**Practical Questions:**

1. Check the characters can make it palindrome or not

Ex, malayalam can be make palindrome malayalam

1. Find out 1st highest occurrence character from given string

Ex, Deepti o/p is e 2 times 1st highest occurrence

1. Remove an element from an array and print all the elements with their new sift position

Ex,

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 1. 10 | 1. 20 | 1. 30 | 1. 40 | 1. 50 |

Index- 0 1 2 3 4

Suppose remove element 30

|  |  |  |  |
| --- | --- | --- | --- |
| 1. 10 | 1. 20 | 1. 40 | 1. 50 |

New index- 0 1 2 3

1. Int i=0;

int j=i++ + ++i + --i + i++;

sop(j);

sop(i);

1. Int i=0;

i=i++;

i=++i;

sop(i);

1. Int a=10;

Int b=a++;

Int c=++a;

a=a++ + ++b + c++;

b=b++ + ++c + a++;

c=c++ + ++a + b++;

sop(c);

sop(b);

sop(a);

1. Int i=10;

if(i++>10 || i++>10){

sop(i++);

}

sop(i);

1. Int a=0;

Int b=a++<=0?0:1;

sop(b);

sop(a);

1. Check given no is palindrome or not?
2. Find out prime no’s between 2 to 100?
3. Find out duplicates Value from given array

ex, i/p: {1,2,3,2,4,5,1}

o/p: 1 & 2

1. Sort the elements descending order from given array

ex, i/p: {1,3,5,2,4}

o/p; 54321

1. Find out 2nd highest occurrence character from given string

Ex, abbas ali o/p is b 2 times 2nd highest occurrence

1. Print the pattern

A

B A

C B A

D C B A

1. Print the pattern

1

2 1 2

3 2 1 2 3

1. print the pattern

5

4 5 4

3 4 5 4 3

2 3 4 5 4 3 2

1. Character count?

i/p : deepti

o/p : d-1

e-2

p-1

t-1

1. Using recursion 123454321
2. Print the pattern

A

B A

C B A

D C B A

1. Print the pattern

1

2 1 2

3 2 1 2 3

1. Sum of three Integer adds to ZERO

i/p: {1,-1,0,2,-2,3,-3};

o/p: 1 + -1 + 0 = 0

1 + 2 + -3 = 0

-1 + -2 + 3 = 0

0 + 2 + -2 = 0

1. Java Program to Sort elements of Java ArrayList Example
2. Java program to Copy all elements of Java HashSet to an Object

Array

1. Sort employee object based on ID in descending order using

comparable and TreesSet

1. Arraylist add element at specific index

Remove duplicates from arraylist without using collections

0 + 3 + -3 = 0

1. Check given no is palindrome or not?
2. Find out prime no’s between 2 to 100?
3. Implement the list of User accounts. Perform following actions by

taking user input

1. Adding new account
2. Updating existing account
3. Deleting existing account
4. Searching particular account
5. Display all accounts
6. Deposit money in particular account
7. Withdraw money from particular account
8. Note: you can use ArrayList or LinkedList
9. Sort the above user accounts on account id and account name
10. Collect the words and their meanings. Perform following actions

by taking user input.

1. Adding new words with its meaning
2. Updating meaning of existing word
3. Deleting existing word
4. Searching meaning of particular word
5. Display all words records
6. Sorting the words in ascending order
7. Note: u can use Map
8. Perform the bulk operation on two ArrayLists which contains

Integers

1. Implements a program of Map which does not allow duplicate

values.

1. Implement the program which extracts the keys from Map and

stores into Set.

1. Find the value of i and j?

int i=0;

i++;

--i;

int j=i++ + --i + ++i + i--;

sop(j);

sop(i);

1. What is output println and value of a?

int a=5;

sop(a>4&&a-->5);

sop(a);

1. Find the value of a,b,c,d?

int a=10;

int b=10;

int c=a++ + ++b;

int d=b++ + ++a + c++;

sop(d);

sop(c);

sop(b);

sop(a);

1. Find out the value of a&b?

int a=5;

a++;

int b=a>5?6:a++;

sop(a);

sop(b);

1. Find out the value of i and println?

int i=4;

i&=5;

sop(++i);

1. Find out the value of a?

int a=4;

a<<=1;

sop(a++);

1. Find out the value of a&b and println?

int a=10;

int b=10;

sop(++a>10&&(b--<10));

sop(a);

sop(b);

1. Find out the value of i and j?

int i=5;

int j=++i>5?i++:++i;

sop(j);

sop(i);

1. Find the output of println and a value?

int a=4;

sop((a&=5)>5||(a--<5));

sop(a);

1. Find the value of a and b?

int a=10;

a<<=1;

int b=a>20?a++:++a;

sop(a);

sop(b);

1. Question 1.

int i=0;

i++;

--i;

int j=i++ + --i + ++i + i--;

j--;

sop(++j); sop(i--);

1. Question 2.

int a=5;

sop(++a>4||a-->5);

sop(a);

1. Question 3.

int a=10,b=10,c=10;

a=a++ + ++b;

int d=b++ + ++a + c++;

sop(d);

sop(c);

sop(b);

sop(a);

1. Question 4.

int a=5;

a++;

int b=--a>5?6:a++;

sop(a);

sop(b);

1. Question 5.

int i=4;

i&=5;

sop(i<<1);

1. Question 6.

int a=4;

a<<=1;

sop(a>>1);

1. Question 7.

int a=10,b=10;

sop(++a>10&&(b--<10));

sop(a);

sop(b);

1. Question 8.

int i=5;

int j=i++>5 ? i++ : ++i ;

sop(j);

sop(i);

1. Question 9.

int a=4;

sop((a&=5)>5||(a--<5));

sop(a);

1. Question 10.

int a=10;

a>>=1;

int b=a++>5 ? a++ : ++a;

sop(a);

sop(b);

**(Arithmetic Program):**

1. Check the given number is palindrome or not

i/p: 121

o/p: is a palindrome

1. Fibonacci Series till 13

o/p: 0 1 1 2 3 5 8 13

**(Pattern Program):**

1. o/p:

1

2 5

3 6 8

4 7 9 10

1. o/p:

A

B A

C B A

D C B A

**(String Program without use inbuilt method except toCharArray() and split()):**

1. Replace character ‘e’ with “\*\*”

Input : deepti

Output : \*\*ee\*\*

1. UpperCase & LowerCase Conversion

i/p : Techno Elevate

o/p : tECHNO eLEVATE

1. CamelCase conversion

i/p : techono elevate

o/p : Techno Elevate

1. WordCount

i/p : Techno Elevate

o/p : Techno6 Elevate7

1. Find the remainder without using % operator
2. Find out the sum without using + operator
3. Find out sub without –
4. Check Leap Year
5. Multiply without using \*
6. Duplicate Character find out

i/p: “deepti”

o/p: e,e

1. Factorial without using loop
2. Armstrong number (153)
3. Palindrome Number (121)
4. Reverse String without loop

i/p: “deepti”

o/p: itpeed

1. Fibonacci series without loop (0,1,1,2,3,5,8...)
2. Odd Even Without Mod operator
3. Bubble Sort

i/p: 4,3,5,1,2

o/p: 1,2,3,4,5

1. Merge sort
2. Quick sort
3. Find Out Largest number from given array

i/p: 1,3,5,6,2

o/p: 6

1. Strong number (145)
2. Perfect number (6)
3. Neon number (9)
4. Swap two no without using temp

i/p: a=10, b=20

o/p: b=10, a=20

1. Count Vowels, Characters, Constants, Special Characters, Word

Count from given string

**Advanced Level**

1. Build Java Program to check if there are duplicate parenthesis in an expression

Ex: ((a+b)+((c+d)))

The subexpression "c+d" is surrounded by two pairs of brackets.

Input : An expression

Output : Expression enclosed by duplicate parenthesis.

1. Find index of closing bracket for a given opening bracket in an expression String can be static input but index must be read as user input

Ex: Input : string = [ABC[23]][89]

index = 0

Output : 8

The opening bracket at index 0 corresponds to closing bracket at index 8.

1. Problem:

Suppose, you were given an integer array [1, 2, 3, 4, 5, 6, 7, 8] and asked to rotate left by 4 and then rotate right by 4. Write a program to accomplish array rotation by left and right.

input: [1, 2, 3, 4, 5, 6, 7, 8]

first output: [5, 6, 7, 8, 1, 2, 3, 4]

second output: [1, 2, 3, 4, 5, 6, 7, 8]

1. ALL IS NOTHING

Consider the sequence of digits from 1 through N (N<=9) in increasing order: 1 2 3 4 ... N Insert either a ‘+’ (for addition) or a ‘-‘ (for subtraction) between each of the digits so that the resultant sum is zero. Print all possible combinations that sum to zero. Example: Enter a number: 7

1+2-3+4-5-6+7=0 1+2-3-4+5+6-7=0 1-2+3+4-5+6-7=0 1-2-3-4-5+6+7=0

1. Create a simple Cipher program in which some integer is the key that is used to both encode and decode a message by XORing the characters in that message.

To encode, the XOR operation is applied the first time, yielding the cipher text. To decode, the XOR is applied the second time, yielding the plain text.

1. When implementing multiple interfaces, what happens if both interfaces declare the same method?

Create two interfaces **IfA** and **IfB** with the same method **doSomething**().

Create a class **MyClass** which implements both interfaces.

Create a main class **MultiInterfaceDemo**. Make an object and refer to both interface references and invoke the methods and check for the output.

1. Can Constants be used in Interfaces?

Develop an interface **IConst**. Create three constants **MIN, MAX(int)** and **ERRORMSG (String).** Gain access to the constants by implementing **IConst**.

1. Convert 124 to binary and display the output.
2. Count all vowels and consonants in the string "ObjectOrientedProgramming"
3. Read an input integer from the user using the console, and print the Octal equivalent of it.
4. Demonstrate method overloading for a simple calculator application. Assumptions can be made here.

JDBC

1. Create a simple JDBC program to establish connection to the database and select all the records of a sample table and display the same on the console. Use getConnection(String url, Properties info) overloaded form of the method.
2. Write a sample JDBC program to demonstrate the usage of transactions.
3. Demonstrate the usage of getTables() in DatabaseMetaData interface, Also enhance it to print the column names of any one table.

(Note: Create 3 tables and get all the table names)

1. Usage of CallableStatement with a dynamic query –

Write Stored Procedure to select/count the number of records with sample USN = 51 from a sample table STUDENT. If it exists, update the record to change the firstname and lastname. If it doesn’t exist, create a new record with USN 51. Call this stored Procedure as studentUpsert().

1. Create STUDENT database with few sample records. Use a select static query to display the records using Java Program.
2. Demonstrate the usage of dynamic query execution with the help of an example program. The dynamic parameters need to be read from the command-line.
3. What are the components of JDBC? (02 Marks)

Ans. The components of JDBC are as follows:

* The JDBC API
* The JDBC DriverManager
* The JDBC Test Suite
* The JDBC-ODBC Bridge

1. What are the different types of JDBC drivers? (02 Marks)

Ans. The different types of JDBC drivers are as follows:

* Type-1 Driver: Refers to the Bridge Driver (JDBC-ODBC bridge)
* Type-2 Driver: Refers to a Partly Java and Partly Native code driver
* Type-3 Driver: Refers to a pure Java driver that uses a middleware driver to connect to a database
* Type-4 Driver: Refers to a Pure Java driver, which is directly connected to a database

1. Name the packages that are used to implement JDBC in an application. (01 Mark)

Ans. The java.sql and javax.sql packages are used to implement JDBC in an application.

1. Name the class that is used to establish a connection to a database. (01 Mark)

Ans. The java.sql.Connection class is used to obtain a connection to a database.

1. Write the programmatic representation of the two ways in which loading of the Driver can happen. (04 Marks)

Ans. The two ways in which Driver can be loaded into the program are as follows:

1. com.mysql.jdbc.Driver driverClassRef = new com.mysql.jdbc.Driver();

DriverManager.registerDriver(driverClassRef);

2. Class.forName(“com.mysql.jdbc.Driver”); or

Class.forName(“com.mysql.jdbc.Driver”).newInstance();

1. List the different advanced data types. (02 Marks)

Ans. The different advanced data types are as follows:

* BLOB data type
* Character Large Object (CLOB) data type
* Struct data type
* Array data type
* REF data type

1. Differentiate between RequestDispatcher and sendRedirect with example programs.
2. Create a Resume Wizard – supply default values whenever the user is missing entering values and also when the user enters
3. Design a web application to keep track of hit count with a header and footer design in the web page.
4. Build a Servlet program that opens data in simple excel spreadsheet to compares quantities of Apples and Oranges and sum up the two in the last column. Take about 4 quantities in 4 columns (Q1, Q2, Q3 and Q4). Two rows will be for Apples and Oranges. Take some random numbers as input. The input can be statically given in the excel in the Servlet.
5. Assume few seconds or minutes to be the idle time of the browser and automatically logout of the application(programmatically). The user should not be clicking on any log-out button or any hyperlink to achieve the same.
6. Create a servlet which counts the number of hits for that page and prints the count on the browser.
7. Create a servlet which refreshes the browser itself every 5 seconds to display the time.
8. Create a Servlet which captures regno information from query string, fetches the corresponding regno information from the database and prints the data on the browser.
9. Create a form which collects the regno information from the user and sends it to the servlet.
10. Create a Servlet which captures regno. Information from the user, interacts with database and prints the corresponding data on the browser.
11. Create a form which collects student information(regno, firstname, lastname, password, isadmin, isguardian) from the browser and sends it to the servlet.
12. Create a login page, which collects regno and password information from user and passes it to a servlet. Create a servlet which captures this information and authenticates it. Based on the authentication result, it should print “Valid Username/Password” success message or “Invalid Username/Password” error message on the browser.