

INDEX

SL NO.	Date	Name of Experiment	Page No.	Remarks
1	9/3/22	Operators & Conditional Statements	1-4	
2	10/3/22	Arrays	5-9	
3	16/3/22	Constructors	10-14	
4.	17/3/22	Method Overloading	15-18	
5.	23/3/22	Packages	19-21	
6.	24/3/22	Exception Handling	22-27	
7.	13/4/22	Multi Threading	28-32	
8.	20/4/22	Vector & its operations	33-37	
9.	21/4/22	String Operations	38-47	
10	27/4/22	Calendar	48-51	
11	28/4/22	Applet	52-56	
12	4/5/22	Swings	57-61	

INDEX

SL NO.	Date	Name of Experiment	Page No.	Remarks
1	9/3/22	Operators & Conditional Statements	1-4	
2	10/3/22	Arrays	5-9	
3	16/3/22	Constructors	10-14	
4	17/3/22	Method Overloading	15-18	
5	23/3/22	Packages	19-21	
6	24/3/22	Exception Handling	22-27	
7	13/4/22	Multithreading	28-32	
8	20/4/22	Vector and its operations	33-37	
9	21/4/22	String Operations	38-47	
10	27/4/22	Calendar	48-51	
11	28/4/22	Applet	52-56	
12	4/5/22	Swings	57-61	

INDEX

[illegible]

Problem Definition :-

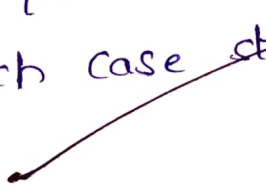
Design and develop a java program to implement the operators and conditional statements

Description :-

* Operator in java is a symbol that is used to perform operations like +, -, *, / etc.,

* Conditional statements are mostly used in decision making scenarios. The conditional statements are also referred as branching statements. There are different types of conditional statements

They are:

1. if statement
 2. nested if statement
 3. if-else statement
 4. if-else-if statement
 5. Switch case statement
- 

Algorithm :-

step 1 : start

step 2 : import package

step 3 : Declare variables $a, b, \text{result} = 0$

step 4 : Accept two values a & b

step 5 : if $a = 0$ & $b = 0$ then print result .

step 6 : else

Accept the selection

step 7 : Calculate the required operation

step 8 : Print result

step 9 : End



Output :-

Enter any two numbers

26

28

please select your option

1. addition

2. subtraction

3. Multiplication

4. division

1

The result is : 54

Conclusion :

The above java program executed successfully.



Problem Definition :-

Design and develop a java program to implement the types of arrays

Description :-

An array is a collection of similar data types. Array is a container object that holds values of homogeneous types. It is also known as static data structure because size of an array must be specified at the time of its declaration.

Algorithm :-

- step 1 : Start
- step 2 : Declare i, j ;
- step 3 : Declare array, $a[]$;
- step 4 : Print "length of given array is" + n .
- step 5 : Print "Enter elements into array is" + n
- step 6 : ~~for~~ $(i=0; i < n; i++)$
- step 7 : $a[i] = \text{sc.nextInt}();$
- step 8 : print "elements before sorting"
- step 9 : ~~for~~ $(i=0; i < n; i++)$

step 10: print ($a[i]$);

step 11: for ($i=0; i < n; i++$)

step 12: if ($a[i] < a[j]$)

step 13: for (int $j=1; j < n; j++$)

step 14: $a[j] \rightarrow \text{temp} \Rightarrow \text{temp} = a[j]$

$a[j] \rightarrow a[i] \Rightarrow a[i] = a[j]$

$\text{temp} \rightarrow a[j] \Rightarrow a[j] = \text{temp};$

step 15: End



Output :-

length of the given array is: 3
enter elements in the array a[]:

99

15

67

Elements in the array before sorting:

99

15

67

elements in the array after sorting:

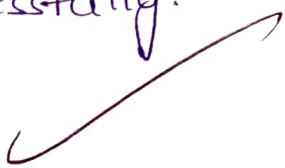
99

67

15

Conclusion :-

The above java program executed successfully.



Problem Definition :-

To design and develop a java program to demonstrate types of constructors.

Description :-

A constructor is a block of codes similar to the method. It is called when an instance of the class is created. At the time of calling constructor, memory for the object is allocated in the memory.

Algorithm :-

step 1 : Start

step 2 : Import Scanner class

step 3 : Create an object for scanner class.

step 4 : Declare the area()

step 5 : Read the radius of the circle then
$$\text{area} = 3.14 * r * r$$

step 6 : Declare area() for triangle then
$$\text{area of triangle} = (b * h / 2)$$

step 7 : Find the area of sphere = $3.14 * 6 * r * r$

step 8 : Calculate area of rectangle = $u * v$

step 9 : Declare the main class and main method.

step 10: Declare int ch

step 11: Start the do loop

step 12: Enter the type of constructor you need to perform

step 13: Start the switch statement
switch(ch)

step 14: if case if 1 then
area a₁ = new area();

step 15: if case if 2 then
area a₂ = new area(h,b);

step 16: if case if 3 then
area a₃ = new area(s);

step 17: if case if 4 then
area a₄ = new area(l,b);

step 18: default:
Invalid option

step 19: End the switch statement

step 20: End the do while loop

step 21: End

Output :-

Types of Constructors

1. Circle
2. Triangle
3. Sphere
4. Rectangle

Enter your choice

4

Enter the length and breadth of Rectangle

4

5

The area of rectangle

20

Conclusion:-

The above java program executed successfully.



Problem Definition:-

Design and develop a java program for implementation of method overloading.

Description:-

If a class has multiple methods having same name but different in parameters, it is known as method overloading.

Algorithm:-

- step 1: start
- step 2: Declare test() and print "No parameters".
- step 3: Declare test(int a) and print a.
- step 4: Declare test(int a, int b) and print "a and b".
- step 5: Declare test(double a) and print "a".
- step 6: Create an object for class.
- step 7: Declare result variable.
- step 8: Call the methods
- step 9: print ~~the~~ result
- step 10: End

Output :-

No parameters

a:30

a and b:40 50

double a:120.25

result of ob.test(120.25):14460.0625

Conclution :-

The above java program executed success
fully.



Name of the Experiment:

PACKAGES

Page no. 19

Problem Definition:-

Design and develop a java program to implement the concept of packages.

Description:-

A java package is a group of similar types of classes, interfaces and sub-packages. It can be categorized in two forms built-in-package and user-defined package.

Algorithm:-

step 1: start

step 2: Declare variables name, author, float price, year.

step 3: create a constructor

```
public BookDetails(String a, String n, float p,  
int y)
```

step 4: Declare a method

```
print "name"
```

```
print "author"
```

```
print "price"
```

```
print "year"
```

step 5: Create an object for constructor

step 6: call the display()

step 7: End

Output :-

Book Name : Wings of fire

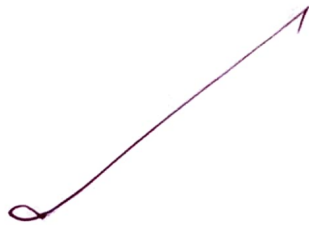
Book Author : Abdul kalam

Price : 2000.00f

Year of publishing : 2009

Conclusion :-

The above java program executed successfully.



RM

Problem Definition:-

Design and develop a java program in a java to implement the concept of Exception handling.

Description:-

The Exception handling in java is one of the powerful mechanism to handle the run time errors so that the normal flow of the application can be maintained.

Algorithm:-

- step 1: start
- step 2: import java.io.* package and
java.lang.* package
- step 3: Write exception class
- step 4: Declare and print msg
- step 5: class exception1 starts
- step 6: Declare variables
eno, ename, job, sal, count
- step 7: try
for (i=count; i<3; i++)

step 8: print the employee details

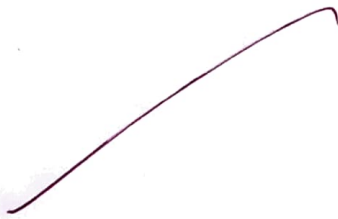
step 9: catch (MyException e)

step 10: print ("Exception caught" + e)

step 11: call disp()

step 12: print "e.no , ename, job, sal";

step 13: End



Output:-

Enter 1 employee details:

Enter employee no and name:

1

Satheesh

Enter job and salary:

Software

2,00,000

Enter 2 employee details:

Enter employee no and name:

2

Dhruva

Enter job and salary:

Manager

2,90,000

Enter 3 employee details:

Enter employee no and name:

3

Nandha

Enter job and salary:

Hardware

2,50,000

ENO	ENAME	JOB	SALARY
1	Satheesh	Software	2,00,000
2	Dhruva	Manager	2,90,000
3	Nandha	Hardware	2,50,000

Conclusion :-

The above java program executed successfully.



Problem Definition :-

Design and develop a program in java to demonstrate the concept of multi-threading.

Description:-

Multithreading is a model of program execution that allows for multi-threads to be created within a process execution independently but concurrently sharing process. Resources depending on the hardware, threads can run fully parallel if they are distributed to their own CPU core.

Algorithm:-

step 1 : start

step 2 : Create even thread with extends thread.

step 3 : create `run()` method with try and catch blocks.

step 4 : Create new class odd thread which extends thread i.e., thread 2.

step 5 : Create `run` method with try and catch block of code.

step 6: try block of code which prints even numbers and exit from thread.

step 7: Create main class thread demo.

step 8: Call the methods that had initialized in even thread, add thread.

even thread e new;

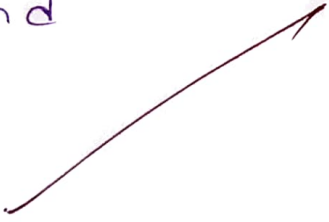
odd thread o new;

step 9: start running thread using keyword

e.start();

o.start();

step 10: End



Output :-

odd 1
Even 2
odd 3
odd 5
Even 4
odd 7
odd 9
Even 6
odd 11
odd 13
Even 8
Exit from threadOdd
Even 10
Even 12
Even 14
Exit from threadEven



Conclusion:-

The above java program executed successfully.



Problem Definition:

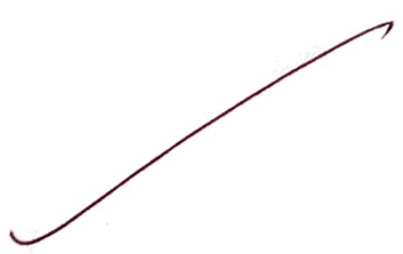
To write a menu based program in java, that occurs a shopping list of items from command line and store in a vector and perform operations.

Description:-

- * It contains components that can be accessed using an integer index similar to an array.
- * The size of a vector can grow or shrink as need to accomodate adding and removing items.
- * Vector methods are `addElements`, `elementAt()`, `remove element`, `CopyInto(Array)`.

Algorithm:-

- step 1: Start the program.
- step 2: Create a class with name `vectorDemo`.
- step 3: Create object 'v' for vector class with arguments.
- step 4: Print 'v' size and capacity.
- step 5: Add elements into vector, with integer type.
- step 6: Print capacity after 4 additions.

- step 7 : Add 6 more elements into 'v' & print the capacity of 'v'.
- step 8 : print the first & last elements in v.
- step 9 : check the 'v' contains '3'
if (v contains (new Integer(3)))
- step 10 : Create vE num object for enumeration
- step 11 : print the elements of vector with vE
num.nextElement()
- step 12 : stop the program.
- 

Name of the Experiment:

Output :-

Initial size : 0

Initial capacity : 3

capacity after four additions : 5

current capacity : 5

current capacity : 7

current capacity : 9

First element : 1

Last element : 12

vector contains 3

Elements in vector :

1

2

3

4

5.45

6.08

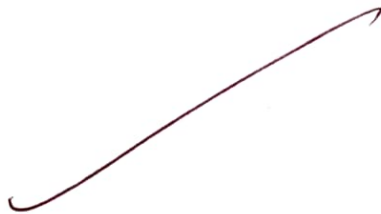
7

9.4

10

11

12



Conclusion :-

The above java program executed successfully.

Problem Definition :-

Design and develop a java program to perform string operations.

Description :-

String is a sequence of characters. It is immutable which means it cannot be changed. It is basically an object like an array of characters works same as java string. String class provides a lot of methods to perform operations on string such as concat(), compare(), equals(), split() etc.,

Algorithm :-

step 1 : start

step 2 : create class StringOP

step 3 : create methods concat(), compare(), equals(), upper(), lower(), len(), sub().

step 4 : create obj class java8 with main method.

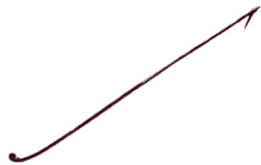
step 5 : Create object 's' for StringOP class.

step 6 : Read the input from user.

step 7 : Using switch to select the choice of operations by switch cases

step 8 : print the operation result.

step 9 : stop the program.



Output :-

String Operations

1. String Concatination

2. String Compare

3. String compare with ignore case

4. String to upper case

5. String to lower case

6. String length

7. String sub string

8. Exit

Enter your option 1

Enter first string raja

Enter second string chandhu

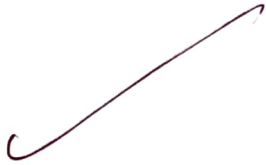
Using + operator : rajachandhu

Using concatenation method :

rajachandhu

Conclusion :

The above java program executed successfully.



A handwritten signature in dark ink, consisting of stylized initials and a horizontal line.

Problem Definition :-

Design and develop a java program to display calendar data by using the java utilities.

Description :-

Java calendar class is an abstract class that provides method for converting date b/w a specific instant in time and set of calendar fields such as Month, year, hour etc.

Algorithm :-

step 1 : start

step 2 : Declare variables day, month, year

step 3 : Declare second, minute, hour.

step 4 : Create object

step 5 : Read day:

day = date.get(Calendar, DAY_OF_MONTH);

step 6 : read month and year

month = date.get(Calendar, MONTH);

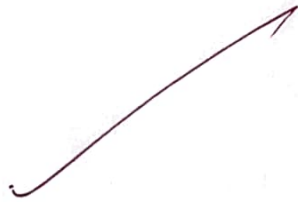
year = date.get(Calendar, YEAR);

step 7 : read second, minute and hour

```
second = date.get(Calendar.SECOND);  
minute = date.get(Calendar.MINUTE);  
hour = date.get(Calendar.HOUR);
```

step 8 : print day, month, year, second, minute,
hour.

step 9 : End.



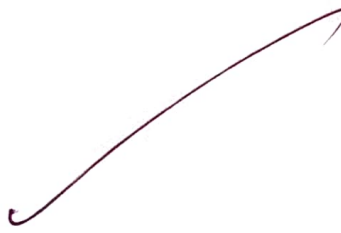
Output :

current date is 26/06/2022

current time is 12:00

Conclusion :

The above java program executed successfully.




Problem Definition :-

Design and develop a java program to create an applet to draw a bar chart from the following details.

Description :-

Applets are small java programs that are primarily used in internet computing. They can be transported over the internet from one computer to another and run using the Applet Viewer or any web browser that supports java.

Algorithm :-

step 1 : start

step 2 : Import applet and awt package

step 3 : Initialize n, label, value.

step 4 : Create inset()

step 5 : Read label and value

step 6 : Create paint (Graphics g)

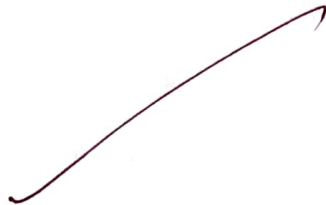
step 7 : for (int i=0; i<n; i++)

step 8 : setColor and drawLine
g.setColor(Color.red);

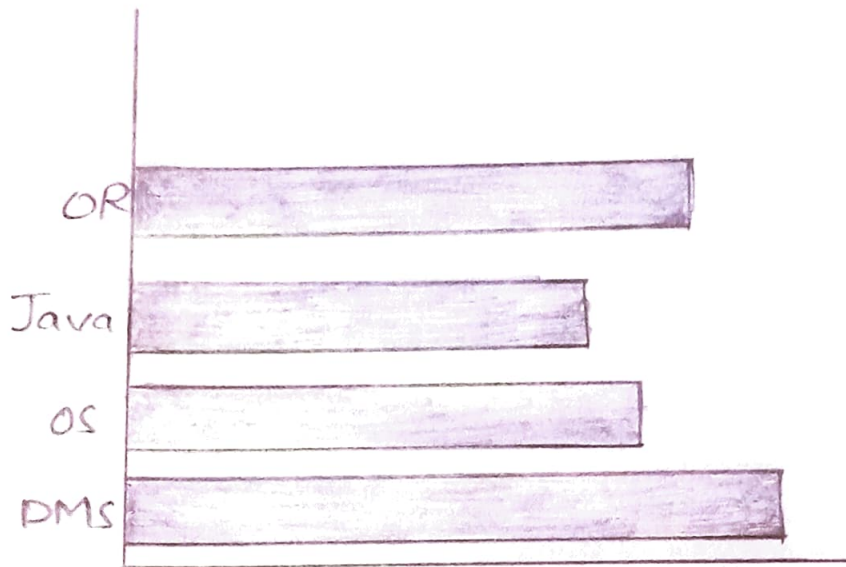
```
g.drawLine(100, 50, 100, 350);  
g.setColor(Color.BLUE);  
g.drawString(label[i], 40, 145 + (150 * i));  
g.setColor(green);
```

step 9: End

step 10: Create html file



Output :-



Conclusion :-

The above java program executed successfully.

Problem Definition:-

Design and develop a java program to implement the concept of swings.

Description:-

Java swings are used to create window based application. It is built on the top of AWT (Abstract Window Toolkit) API and entirely written in java. It provides platform independent and lightweight components.

The javax.swing package provides classes for java swing API such as JButton, JTextField, JTextArea, JCheckBox etc.,

Algorithm:-

- step 1 : start
- step 2 : import javax.swing.*;
- step 3 : Declare main class method & extend.
- step 4 : Declare
JTabbedPane jtp = new JTabbedPane
- step 5 : Declaring cities, colors and flavours.
- step 6 : Using extend keyword to class JPanel.

step 7: Initialize buttons 1 to 4

add(b₁)

add(b₂)

add(b₃)

add(b₄)

step 8: Again using extend keyword for colors panel.

step 9: Initialize checkbox cb₁ to cb₃

add(cb₁)

add(cb₂)

add(cb₃)

step 10: Extend for flavours panel class jcb.addItem
("vanilla"), ("chocolate"), ("strawberry");

step 11: Initialize Applet code

<applet code = "JTabbedPane Demo",
width = 400 , height = 100 >

step 12: closing the applet with HTML tag

step 13: End

Output :-

Applet

cities

colors

Flavors

Delhi

Hyderabad

Banglore

Chennai

Applet

cities

colors

flavors

☐ Black ☐ White ☐ Purple

cities

colors

flavors

Vanilla ☒

Vanilla

chocolate

Strawberry

Conclusion:-

The above java program is executed successfully.

- 11y.



Problem Definition :-

Design and develop a java program to passing message to client and server.

Description :-

The socket class is used to communicate client and server. Through this class, we can read and write message. The server socket class is used at server-side. The accept() method of server socket class blocks the console until the client is connected.

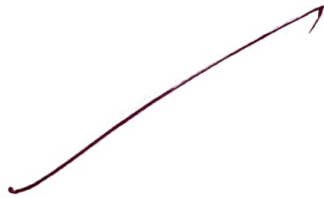
Algorithm :-

- step 1 : start
- step 2 : Import packages
- step 3 : Create try and catch blocks
- step 4 : print "Total bytes received"
- step 5 : if exception
print "Error in connection"
- step 6 : Create file server
- step 7 : Create ServerSocket

step 8 : print "file transfer begins"

step 9 : if exception
print (e.getMessage());

step 10: End



Output :-

```
C:\users\Hp\Desktop>java c fileServer.java
```

```
C:\users\Hp\Desktop>java FileServer
```

Server waiting for the client

The file requested to:-Hello Dhruva!

Hello Dhruva! (The system cannot find the file specified)

```
C:\users\Hp\Desktop>javac FileClient.java
```

```
C:\users\Hp\Desktop>java FileClient
```

Enter needed the file name: Hello Dhruva!

Enter the destination file name with extension:

FileServer.java

Exception in file transfer

Connection reset

Conclusion :-

The above java program is executed successfully.

