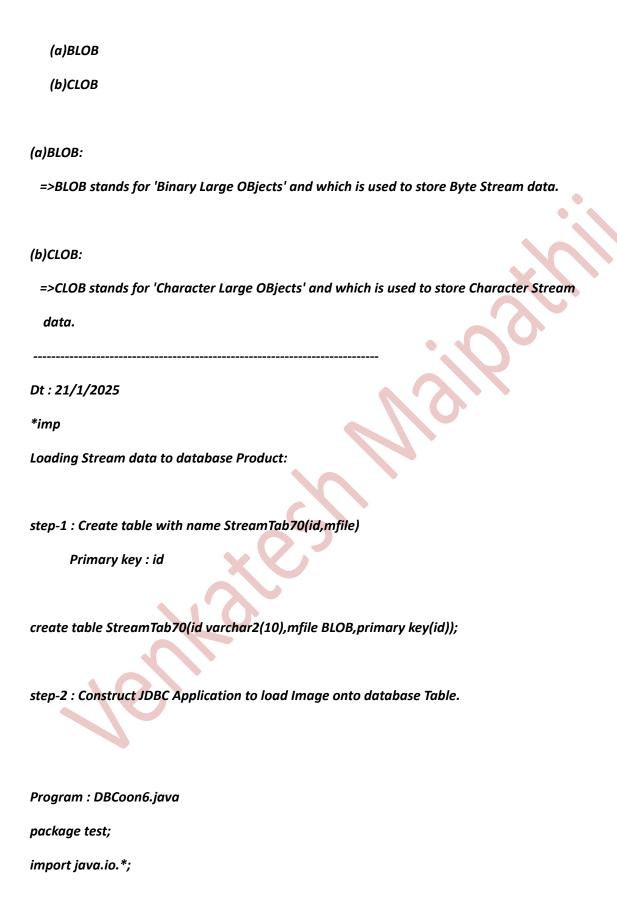*Dt : 20/1/2025*

Ex:

Program : DBCon5.java

```java
package test;
import java.sql.*;
public class DBCon5
{
    public static void main(String[] args)
    {
      try {
            Class.forName("oracle.jdbc.driver.OracleDriver");
            Connection con = DriverManager.getConnection

("jdbc:oracle:thin:@localhost:1521:xe","system","tiger");
            System.out.println("*************Statement************");
            Statement stm =
con.createStatement(ResultSet.TYPE_SCROLL_INSENSITIVE,
                        ResultSet.CONCUR_READ_ONLY);
            ResultSet rs1 = stm.executeQuery("select * from Product70");
            System.out.println("------absolute(3)---------");
            rs1.absolute(3);
            System.out.println(rs1.getString(1)+"\t"
                    +rs1.getString(2)+"\t"
                    +rs1.getFloat(3)+"\t"
                    +rs1.getInt(4));
            System.out.println("------relative(-1)--------");
            rs1.relative(-1);
            System.out.println(rs1.getString(1)+"\t"
                    +rs1.getString(2)+"\t"
                    +rs1.getFloat(3)+"\t"
                    +rs1.getInt(4));
            System.out.println("------last()-------");
            rs1.last();
            System.out.println(rs1.getString(1)+"\t"
                    +rs1.getString(2)+"\t"
                    +rs1.getFloat(3)+"\t"
                    +rs1.getInt(4));
            System.out.println("-----first()------");
            rs1.first();
            System.out.println(rs1.getString(1)+"\t"
                    +rs1.getString(2)+"\t"
                    +rs1.getFloat(3)+"\t"
                    +rs1.getInt(4));
          System.out.println("*******PreparedStatement*******");
          PreparedStatement ps = con.prepareStatement("select * from
Product70",
```

```
ResultSet.TYPE_SCROLL_INSENSITIVE,ResultSet.CONCUR_READ_ONLY);
            ResultSet rs2 = ps.executeQuery();
            System.out.println("--------Products in reverse------");
            rs2.afterLast();
            while(rs2.previous()) {
                    System.out.println(rs2.getString(1)+"\t"
                            +rs2.getString(2)+"\t"
                            +rs2.getFloat(3)+"\t"
                            +rs2.getInt(4));
            }
        }catch(Exception e) {
            e.printStackTrace();
        }
    }
}
```

o/p:

**************Statement*************

------absolute(3)---------

E11   CDR   1100.0 11

------relative(-1)--------

G32   MDD   1800.0 18

------last()-------

F34   FDD   1000.0 10

-----first()------

A21   Mous   1200.0 12

********PreparedStatement********

--------Products in reverse------

F34   FDD   1000.0 10

E11   CDR   1100.0 11

G32   MDD   1800.0 18

A21   Mous   1200.0 12

----

*imp

Streams with Database:(Multi-Media data with Database)

define stream?(normal definition)

=>The continuous flow of data is known as stream.

Types of streams:

=>Java Support,the following two types of streams:

1.Byte Stream

2.Character Stream

1.Byte Stream:

=>The continuous flow of data in the form of 8-bits is known as Byte Stream or Binary

Stream.

=>Byte Stream supports all Multi-Media data formats.

2.Character Stream:

=>The continuous flow of data in the form of 16-bits is known as Character Stream or

Text Stream.

=>Character Stream is preferable for Text data,which means not preferable for Audio,

Video,Image and Animation data.

=>we use the following sql-types to store Stream data:

(a)BLOB

(b)CLOB

(a)BLOB:

  =>BLOB stands for 'Binary Large OBjects' and which is used to store Byte Stream data.

(b)CLOB:

  =>CLOB stands for 'Character Large OBjects' and which is used to store Character Stream

  data.

 --

Dt : 21/1/2025

*imp

Loading Stream data to database Product:

step-1 : Create table with name StreamTab70(id,mfile)

      Primary key : id

create table StreamTab70(id varchar2(10),mfile BLOB,primary key(id));

step-2 : Construct JDBC Application to load Image onto database Table.

Program : DBCoon6.java

package test;

import java.io.*;

```java
import java.util.*;

import java.sql.*;

public class DBCon6 {

        public static void main(String[] args) {

    Scanner s = new Scanner(System.in);

    try(s;){

        Class.forName("oracle.jdbc.driver.OracleDriver");

        Connection con = DriverManager.getConnection

                    ("jdbc:oracle:thin:@localhost:1521:xe","system","tiger");

        PreparedStatement ps = con.prepareStatement

                    ("insert into StreamTab70 values(?,?)");

        System.out.println("Enter the Id to Store Image:");

        String id = s.nextLine();

        System.out.println("Enter the fPath&fName(source of Image)");

        String path = s.nextLine();

        File f = new File(path);

        if(f.exists()) {

                FileInputStream fis = new FileInputStream(path);

                ps.setString(1, id);

                ps.setBinaryStream(2, fis, f.length());

                int k = ps.executeUpdate();

                if(k>0) {

                        System.out.println("Image Stored Successfully...");

                }

        }else {
```

```java
                    System.out.println("Invalid fPath or fName....");

                }

            }catch(Exception e) {

                e.printStackTrace();

            }

        }

}
```

o/p:

Enter the Id to Store Image:

A11

Enter the fPath&fName(source of Image)

C:\Images\c-tara.jpg

Image Stored Successfully...

 ----

*imp

Retrieving Image from database product:

Program : DBCon7.java

package test;

import java.util.*;

import java.io.*;

import java.sql.*;

public class DBCon7 {

        public static void main(String[] args) {

```java
Scanner s = new Scanner(System.in);

try(s;){

    Class.forName("oracle.jdbc.driver.OracleDriver");

    Connection con = DriverManager.getConnection

                ("jdbc:oracle:thin:@localhost:1521:xe","system","tiger");

    PreparedStatement ps = con.prepareStatement

                ("select * from StreamTab70 where id=?");

    System.out.println("Enter the id to retrieve Image:");

    String id = s.nextLine();

    ps.setString(1, id);

    ResultSet rs = ps.executeQuery();

    if(rs.next()) {

            Blob b = rs.getBlob(2);

            byte by[] = b.getBytes(1, (int)b.length());

            System.out.println("Enter the fPath&fName(destination to store image)");

            String path = s.nextLine();

            FileOutputStream fos = new FileOutputStream(path);

            fos.write(by);

            System.out.println("Image retrieved Successfully...");

            fos.close();

    }else {

            System.out.println("Invalid id....");

    }

}catch(Exception e) {

    e.printStackTrace();
```

```
        }
            }
}
```

o/p:

Enter the id to retrieve Image:

A11

Enter the fPath&fName(destination to store image)

E:\Images\XYZ.jpg

Image retrieved Successfully...

Diagram:

===