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TP7Report

TP07-01

```
1  package TP07_1;
2
3  import java.util.Scanner;
4
5  public class Rectangle {
6      int width;
7      int height;
8      public Rectangle(int width, int height) {
9          this.width = width;
10         this.height = height;
11     }
12     public int calculatePerimeter() {
13         return (width + height) * 2;
14     }
15     public int calculateSurface() {
16         return (width * height);
17     }
18 }
19 class RectangleTest {
20
21     public static void main(String[] args) {
22         var test = new RectangleTest();
23         Scanner sc = new Scanner(System.in);
24         int width, height;
25         do {
26             System.out.print("Input Width: ");
27             width = sc.nextInt();
28             System.out.print("Input height: ");
29             height = sc.nextInt();
30
31             test.Display_per(width, height);
32             test.Display_sur(width, height);
33
34         } while (width == 0 & height == 0);
35     }
36     private void Display_per(int width, int height) {
37         var rech_p = new Rectangle(width, height);
38         System.out.printf("Rectangle: Width = %d, Height = %d, then the perimeter is %d.\n", width, height,
39             rech_p.calculatePerimeter());
40     }
41     private void Display_sur(int width, int height) {
42         var rech_p = new Rectangle(width, height);
43         System.out.printf("Rectangle: Width = %d, Height = %d, then the surface is %d.\n", width, height,
44             rech_p.calculateSurface());
45     }
46 }
47
```

Input Width: 100

Input height: 200

Rectangle: Width = 100, Height = 200, then the perimeter is 600.

Rectangle: Width = 100, Height = 200, then the surface is 20000.

```

1 package TP07_1;
2
3 public class SMS {
4     String subject;
5     String fromPhoneNumber;
6     String receiverNumber;
7     String type;
8     String content;
9     String status;
10
11     public SMS(String subject, String fromPhoneNumber, String receiverNumber, String type, String content,
12         String status) {
13         this.subject = subject;
14         this.fromPhoneNumber = fromPhoneNumber;
15         this.receiverNumber = receiverNumber;
16         this.type = type;
17         this.content = content;
18         this.status = status;
19     }
20
21     public SMS(String subject, String fromPhoneNumber, String receiverNumber, String content) {
22         this(subject, fromPhoneNumber, receiverNumber, "Text", content, "new");
23     }
24
25     public SMS(String fromPhoneNumber, String receiverNumber, String type, String content, String status) {
26         this("", fromPhoneNumber, receiverNumber, type, content, status);
27     }
28 }

```

```

1 package TP07_1;
2
3 import java.util.ArrayDeque;
4 import java.util.Scanner;
5
6 public class SMSList {
7     public static ArrayDeque<SMS> smsList;
8     public static String password;
9     public static final int MAX_CHARACTERS_PER_SMS = 160;
10    SMSdecryp d = new SMSdecryp();
11
12    public SMSList() {
13        smsList = new ArrayDeque<>();
14    }
15
16    public void add(SMS sms) {
17        smsList.add(sms);
18    }
19
20    public void add(String msg) {
21        add(new SMS("", "", "", msg));
22    }
23
24    public void add(String msg, String title) {
25        add(new SMS(title, "", "", msg, ""));
26    }
27
28    public String Encryptext(String txt) {
29        StringBuilder buf = new StringBuilder();
30        for (int i = 0; i < txt.length(); i++) {
31            int characterASCII = txt.charAt(i);
32            buf.append(" ");
33            buf.append(Integer.toBinaryString(characterASCII));
34        }
35        // String encry
36        String h = buf.toString();
37        h = h.replace("0", "-").replace("1", "?");
38        return h;
39    }
40
41
42    void CreatePassword(){
43        Scanner sc = new Scanner(System.in);
44        System.out.print("Create Password: ");
45        SMSList.password = sc.nextLine();
46    }
47
48    public void displayMenu() {
49        System.out.println("Menu:");
50        System.out.println("1. Send new SMS with Encrypted content using password method");
51        System.out.println("2. View SMS detail");
52        System.out.println("3. List SMSes");
53        System.out.println("4. Remove SMSes by index");
54        System.out.println("5. Quit");
55    }

```

```

1 public void sendEncryptedSMS() {
2     Scanner scanner = new Scanner(System.in);
3     System.out.print("Enter the Subject: ");
4     String subject = scanner.nextLine();
5     System.out.print("Enter the sender's phone number: ");
6     String fromPhoneNumber = scanner.nextLine();
7     System.out.print("Enter the receiver's phone number: ");
8     String receiverNumber = scanner.nextLine();
9     System.out.print("Enter the content of the SMS: ");
10    String content = scanner.nextLine();
11
12    // Add your code here to handle sending encrypted SMS using the provided
13
14    String encryptedContent = EncryptText(content);
15    SMS sms = new SMS(subject, fromPhoneNumber, receiverNumber, encryptedContent);
16    add(sms);
17    System.out.println("Encrypted SMS sent successfully!");
18 }
19
20 public void viewSMSDetail() {
21     Scanner scanner = new Scanner(System.in);
22     System.out.print("Enter the index of the SMS to view: ");
23     int index = scanner.nextInt();
24     scanner.nextLine();
25     System.out.println("\n\n-----<< SMS List >>-----");
26
27     if (index >= 0 && index < smsList.size()) {
28         SMS sms = smsList.stream().skip(index).findFirst().orElse(null);
29         if (sms != null) {
30             System.out.println("Subject: " + sms.subject);
31             System.out.println("From: " + sms.fromPhoneNumber);
32             System.out.println("Receiver: " + sms.receiverNumber);
33             System.out.println("Type: " + sms.type);
34             System.out.println("Content: " + sms.content);
35             System.out.println("Status: " + sms.status);
36         } else {
37             System.out.println("SMS not found.");
38         }
39     } else {
40         System.out.println("Invalid SMS index.");
41     }
42     System.out.println("-----\n");
43 }
44
45 public void listSMSes() {
46     if (smsList.isEmpty()) {
47         System.out.println("No SMSes found.");
48     } else {
49         System.out.println("\n\n-----<< SMS List >>-----");
50
51         int index = 0;
52         for (SMS sms : smsList) {
53             System.out.println("Index: " + index);
54             System.out.println("From: " + sms.fromPhoneNumber);
55             System.out.println("Receiver: " + sms.receiverNumber);
56             System.out.println("Content: " + sms.content);
57             index++;
58         }
59         System.out.println("-----\n");
60     }
61 }

```

```

1  public void removeSMSByIndex() {
2      Scanner scanner = new Scanner(System.in);
3      System.out.print("Enter the index of the SMS to remove: ");
4      int i = scanner.nextInt();
5
6      SMS[] array = smsList.toArray(new SMS[smsList.size()]);
7      SMS[] newsmstlist = new SMS[array.length - 1];
8      System.arraycopy(array, 0, newsmstlist, 0, i);
9      System.arraycopy(array, i + 1, newsmstlist, i, newsmstlist.length - i);
10     smsList.clear();
11     for (SMS element : newsmstlist) {
12         smsList.add(element);
13     }
14
15     if (smsList.size() - 1 <= i && i >= 0) {
16         System.out.println("Remove sucessful! ");
17     } else {
18         System.out.println("Index it find..");
19     }
20 }
21
22
23 // Rest of the code
24
25 public static void main(String[] args) {
26
27     SMSList smsList = new SMSList();
28     Scanner scanner = new Scanner(System.in);
29     int choice;
30     smsList.CreatePassword();
31     do {
32         smsList.displayMenu();
33         System.out.print("Enter your choice: ");
34         choice = scanner.nextInt();
35         scanner.nextLine(); // Consume the newline character
36
37         switch (choice) {
38             case 1:
39                 smsList.sendEncryptedSMS();
40                 break;
41             case 2:
42                 smsList.viewSMSDetail();
43                 break;
44             case 3:
45                 smsList.listSMSes();
46                 break;
47             case 4:
48                 smsList.removeSMSByIndex();
49                 break;
50             case 5:
51                 System.out.println("Exiting program...");
52                 break;
53             default:
54                 System.out.println("Invalid choice. Please try again.");
55                 break;
56         }
57     } while (choice != 5);
58
59     // scanner.close();
60 }
61 }
62

```

```
Create Password: Chhit
Menu:
1. Send new SMS with Encrypted content using password method
2. View SMS detail
3. List SMSes
4. Remove SMSes by index
5. Quit
Enter your choice: 1
Enter the Subject: none
Enter the sender's phone number: 085720085
Enter the receiver's phone number: 012345678
Enter the content of the SMS: Every month Ulster Bank asks a representative sample of firms about issues such as new orders, employment and e
xports.
```

Encrypted SMS sent successfully!

```
Menu:
1. Send new SMS with Encrypted content using password method
2. View SMS detail
3. List SMSes
4. Remove SMSes by index
5. Quit
Enter your choice: 3

-----<< SMS List >>-----
Index: 0
From: 085720085
Receiver: 012345678
Content:  ?---?-?  ???-??-  ??--?-?  ???--?-  ????-?-?  ?-----  ??-??-?  ??-????  ??-????-  ???-?-  ??-?-  ?-----  ?-?-?-?  ??-??-  ???-???  ???-?-  ??--?
-?  ???--?-?  ?-----  ?-----?  ?-----?  ??-????-  ??-?-?-?  ?-----  ??-???-?  ???-?-?  ???-????  ?-----  ??-???-?  ?-----  ???-?-?  ??-??-  ???-???  ???-?-  ??--?
-  ??--?-?  ???-??-  ??-?-?-?  ??-????-  ???-?-  ??-???-?  ??-?-?-?  ??-?-?-?  ??-?-?-?  ??-???-?  ??-???-?  ??-???-?  ??-???-?  ??-???-?  ??-???-?  ??-???-?
--  ??-?????  ??-??-  ?-----  ??-??-  ??-?-?-?  ???-??-  ??-??-?-?  ??-??-?  ?-----  ??-???-?  ??-??-  ??-?????  ???-?-?  ???-?-  ?-----  ??-?-?-?  ???-??-  ???-?
??  ???-?-?  ??-?-?-?  ???-??-  ?-----  ???-??-  ???-?-?  ??-???-?  ??-?-  ?-----  ??-???-?  ???-??-  ?-----  ??-?????  ???-??-
-  ??--?-?  ??-?-?-?  ???-??-  ??-??-  ?-----  ??-??-  ??-??-  ??-??-  ??-??-  ??-?????  ???-??-  ??-?-?-?  ??-??-  ??-??-  ??-??-  ?-----  ??-???-
?  ??-??-  ??-??-  ?-----  ??-??-  ??-??-  ??-??-  ??-??-  ??-??-  ??-??-  ??-??-  ??-??-  ??-??-  ??-??-  ??-??-  ??-??-  ??-??-  ??-??-
Index: 1
From: 012345678
Receiver: 012456789
Content:  ?-?-?-  ??-?-?  ??-??-  ??-??-  ??-????  ?-----  ??-?-  ??-??-  ??-??-  ??-??-  ??-????  ?-----  ??-?-  ??-??-  ??-??-  ??-??-  ??-??-  ??-??
??  ?-----  ??-?-  ??-?-?  ??-??-  ??-??-  ??-????  ?-----  ??-?-  ??-??-  ??-??-  ??-??-  ??-????  ?-----  ??-?-  ??-??-  ??-??-  ??-??-  ??-??
??
??
-----
```

```
Menu:
1. Send new SMS with Encrypted content using password method
2. View SMS detail
3. List SMSes
4. Remove SMSes by index
5. Quit
Enter your choice: 2
Enter the index of the SMS to view: 1

-----<< SMS List >>-----
Subject: none
From: 012345678
Receiver: 012456789
Type: Text
Content:  ?-?-?-  ??-?-?  ??-??-  ??-??-  ??-????  ?-----  ??-?-  ??-?-?  ??-??-  ??-??-  ??-????  ?-----  ??-?-  ??-?-?  ??-??-  ??-??-  ??-??-  ??-??
??  ?-----  ??-?-  ??-?-?  ??-??-  ??-??-  ??-????  ?-----  ??-?-  ??-?-?  ??-??-  ??-??-  ??-????  ?-----  ??-?-  ??-?-?  ??-??-  ??-??-  ??-??-  ??-??
??
??
Status: new
-----
```

```
2. View SMS detail
3. List SMSes
4. Remove SMSes by index
5. Quit
Enter your choice: 4
Enter the index of the SMS to remove: 0
Remove successful!
Menu:
1. Send new SMS with Encrypted content using password method
2. View SMS detail
3. List SMSes
4. Remove SMSes by index
5. Quit
Enter your choice: 3

-----<< SMS List >>-----
Index: 0
From: 012345678
Receiver: 012456789
Content:  ?-?-?-  ??-?-?  ??-??-  ??-??-  ??-????  ?-----  ??-?-  ??-?-?  ??-??-  ??-??-  ??-????  ?-----  ??-?-  ??-?-?  ??-??-  ??-??-  ??-??-  ??-??
??  ?-----  ??-?-  ??-?-?  ??-??-  ??-??-  ??-????  ?-----  ??-?-  ??-?-?  ??-??-  ??-??-  ??-????  ?-----  ??-?-  ??-?-?  ??-??-  ??-??-  ??-??-  ??-??
??
??
-----
```

```

1 package TP07_1;
2 import java.util.ArrayDeque;
3 import java.util.Scanner;
4
5 public class SMSdecrpy{
6     ArrayDeque<SMS> smsList = SMSList.smsList;
7     public String decrytext(String text){
8
9         String dycry_bin = text;
10        dycry_bin = dycry_bin.trim();
11        dycry_bin = dycry_bin.replace("-", "0").replace("?", "1");
12
13        String[] parts = dycry_bin.split(" ");
14        StringBuilder sb = new StringBuilder();
15
16        for(String part : parts){
17            int val = Integer.parseInt(part, 2);
18            String c = Character.toString(val);
19            sb.append(c);
20        }
21        return sb.toString();
22    }
23
24    public void viewSMSDetail_decry() {
25        Scanner scanner = new Scanner(System.in);
26        System.out.print("Enter the index of the SMS to view: ");
27        int index = scanner.nextInt();
28        scanner.nextLine();
29
30        if (index >= 0 && index < smsList.size()) {
31            SMS sms = smsList.stream().skip(index).findFirst().orElse(null);
32            if (sms != null) {
33                System.out.println("\n\n-----<< SMS detail >>-----");
34                System.out.println("Subject: " + sms.subject);
35                System.out.println("From: " + sms.fromPhoneNumber);
36                System.out.println("Receiver: " + sms.receiverNumber);
37                System.out.println("Type: " + sms.type);
38                System.out.println("Content: " + decrytext(sms.content));
39                System.out.println("Status: " + sms.status);
40
41                System.out.println("-----\n");
42            } else {
43                System.out.println("SMS not found.");
44            }
45        } else {
46            System.out.println("Invalid SMS index.");
47        }
48    }
49
50    public void listSMSes_decry() {
51        if (smsList.isEmpty()) {
52            System.out.println("No SMSes found.");
53        } else {
54            System.out.println("\n\n-----<< SMS List >>-----");
55
56            int index = 0;
57            for (SMS sms : smsList) {
58                System.out.println("Index: " + index);
59                System.out.println("From: " + sms.fromPhoneNumber);
60                System.out.println("Receiver: " + sms.receiverNumber);
61                System.out.println("Content: " + decrytext(sms.content));
62                index++;
63            }
64            System.out.println("-----\n");
65        }
66    }
67

```

```

1  public static void main(String[] args) {
2      SMSList smsList = new SMSList();
3      SMSDecryp smsListD = new SMSDecryp();
4      Scanner scanner = new Scanner(System.in);
5      int choice;
6      smsList.CreatePassword();
7
8      do {
9          smsList.displayMenu();
10         System.out.print("Enter your choice: ");
11         choice = scanner.nextInt();
12         scanner.nextLine(); // Consume the newline character
13
14         switch (choice) {
15             case 1:
16                 smsList.sendEncryptedSMS();
17                 break;
18             case 2:
19
20                 System.out.println("-----");
21                 System.out.print("Input Password fer Decrypt : ");
22                 String pass = scanner.nextLine();
23                 boolean comp = pass.equals(SMSList.password);
24                 if(comp){
25                     smsListD.viewSMSDetail_deycry();
26                 }else{
27                     System.out.print("Wrong Password, Content is Encrypt..");
28                     smsList.viewSMSDetail();
29                 }
30                 break;
31             case 3:
32                 System.out.println("-----");
33                 System.out.print("Input Password fer Decrypt : ");
34                 String passw = scanner.nextLine();
35                 boolean c = passw.equals(SMSList.password);
36                 if(c){
37                     smsListD.listSMSses_decry();
38                 }else{
39                     System.out.print("Wrong Password, Content is Encrypt..");
40                     smsList.listSMSses();
41                 }
42
43                 break;
44             case 4:
45                 smsList.removeSMSByIndex();
46                 break;
47             case 5:
48                 System.out.println("Exiting program...");
49                 break;
50             default:
51                 System.out.println("Invalid choice. Please try again.");
52                 break;
53         }
54     } while (choice != 5);
55
56     // scanner.close();
57 }
58 }
59

```

```
Menu:
1. Send new SMS with Encrypted content using password method
2. View SMS detail
3. List SMSes
4. Remove SMSes by index
5. Quit
Enter your choice: 1
Enter the Subject: none
Enter the sender's phone number: 012345678
Enter the receiver's phone number: 012456789
Enter the content of the SMS: Every month Ulster Bank asks a representative sample of firms about issues such as new orders, employment and e
xports.
Encrypted SMS sent successfully!
Menu:
1. Send new SMS with Encrypted content using password method
2. View SMS detail
3. List SMSes
4. Remove SMSes by index
5. Quit
Enter your choice: 1
Enter the Subject: none
Enter the sender's phone number: 00
Enter the receiver's phone number: 00
Enter the content of the SMS: hello hello hello hello
Encrypted SMS sent successfully!
```

```
Menu:
1. Send new SMS with Encrypted content using password method
2. View SMS detail
3. List SMSes
4. Remove SMSes by index
5. Quit
Enter your choice: 3
-----
Input Password fer Decrypt : j
Wrong Password, Content is Encrypt..

-----<< SMS List >>-----
Index: 0
From: 012345678
Receiver: 012456789
Content: ?-?-?-? ???-??- ??-?-?-? ???-?-? ????-?-? ?----- ??-??-? ??-???? ??-??-? ???-?-? ??-?-? ?----- ?-?-?-? ??-??-? ???-??-? ???-?-? ??-?-?
-? ???-?-? ?----- ?----- ?-?-?-? ??-??-? ??-?-?-? ?----- ??-??-? ??-?-?-? ?----- ??-??-? ??-?-?-? ?----- ??-??-? ??-?-?-? ???-??-? ???-??-?
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Index: 1
From: 00
Receiver: 00
Content: ??-?-? ??-?-?-? ??-??-? ??-??-? ??-???? ?----- ??-?-? ??-?-?-? ??-??-? ??-??-? ??-???? ?----- ??-?-? ??-?-?-? ??-??-? ??-??-? ??-??-
?? ?----- ??-?-? ??-?-?-? ??-??-? ??-??-? ??-????
-----
```

wrong pass

```
Menu:
1. Send new SMS with Encrypted content using password method
2. View SMS detail
3. List SMSes
4. Remove SMSes by index
5. Quit
Enter your choice: 3
-----
Input Password fer Decrypt : Chhit
-----
-----<< SMS List >>-----
Index: 0
From: 012345678
Receiver: 012456789
Content: Every month Ulster Bank asks a representative sample of firms about issues such as new orders, employment and exports.
Index: 1
From: 00
Receiver: 00
Content: hello hello hello hello
-----
```

correct pass

```
Menu:
1. Send new SMS with Encrypted content using password method
2. View SMS detail
3. List SMSes
4. Remove SMSes by index
5. Quit
Enter your choice: 2
-----
Input Password fer Decrypt : Chhit
Enter the index of the SMS to view: 0

-----<< SMS detail >>-----
Subject: none
From: 012345678
Receiver: 012456789
Type: Text
Content: Every month Ulster Bank asks a representative sample of firms about issues such as new orders, employment and exports.
Status: new
-----
```