



ALBUKHARY INTERNATIONAL UNIVERSITY

**SCHOOL OF COMPUTING AND INFORMATICS**

**ACADEMIC SESSION 2021/2022**

**SEMESTER 2**

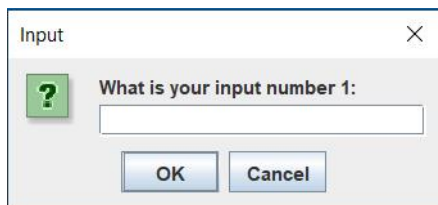
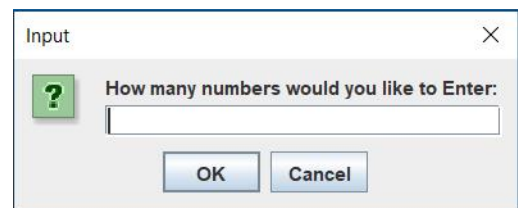
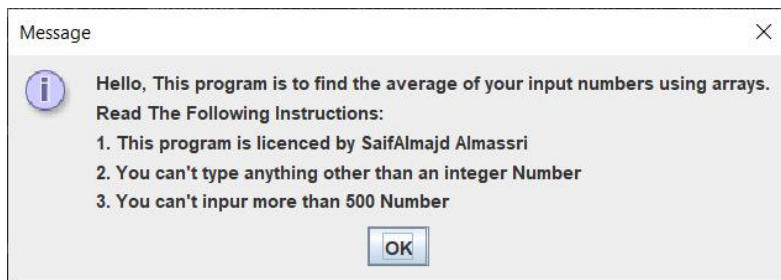
<b>Course Code</b>	<b>CCC1223</b>
<b>Course Title</b>	<b>Object and Oriented Programming</b>
<b>Assessment</b>	<b>Individual Assignment</b>
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<b>Submission Date</b>	<b>23th May 2022</b>

## • QUESTION 1

Write the java program to find the average of n numbers using arrays. Finally print all the input numbers and average as output.

### Answer

```
1 import javax.swing.JOptionPane;
2
3 public class FileOne {
4
5     Run | Debug
6     public static void main(String[] args) {
7
8         String[] options = {"Continue", "Skip "}; // making the starting options
9         int greetmsg = JOptionPane.showOptionDialog(parentComponent: null, message: "Welcome to Saif's Mean Calculator",
10             title: "Saif's Calculator",
11             JOptionPane.DEFAULT_OPTION, JOptionPane.INFORMATION_MESSAGE, icon: null, options, options[0]); //greetings message, title and setting options values
12         if (greetmsg == 0){
13             JOptionPane.showMessageDialog(parentComponent: null, message: "Hello, This program is to find the average of your input numbers using arrays. \nRead The Following Instructions:",
14                 title: "Saif's Calculator",
15                 JOptionPane.INFORMATION_MESSAGE, icon: null, options, options[0]); //calling Calculator after showing the instructions
16         }
17         else{
18             calculator(); // calling Calculator before the instructions
19         }
20     }
21
22     static void Calculator() { //Calculator method
23         int x, i, sum = 0; // integer variables
24         float average; // float variables
25         int[] number = new int[500]; // max number of inputs is 500
26         int numbers = Integer.parseInt(JOptionPane.showInputDialog(message: "How many numbers would you like to Enter: "));
27         for(x = 1; x <= numbers; x++){
28             number[x] = Integer.parseInt(JOptionPane.showInputDialog("What is your input number " + x + ":"));
29             sum = sum + number[x];
30         } //for loop for getting input
31         for(i = 1; i <= numbers; i++){
32             JOptionPane.showMessageDialog(parentComponent: null, "Your number " + i + " value is " + number[i]);
33         } //for loop for printing what was recorded in the input
34         average = (float) sum / numbers; //finding the mean equation
35         JOptionPane.showMessageDialog(parentComponent: null, "The mean of your entered values is " + average); // printing mean
36     }
37 }
```



- **QUESTION 2**

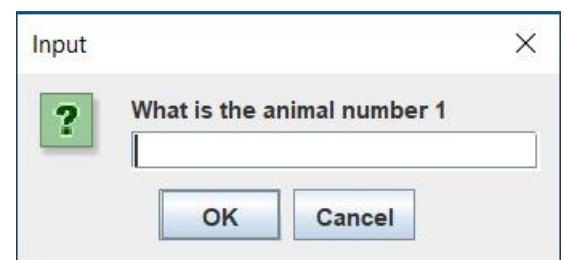
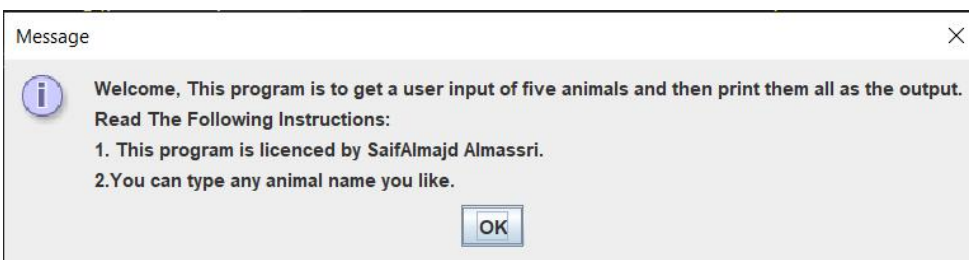
Write the java program to get the 5-animal name from keyboard as an input and print all animal name as output.

***Answer***

```
import javax.swing.JOptionPane;

public class FileTwo{
    public static void main(String[] args) {
        int i = 1; //variable initial
        JOptionPane.showMessageDialog(null,"Welcome, This program is to get a user input of five animals and then print them all as the output. \nRead The Following Instructions: \n1. This program is licenced by SaifAlmajd Almassri. \n2. You can type any animal name you like.");
        String[] animals = new String[6]; //Allowed up to 5 only (as asked in question) and because we start from 1 we set to -5 values-

        for(i = 1; i<=5; i++)
        {
            animals[i] = JOptionPane.showInputDialog(null, "What is the animal number " + i);
        } //loop to get the animals names
        JOptionPane.showMessageDialog(null, "Your choosen animals were" + "\n" + animals[1] + ", " + "\n" + animals[2] + ", " + "\n" + animals[3] + ", " + "\n" + animals[4] + " and " + animals[5]);
    }
}
```



- **QUESTION 3**

write the java program for prepare the following table. Then input given through Keyboard

Student Name	Mark1	Mark 2	Total
John	92	88	180
Fathima	85	75	150
Chris	95	88	183

**Answer (Login is  
Username: DrBashear  
Password: Admin2022)**

There are 2 files:

One for login

2nd for the system

### **FileThree to login**

```

1 import javax.swing.*;
2
3 public class FileThree {
4
5     Run|Debug
6     public static void main(String[] args) {
7         FileThree obLog = new FileThree(); //making an object to call the login
8         String[] options = {"Instructions & Manual", "Login"}; //interface options
9         int WelcomeMsg = JOptionPane.showOptionDialog(parentComponent: null, message: "Welcome to AIU Grading System",
10             title: "AIU System by SaifAlmajd",
11             JOptionPane.DEFAULT_OPTION, JOptionPane.INFORMATION_MESSAGE, icon: null, options, options[0]); //interface page and options initializing values
12         if (WelcomeMsg == 0){
13             JOptionPane.showMessageDialog(parentComponent: null, message: "Hello, This System is to calculate and your input numbers using arrays. \nRead The Following Instructions:\n1. This program is lice
14             obLog.login();
15         } // for instuctions
16         else
17         {
18             obLog.login();
19         } // option to skip instuctions
20     }
21
22     public void login() {
23         JTextField username = new JTextField();
24         JPasswordField password = new JPasswordField(); // JTextField new objects
25         Object[] message = {
26             "AIU Admin Username:", username,
27             "Password:", password
28         };
29
30         int option = JOptionPane.showConfirmDialog(parentComponent: null, message, title: "Login", JOptionPane.OK_CANCEL_OPTION);
31         if (option == JOptionPane.OK_OPTION) {
32             if (username.getText().equals(anObject: "DrBashear") && password.getText().equals(anObject: "Admin2022")) { // check login details
33                 JOptionPane.showMessageDialog(parentComponent: null, "Login Successful, Welcome " + username.getText()); // print login Successful and name
34                 AIUSystem.registration(); //calling the registration to start system
35             } else {
36                 JOptionPane.showMessageDialog(parentComponent: null, message: "Your login failed"); //error handling - login failed case
37             }
38         } else {
39             JOptionPane.showMessageDialog(parentComponent: null, message: "You Canceled"); //error handling - login cancelation case
40         }
41     }
42 }

```

# File AIU System

```
1 import javax.swing.*;
2 public class AIUSystem {
3
4     Run/Debug
5     public static void main(String[] args) {
6         registration();
7     }
8     // making a main method incase this file wants to run itself without Filethree
9     static String[] Students = new String[500]; //up to 500 names
10    static int[] mark1 = new int[500]; // up to 500 numbers
11    static int[] mark2 = new int[500]; // up to 500 numbers
12    static int[] total = new int[500]; // up to 500 numbers
13
14    static int i = 1, summark1 = 0, summark2 = 0, Deleted = 0;
15    // the above is initialization and its static
16    public static void registration(){
17        String[] operation = {"Add a Student", "Delete a Student", "List Latest Students", "Exit"}; //options to the user
18        int interfaceList = JOptionPane.showOptionDialog(parentComponent: null, message: "Welcome to AIU System. \nYou are now capable of Adding, Deleting or Listing Students from the system.",
19            title: "AIU Students Database",
20            JOptionPane.DEFAULT_OPTION, JOptionPane.INFORMATION_MESSAGE, icon: null, operation, operation[0]); //interface and welcoming
21        switch (interfaceList) {
22            case 0: //if button 1 clicked
23                addStudent();
24                registration(); //to add a student
25                registration(); //get back to main page
26                break;
27            case 1: //if button 2 clicked
28                delStudent(); //to delete a student
29                registration(); //get back to main page
30                break;
31            case 2: //if button 3 clicked
32                listStudent(); //to list latest student
33                registration(); //get back to main page
34                break;
35            case 3: //if button 4 clicked
36                System.exit(status: 0); //exit with 0 errors
37                JOptionPane.showMessageDialog(parentComponent: null, message: "Thank you for using AIU Students System, if you have any issues please contact me via email: \n -saifalmaq.d.almassri@student.aiu.edu.- \nThank you");
38            default:
39                JOptionPane.showMessageDialog(parentComponent: null, message: "An Error has Occurred"); // error handling- if error has occurred
40                break;
41        }
42    }
43
44    public static void addStudent()
45    {
46        if (Students[i] == null){ // to not initialize to initialized spaces
47            Students[i] = JOptionPane.showInputDialog("what is the student name number " + i + "?");
48            mark1[i] = Integer.parseInt(JOptionPane.showInputDialog(message: "what is the student Mark 1?"));
49            mark2[i] = Integer.parseInt(JOptionPane.showInputDialog(message: "what is the student Mark 2?"));
50            summark1 = summark1 + mark1[i]; //total of marks 1
51            summark2 = summark2 + mark2[i]; //total of marks 2
52            total[i] = mark1[i] + mark2[i];
53        } else {
54            i++; // to not initialize to initialized spaces
55            Students[i] = JOptionPane.showInputDialog("what is the student name number " + i + "?");
56            mark1[i] = Integer.parseInt(JOptionPane.showInputDialog(message: "what is the student Mark 1?"));
57            mark2[i] = Integer.parseInt(JOptionPane.showInputDialog(message: "what is the student Mark 2?"));
58            summark1 = summark1 + mark1[i]; //total of marks 1
59            summark2 = summark2 + mark2[i]; //total of marks 2
60            total[i] = mark1[i] + mark2[i];
61        }
62    }
63
64    public static void delStudent()
65    {
66        String name = JOptionPane.showInputDialog( message: "what is the student name you want to delete?");
67        for(i = 1; i < mark1[i]; i++){
68            if (name.equals(Students[i]) || name == Students[i]){ // looks for student with same names
69                JOptionPane.showMessageDialog(parentComponent: null, "Student named: "+ name + " found! and Deleted.");
70                Students[i] = null;
71                mark1[i] = 0;
72                mark2[i] = 0;
73                Deleted = i;
74            }
75        }
76        if (Deleted == 0) { // looks for student with same names
77            JOptionPane.showMessageDialog(parentComponent: null, "Student named: "+ name + " not found!"); // error handling - not found
78        }
79    }
80
81    public static void listStudent()
82    {
83        if (Students[i] != null){ // to not print out empty values
84            Object row[] = { // Object for rows and because this is an object we can modify or make a loop
85                (1, Students[1], mark1[1], mark2[1], total[1]), //student list number 1 .....
86                (2, Students[2], mark1[2], mark2[2], total[2]),
87                (3, Students[3], mark1[3], mark2[3], total[3]),
88                (4, Students[4], mark1[4], mark2[4], total[4]),
89                (5, Students[5], mark1[5], mark2[5], total[5]),
90                (6, Students[6], mark1[6], mark2[6], total[6]),
91                (7, Students[7], mark1[7], mark2[7], total[7]),
92                (8, Students[8], mark1[8], mark2[8], total[8]),
93                (9, Students[9], mark1[9], mark2[9], total[9]),
94                (10, Students[10], mark1[10], mark2[10], total[10]),
95                (11, Students[11], mark1[11], mark2[11], total[11]),
96                (12, Students[12], mark1[12], mark2[12], total[12]),
97                (13, Students[13], mark1[13], mark2[13], total[13]),
98                (14, Students[14], mark1[14], mark2[14], total[14]),
99                (15, Students[15], mark1[15], mark2[15], total[15]),
100                (16, Students[16], mark1[16], mark2[16], total[16]),
101                (17, Students[17], mark1[17], mark2[17], total[17]),
102                (18, Students[18], mark1[18], mark2[18], total[18]),
103                (19, Students[19], mark1[19], mark2[19], total[19]),
104                (20, Students[20], mark1[20], mark2[20], total[20]),
105                ("", "", "", "", ""),
106                {"-----", "Total Grades (All):", summark1, summark2, "-----"} // total sum of marks 1 and marks 2
107            };
108        }
109        Object[] cols = {
110            "Student Number", "Student Name", "Mark 1", "Mark 2", "Total"
111        }; // object for columns
112        JTable table = new JTable(rows, cols); //JTable object with rows and cols
113        JOptionPane.showMessageDialog(parentComponent: null, new JScrollPane(table)); //prints out the JTable
114    }
115
116    } // end of AIU System Program
```



AIU System by SaifAlmajd

Welcome to AIU Grading System

Instructions & Manual Login

Login

AIU Admin Username:

Password:

OK Cancel

Message

Login Successful, Welcome DrBashear

OK

AIU Students Database

Welcome to AIU System.  
You are now capable of Adding, Deleting or Listing Students from the system.

Add a Student Delete a Student List Latest Students Exit

Input

What is the student name number 21?

OK Cancel

Message

Student Number	Student Name	Mark 1	Mark 2	Total
1	Ahemd	23	53	76
2	ali	21	43	64
3	saif	50	50	100
4	kai	20	32	52
5	pel	12	32	44
6	sher	40	40	80
7	slmn	50	30	80
8	koi	20	40	60
9	pan	30	40	70
10	ahi	23	43	66
11	lim	30	32	62
12	sadde	12	32	44
13	sandi	20	30	50
14	mohammed	23	32	55
15	kalid	20	30	50
16	olim	23	32	55
17	limoun	20	30	50
18	sauda	12	32	44
19	osama	12	32	44
20	kalm	23	32	55
-----	Total Grades (...)	484	717	-----

OK