBirthdayWish() {
        return "Wish you a Happy Birthday and hugs and love on your
birthday. " + getName();
    }

}

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```

package email_Client;

import javax.mail.*;
import javax.mail.internet.InternetAddress;
import javax.mail.internet.MimeMessage;
import java.util.Properties;

class SendMail {
    static void sendMail(String email, String subject, String content) {

        final String username = "assignmentoop530@gmail.com";
    }
}

```

```

final String password = "jejwfqlkooiudjdj";

Properties prop = new Properties();
prop.put("mail.smtp.host", "smtp.gmail.com");
prop.put("mail.smtp.port", "587");
prop.put("mail.smtp.auth", "true");
prop.put("mail.smtp.starttls.enable", "true"); //TLS

Session session = Session.getInstance(prop,
    new javax.mail.Authenticator() {
        protected PasswordAuthentication getPasswordAuthentication() {
            return new PasswordAuthentication(username, password);
        }
    });

try {

    Message message = new MimeMessage(session);
    message.setFrom(new InternetAddress("assignmentoop530@gmail.com"));
    message.setRecipients(
        Message.RecipientType.TO,
        InternetAddress.parse(email)
    );
    message.setSubject(subject);
    message.setText("Hello,"
        + "\n\n" + content);

    Transport.send(message);

    //System.out.println("Email sent by sendMail");

} catch (MessagingException e) {
    e.printStackTrace();
}

}

////////////////////////////////////
package email_Client;

import java.io.FileWriter;
import java.io.IOException;
import java.io.PrintWriter;

class UpdateSentMailList {

    static void updateSentMail(String subject, String emailAddress, String
name,String date, String filePath) {

```

```

        try {
            //Create an object of PrintWriter
            PrintWriter print_writer = new PrintWriter(new
FileWriter(filePath, true));

            //Write details to text file
            print_writer.write("\n" + subject + "," + emailAddress + ","
+ name + "," + date);

            //Close PrintWriter Object
            print_writer.close();
        }

        // Catch if exceptions occurs
        catch (IOException e) {

            // Print the exception
            // using getMessage() method
            System.out.print(e.getMessage());
        }

    }
}

```

```

////////////////////////////////////
package email_Client;

```

```

import java.io.BufferedReader;
import java.io.File;
import java.io.FileReader;
import java.io.IOException;
import java.text.SimpleDateFormat;
import java.util.ArrayList;
import java.util.Date;

```

```

class RequireEmailClient {

    private ArrayList<Recipient> clientList = new ArrayList<>();
    private ArrayList<BirthdayGreeting> BirthdayGreetingList = new
ArrayList<>();

```

```

    private String currentDate;
    //create recipient objects
    private Recipient createRecipientObjects (String data) {
        String[] clientList = data.split(":",2);
        String[] dataList = clientList[1].split(",");
        Recipient recipientObj;
    }
}

```

```

        switch(clientList[0]) {
            case "Official":
                recipientObj = new
OfficeRecipient(dataList[0],dataList[1],dataList[2]);
                //System.out.println("Object Created");
                return recipientObj;

            case "Office_friend":
                recipientObj = new
Office_friend(dataList[0],dataList[1],dataList[2],dataList[3]);

                BirthdayGreetingList.add((BirthdayGreeting)recipientObj);
                //System.out.println("Object Created");
                return recipientObj;

            case "Personal":
                recipientObj = new
PersonalRecipient(dataList[0],dataList[1],dataList[2],dataList[3]);

                BirthdayGreetingList.add((BirthdayGreeting)recipientObj);
                //System.out.println("Object Created");
                return recipientObj;

            default:
                System.out.println("Invalid entry found");
                return null;
        }
    }

    void readClientFile(String file_name) {

        try {

            File clientFile = new File(file_name);
            FileReader fileReader = new FileReader(clientFile);
            BufferedReader bufferedReader = new
BufferedReader(fileReader);
            String data;
            while ((data = bufferedReader.readLine()) != null) {
                if (!data.equals("")) {
                    //System.out.println(data);

                    clientList.add(createRecipientObjects(data));
                }
            }
            bufferedReader.close();

        } catch (IOException e) {

        }

    }
}

```

```

        //method to send birthday greeting on the correct day for recipient who has
        birthday on current day
        private void sendGreetingEmail() {
            for(BirthdayGreeting birthdayObj: BirthdayGreetingList ) {
                SimpleDateFormat formatDate = new
SimpleDateFormat("yyyy/MM/dd");
                currentDate = formatDate.format(new Date());
                //System.out.println(curentDate.substring(5));
                if
(birthdayObj.getBirthday().substring(5).equals(currentDate.substring(5))) {
                    Recipient recip = (Recipient)birthdayObj;
                    SendMail.sendMail(recip.getEmail(), ("Happy
Birthday"), birthdayObj.getBirthdayWish());
                    UpdateSentMailList.updateSentMail("Happy Birthday",
recip.getEmail(), recip.getName(), currentDate, "D:\\UoM\\CSE\\Semester02\\CS1040
Program Construction\\Email_Client_Assignment\\sentEmailsList.txt");
                }
            }
            System.out.println("Birthday wishes are sent who has birthday
Today!\\n");
        }

        void startEmailClient() {
            System.out.println("Email Client is Running..!!\\n"
                + "Please wait...");
            try {
                sendGreetingEmail();
            }catch(NullPointerException e) {
            }
        }

        //print who has birthday on entered day
        void findWhoHaveBday(String Enter_day) {
            boolean haveBirthday = false;
            for(BirthdayGreeting birthdayObj: BirthdayGreetingList ) {
                if
(birthdayObj.getBirthday().substring(5).equals(Enter_day.substring(5))) {
                    Recipient recipient1 = (Recipient)birthdayObj;
                    System.out.println(recipient1.getName());
                    haveBirthday = true;
                }
            }
            if (!haveBirthday) {
                System.out.println("No birthdays on "+ Enter_day + "\\n");
            }
        }
    }

```

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}
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////////////////////////////////////////////////////////////////
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```
package email_Client;
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```
import java.io.FileWriter;
import java.io.IOException;
import java.io.PrintWriter;
```

```
class UpdateClientList {
    void updateClientList(String new_recipient_details, String filePath) {
        //System.out.println(new_recipient_details);
        //System.out.println(filePath);

        try {
            //Create an object of PrintWriter
            PrintWriter print_writer = new PrintWriter(new
            FileWriter(filePath, true));

            //Write details to text file
            print_writer.write("\n" + new_recipient_details);

            //Close PrintWriter Object
            print_writer.close();
        }

        // Catch if exceptions occurs
        catch (IOException e) {

            // Print the exception
            // using getMessage() method
            System.out.print(e.getMessage());
        }
    }
}
```

```
}
```

```
////////////////////////////////////////////////////////////////
```

```
package email_Client;
```

```
import java.io.BufferedReader;
import java.io.File;
import java.io.FileInputStream;
import java.io.FileOutputStream;
import java.io.FileReader;
import java.io.IOException;
```



```

import java.io.ObjectInputStream;
import java.io.ObjectOutputStream;
import java.util.ArrayList;

class FindSentMail {
    private static ArrayList<String> sentMailClientList = new ArrayList<>();

    //Finding is there any mails have sent on entered day by reading sentMail
file    static void findSendMail(String date, String file_name) {

        try {
            File clientFile = new File(file_name);
            FileReader fileReader = new FileReader(clientFile);
            BufferedReader bufferedReader = new
BufferedReader(fileReader);
            String data;
            boolean foundSentMail = false;
            while ((data = bufferedReader.readLine()) != null) {
                if (!data.equals("")) {
                    //System.out.println(data);

                    sentMailClientList.add(data);

                    String[] clientList = data.split(",",0);
                    if
((clientList[clientList.length-1]).equals(date)) {
                        foundSentMail = true;
                        System.out.println(clientList[0]+
", " + clientList[1]+ " , " + clientList[2]);
                    }
                }
            }

            if (!foundSentMail) {
                System.out.println("No Emails Found on given date");
            }

            bufferedReader.close();

        } catch (IOException e) {

        }

    }
}

```

```

//serialization sentMailClientList
void saveSentMailListToHardDisk() {
    try {
        FileOutputStream fileOutputStream = new
FileOutputStream("sentEmailListFile.ser");
        ObjectOutputStream objectOutputStream = new
ObjectOutputStream(fileOutputStream);
        objectOutputStream.writeObject(sentMailClientList);
        objectOutputStream.close();
        fileOutputStream.close();
    }catch (IOException e){
        e.printStackTrace();
    }
}

// deserialization sentMailClientList
@SuppressWarnings({ "unchecked", "unused" })
private void retrieveSentEmailList() {
    try {
        FileInputStream fileInputStream = new
FileInputStream("sentEmailListFile.ser");
        ObjectInputStream objectInputStream = new
ObjectInputStream(fileInputStream);
        sentMailClientList = (ArrayList<String>)
objectInputStream.readObject();
        objectInputStream.close();
    }catch(IOException | ClassNotFoundException e) {
        e.printStackTrace();
    }
}
}

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package email_Client;

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//index number - 200530D

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```

//import libraries
import java.util.Scanner;
import java.text.SimpleDateFormat;
import java.util.Arrays;
import java.util.Date;
import java.util.List;

```

```

class Email_Client {

```

```

static void main(String[] args) {

    RequireEmailClient requireEmailClientObj = new RequireEmailClient();
    requireEmailClientObj.readClientFile("clientList.txt");

    // call method to send birthday greeting on the correct day for
recipient who has birthday on current day
    requireEmailClientObj.startEmailClient();

    String sentMailPath = "D:\\UoM\\CSE\\Semester02\\CS1040 Program
Construction\\Email_Client_Assignment\\sentEmailsList.txt";
    String clientPath= "D:\\UoM\\CSE\\Semester02\\CS1040 Program
Construction\\Email_Client_Assignment\\clientList.txt";

    try (Scanner scanner = new Scanner(System.in)) {
        System.out.println("Enter option type: \n"
            + "1 - Adding a new recipient\n"
            + "2 - Sending an email\n"
            + "3 - Printing out all the recipients who have
birthdays\n"
            + "4 - Printing out details of all the emails sent\n"
            + "5 - Printing out the number of recipient objects
in the application");

        int option = scanner.nextInt();

        switch(option){
            case 1:
                // input format - Official:
nimal,nimal@gmail.com,ceo
                // Use a single input to get all the details of a
recipient
                // code to add a new recipient
                // store details in clientList.txt file
                // Hint: use methods for reading and writing
files
                System.out.println("Input Format :\n"
                    +
"Official:<name>,<email>,<designation>\n"
                    +
"Office_friend:<name>,<email>,<designation>,<birthday>\n"
                    +
"Personal:<name>,<nickname>,<email>,<birthday>\n"
                    + "Example inputs:    Official:
nimal,nimal@gmail.com,ceo\n"
                    + "
Office_friend: kamal,kamal@gmail.com,clerk,2000/12/12\n"
                    + "

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```

Personal: sunil,<nick-name>,sunil@gmail.com,2000/10/10\n\n"
                                + "Enter details of the new
recipient .....: ");

                                UpdateClientList new_recipient = new
UpdateClientList();
                                Scanner input1 = new Scanner(System.in);
                                String new_recipient_details = input1.nextLine();

new_recipient.updateClientList(new_recipient_details, clientPath );

                                break;
case 2:
    // input format - email, subject, content
    // code to send an email
    System.out.println("Input Format : "
                        + "<email>,<subject>,<content>\n"
                        + "Enter Email details.....:\n");
    Scanner input2 = new Scanner(System.in);
    String email_details = input2.nextLine();

    // split input and store in list
    List<String> emailDataList =
Arrays.asList(email_details.split(","));

                                System.out.println("Email is sending...Please
Wait...");
                                //call sendMail method in SendMail class

SendMail.sendMail(emailDataList.get(0),emailDataList.get(1),emailDataList.get(2));
                                System.out.println("Email sent\n");

                                //save sent mail details to text file
                                SimpleDateFormat formatDate = new
SimpleDateFormat("yyyy/MM/dd");
                                String curentDate = formatDate.format(new
Date());

UpdateSentMailList.updateSentMail(emailDataList.get(1), emailDataList.get(0), "No
name entered", curentDate, sentMailPath);

                                break;
case 3:
    // input format - yyyy/MM/dd (ex: 2018/09/17)
    // code to print recipients who have birthdays on
the given date

                                System.out.println("Input Format : "
                        + "yyyy/MM/dd (ex: 2018/09/17)\n"
                        + "Enter Date.....:\n");

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```

        Scanner input3 = new Scanner(System.in);
        String input_date = input3.nextLine();

while(!input_date.matches("\\d\\d\\d\\d\\/\\d\\d\\/\\d\\d")) {
    System.out.println("Wrong
Date Format..!!! Enter Again:");
    input_date = input3.nextLine();
}

requireEmailClientObj.findWhoHaveBday(input_date);

        break;
    case 4:
        // input format - yyyy/MM/dd (ex: 2018/09/17)
        // code to print the details of all the emails
sent on the input date
        System.out.println("Input Format : "
            + "yyyy/MM/dd (ex: 2018/09/17)\n"
            + "Enter Date....:\n");
        Scanner input4 = new Scanner(System.in);
        String date_email = input4.nextLine();

while(!date_email.matches("\\d\\d\\d\\d\\/\\d\\d\\/\\d\\d")) {
    System.out.println("Wrong
Date Format..!!! Enter Again:");
    date_email =
input4.nextLine();
}
        FindSentMail.findSendMail(date_email,
sentMailPath);

        break;
    case 5:
        // code to print the number of recipient objects
in the application
        System.out.println("Number of recipient objects
in the application : " + Recipient.getObjectCount()+"\n");
        break;
    default:
        System.out.println("Invalid Input.!!!\n");
}

}

}

// start email client
// code to create objects for each recipient in clientList.txt
// use necessary variables, methods and classes

```

```
}
```

```
//create more classes needed for the implementation (remove the public access  
modifier from classes when you submit your code)
```