

- Q. Write a program in Java, to implement the Stack data structure.

```
class Stack {
```

```
    private int arr[];           // store elements  

    private int top;             // top of stack  

    private int capacity;        // total capacity
```

```
Stack (int size) {
```

```
    arr = new int [size];
```

```
    capacity = size;
```

```
    top = -1;
```

```
    public void push (int n) {
```

```
        if (is Full ()) {
```

```
            System.out.println ("Stack Overflow");
```

```
            System.exit (1);
```

```
        }
```

```
        System.out.println ("Inserting " + n);
```

```
        arr [++top] = n;
```

```
}
```

```
    public int pop () {
```

```
        if (is Empty ()) {
```

```
            System.out.println ("Stack Empty");
```

```
        System.exit(1);  
    }  
    return arr[top--];  
}
```

```
public int getSize(){  
    return top+1;  
}
```

```
public Boolean isEmpty(){  
    return top == -1;  
}
```

```
public Boolean isFull(){  
    return top == capacity-1;  
}
```

```
public void printStack(){  
    for (int i=0; i<=top; i++) {  
        System.out.print(arr[i] + ",");  
    }  
}
```

```
public static void main (String [] args){  
    Stack stack = new Stack(5);  
    stack.push(1);  
    stack.push(2);  
    stack.push(3);
```

Output:-

Inserting 1

Inserting 2

Inserting 3

Stack: 1, 2, 3

After popping out

1, 2,

After popping out

1,

```
System.out.print("Stack: ");
stack.printStack();
```

```
stack.pop();
```

```
stack.pop();
```

```
System.out.println("In After popping out");
stack.printStack();
```

```
stack.pop();
```

```
System.out.println("In After popping out");
```

```
stack.printStack();
```

{ }

2. Write a program in Java to implement a simple Bank Account.

```

import java.util.Scanner;
class BankDetails {
    private String accno;
    private String name;
    private String acc_type;
    private long balance;
    Scanner sc = new Scanner(System.in);

    public void openAccount() {
        System.out.print("Enter Account No:");
        accno = sc.next();
        System.out.print("Enter Account type:");
        acc_type = sc.next();
        System.out.print("Enter Name:");
        name = sc.next();
        System.out.print("Enter Balance:");
        balance = sc.nextLong();
    }

    public void showAccount() {
        System.out.println("Name of account holder:" + name);
        System.out.println("Account no. :" + accno);
        System.out.println("Account type:" + acc_type);
        System.out.println("Balance :" + balance);
    }
}

```

```
public void deposit() {
```

```
    long amt;
```

```
    System.out.println("Enter the amount you  
want to deposit:");
```

```
    amt = sc.nextLong();
```

```
    balance = balance + amt;
```

```
}
```

```
public void withdrawal() {
```

```
    long amt;
```

```
    System.out.println("Enter the amount you  
want to withdraw:");
```

```
    amt = sc.nextLong();
```

```
    if (balance >= amt) {
```

```
        balance = balance - amt;
```

```
        System.out.println("Balance after withdrawal:  
" + balance);
```

```
}
```

```
    else {
```

```
        System.out.println("Your balance is less than  
" + tamt + " It Transaction failed...!!");
```

```
}
```

```
public boolean search (String ac-no) {
```

```
    if (accno.equals(ac-no)) {
```

```
        showAccount();
```

```

        } return (true);
    }
    } return (false);
}

```

```

public class BankingApp {
    public static void main (String arg[]) {
        Scanner sc = new Scanner (System.in);
        System.out.println ("How many number of
                           customers do you want?");
        int n = sc.nextInt();
        BankDetails C[] = new BankDetails [n];
        for (int i=0; i < C.length; i++) {
            C[i] = new BankDetails ();
            C[i].openAccount ();
        }
        int ch;
        do {
            System.out.println ("In ***Banking System***");
            System.out.println ("1. Display all account details
                               In 2. Search by Account number
                               In 3. Deposit
                               In 4. Withdrawal " + In 5. Exit");
            System.out.println ("Enter your choice:");
            ch = sc.nextInt();
        }
    }
}

```

```
switch(ch) {
```

case 1:

```
    for (int i=0; i < c.length; i++) {  
        c[i].showAccount();  
    }
```

```
    break;
```

case 2:

```
System.out.println("Enter account no. you want  
to search:");
```

```
String ac-no = sc.next();
```

```
boolean found = false;
```

```
for (int i=0; i < c.length; i++) {  
    found = c[i].search(ac-no);
```

```
    if (found) {
```

```
        break;  
    }
```

```
}
```

```
if (!found) {
```

```
    System.out.println("Search failed! Account  
doesn't exist..!!");
```

```
}
```

```
break;
```

case 3:

```
System.out.println("Enter Account no.:");
```

```
ac-no = sc.next();
```

```
found = false;
```

### Output 1 :-

How many number of customers do you want? 2

Enter Account No: 111

Enter Account type: Savings

Enter Name: Anand

Enter Balance: 56900

Enter Account No: 121

Enter Account type: Current

Enter Name: Shikher

Enter Balance: 20000

### \*\*\* Banking Application \*\*\*

1. Display all account details
2. Search by Account number
3. Deposit the amount
4. Withdraw the amount
5. Exit

Enter your Choice:

,

Name of account holder: Anand

Account no.: 111

Account type: Savings

Balance: 56900

Name of account holder: Shikher

Account no.: 121

Account type: Current      Balance: 20000

```
for (int i=0; i < C.length; i++) {  
    found = C[i].search(ac-no);  
    if (found) {  
        C[i].deposit();  
        break;  
    }  
    if (!found) {  
        System.out.println("Search failed! Account  
        doesn't exist...!!");  
    }  
    break;  
}  
case 4:  
    System.out.print("Enter Account No:");  
    ac-no = sc.next();  
    found = false;  
    for (int i=0; i < C.length; i++) {  
        found = C[i].search(ac-no);  
        if (found) {  
            C[i].withdrawal();  
            break;  
        }  
        if (!found) {  
            System.out.println("Search failed! Account  
            doesn't exist...!!");  
        }  
    }
```

## Output 2:-

Enter your Choice:

2

Enter account no. you want to search : 111

Name of account holder : Anand

Account no. : 111

Account type : Savings

Balance : 56900

### \*\*\* Banking Application \*\*\*

1. Display all account details
2. Search by Account number
3. Deposit the amount
4. Withdraw the amount
5. Exit

Enter your choice:

3

Enter Account no. : 121

Name of Account holder : Swikher

Account no. : 121

Account type : Current

Balance : 20000

Enter amount you want to deposit:

10000

break;

case 5:

System.out.println("See you soon..");

break;

}

}

while(ch!=5);

}

}

3. Develop an applet that receives three numeric values from the user & displays the largest of the three on the screen. Write a HTML page that embeds this applet.

```

import java.applet.*;
import java.awt.*;
import java.awt.event.*;

public class largenumber extends Applet implements
ActionListener
{
    TextField t1, t2, t3, t4;
    Button b1;
    public void init()
    {
        setLayout(null);
        t1 = new TextField(15);
        t1.setBounds(100, 25, 50, 20);
        t2 = new TextField(15);
        t2.setBounds(100, 50, 50, 20);
        t3 = new TextField(15);
        t3.setBounds(100, 75, 50, 20);
        t4 = new TextField(15, "Ans");
        t4.setBounds(175, 40, 50, 20);
        b1 = new Button("Find");
        b1.setBounds(175, 65, 50, 30);
    }
}

```

Applet

2

3

5

5

Find

```

    add(t1);
    add(t2);
    add(t3);
    add(t4);
    add(b1);
    b1.addActionListener(this);
}

```

```

public void actionPerformed(ActionEvent e)
{

```

```
    int i, j, k;
```

```
    i = Integer.parseInt(t1.getText());
```

```
    j = Integer.parseInt(t2.getText());
```

```
    k = Integer.parseInt(t3.getText());
```

```
    if (i < j)
    {

```

```
        if (j < k)
```

```
            t4.setText(" " + k);
```

```
        else
```

```
            t4.setText(" " + j);
```

```

    }
```

```
    else
```

```
        t4.setText(" " + i);
```

```

    }
}
```

4. Write an AWT application with checkbox such that all cable TV channels will be displayed from category.

```
import java.applet.*;  
import java.awt.*;  
import java.awt.event.*;
```

```
/*  
<applet code = p3 width=1350 height=650>  
</applet>  
*/
```

```
public class p3 extends Applet implements ItemListener
```

```
{
```

```
String msg = "";
```

```
Label name;
```

```
Checkbox ent, info, music, kids;
```

```
public void init()
```

```
{
```

```
setLayout(null);
```

```
name = new Label("Select Channel Category:-");
```

```
ent = new Checkbox("Entertainment", null, false);
```

```
info = new Checkbox("Infotainment", null, false);
```

```
music = new Checkbox("Music", null, false);
```

```
kids = new Checkbox("kids", null, false);
```

```
add(name);
add(ent);
add(info);
add(music);
add(kids);
```

```
name.setBounds(50, 20, 150, 20);
ent.setBounds(210, 20, 150, 20);
info.setBounds(390, 20, 150, 20);
music.setBounds(560, 20, 150, 20);
kids.setBounds(730, 20, 150, 20);
ent.addItemListener(this);
info.addItemListener(this);
music.addItemListener(this);
kids.addItemListener(this);
}
```

```
public void itemStateChanged(ItemEvent ie)
{
    repaint();
}
```

```
public void paint(Graphics g)
{
    if (ent.getState() == true)
        msg = ent.getLabel();
```

```
    g.drawString(msg, 170, 120);
    g.drawString("SONY", 200, 150);
    g.drawString("SAB", 200, 170);
}
```

```
if (info.getState() == true)
```

```
{ msg = info.getLabel();
```

```
    g.drawString(msg, 170, 120);
```

```
    g.drawString("AASTHA", 200, 190);
```

```
    g.drawString("SUM TV", 200, 210);
}
```

```
if (music.getState() == true)
```

```
{ msg = music.getLabel();
```

```
    g.drawString(msg, 170, 120);
```

```
    g.drawString("9XM", 200, 230);
```

```
    g.drawString("SONY PIX", 200, 250);
}
```

```
if (kids.getState() == true)
```

```
{ msg = kids.getLabel();
```

```
    g.drawString(msg, 170, 260);
```

```
    g.drawString("Cartoon Network", 200, 270);
```

```
    g.drawString("Disney", 200, 290);
}
```

```
}
```

```
}
```

5. Program implementing the concept of cookies in JSP.

### newhtml.html

```

<html>
<head>
<title> </title>
<meta http-equiv="Content-Type" content="text/html;
    charset=UTF-8">
</head>
<body>
<form action="MainCookie.jsp" method="GET">
    FIRST NAME:<input type="text" name="firstname"><br/>
    LAST NAME:<input type="text" name="last-name"><br/>
    <input type="submit" value="Submit"/>
</form>
</body>
</html>

```

### MainCookie.jsp

```

<%@page contentType="text/html" pageEncoding="UTF-8"%>
<%@page language="java" import="java.util.*"%>
<!DOCTYPE html>
<html>
<head>
<meta http-equiv="Content-Type" content="text/html;
    charset=UTF-8">

```

</head>

<body>

<h1> Setting Cookie values </h1>

First Name: <%. = request.getParameter("first-name")%><br>

Last Name: <%. = request.getParameter("last-name")%><br>

<%.

Cookie firstName = new Cookie ("first-name", request.  
get Parameter ("first-name"));

Cookie lastName = new Cookie ("last-name", request.  
get Parameter ("last-name"));

firstName.setMaxAge (60\*60\*24);

lastName.setMaxAge (60\*60\*24);

response.addCookie (firstName);

response.addCookie (lastName);

%>

<a href = "Read Cookies.jsp"> Next page to view the  
cookies values </a>

</body>

</html>

## Read Cookies.jsp

<%@page contentType = "text/html" pageEncoding =  
"UTF-8"%>

<!DOCTYPE html>

<html>

<head>

```
<meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
<title> JSP Page </title>
</head>
<body>
<h1>Reading Cookies </h1>
<%
Cookie cookie = null;
Cookie[] cookies = null;
cookies = request.getCookies();
if (cookies) {
    out.println("<h2>Found cookies name and value</h2>");
    for (int i=0; i<cookies.length; i++) {
        cookie = cookies[i]
        out.print("Name: " + cookie.getName() + ", ");
        out.print("Value: " + cookie.getValue() + "<br>");
    }
} else {
    out.println("No cookies found");
}
%>
</body>
</html>
```