Dt : 20/11/2023

**imp*

Streams with Database:

define Stream?

=>The contineous flow of data is known as Stream.

Types of Streams:

=>Streams in Java are categorized into two types:

(i)Byte Stream

(ii)Character Stream

(i)Byte Stream:

=>The contineous 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 like Audio,Video, Image,Animation and Text.

(ii)Character Stream:

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

=>Character Stream is preferable for Text data and not preferable

for Audio,Video,Image and Animations files.

faq:

define Input Stream?

=>The stream coming into JavaProgram is known as Input Stream.

faq:

define Output Stream?

=>The stream going outof JavaProgram is known as Output Stream

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=>The following SQL-types will support Stream data:

(a)BLOB

(b)CLOB

(a)BLOB:

=>BLOB stands for 'Binary Large OBjects' and which support Byte Stream data.

(b)CLOB:

=>CLOB stands for 'Character Large OBjects' and which support Character Stream data.

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*imp

Construct JDBC Application to Store Image onto DB product:

step-1 : Create table with name StreamTab57 from SQLCommandLine

```
create table StreamTab57(id varchar2(10),mfile BLOB,primary key(id));
```

step-2 : Construct the Application

Program : DBCon14.java

```
package test;
import java.util.*;
import java.sql.*;
import java.io.*;
public class DBCon14 {
        public static void main(String[] args) {
    Scanner s = new Scanner(System.in);
    try(s;){
        try {
                Class.forName("oracle.jdbc.driver.OracleDriver");
            Connection con = DriverManager.getConnection
             ("jdbc:oracle:thin:@localhost:1521:xe",
```

```
                    "system","manager");
        PreparedStatement ps = con.prepareStatement
                    ("insert into StreamTab57 values(?,?)");
        System.out.println("Enter the Id:");
        String id = s.nextLine();
        ps.setString(1, id);
        System.out.println("Enter the fPath&fName:(Source)");
        File f = new File(s.nextLine());
        if(f.exists()) {
            FileInputStream fis=new FileInputStream(f);
            ps.setBinaryStream(2, fis, f.length());
            int k = ps.executeUpdate();
            if(k>0) {
                System.out.println("Image Stored Successfully..");
            }
        }else {
            System.out.println("Invalif fPath or fName...");
        }
        con.close();
    }catch(Exception e) {e.printStackTrace();}
}//end of try with resource
  }
```

}

o/p:

Enter the Id:

A111

Enter the fPath&fName:(Source)

C:\Images\IMG_4917.JPG

Image Stored Successfully..

Diagram:

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****imp***

Construct JDBC Application to retrieve image from DB Product:

Program : DBCon15.java

```
package test;
import java.io.*;
import java.util.*;
import java.sql.*;
public class DBCon15 {
        public static void main(String[] args) {
     Scanner s = new Scanner(System.in);
```

```
try(s;){
    try {
        Class.forName("oracle.jdbc.driver.OracleDriver");
      Connection con = DriverManager.getConnection
       ("jdbc:oracle:thin:@localhost:1521:xe",
                    "system","manager");
      PreparedStatement ps = con.prepareStatement
                  ("select * from StreamTab57 where id=?");
      System.out.println("Enter the id:");
      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)");
            File f = new File(s.nextLine());
            FileOutputStream fos = new FileOutputStream(f);
            fos.write(by);
            System.out.println("Image retrieved Successfully...");
            fos.close();
      }else {
```

```
                    System.out.println("Invalid id...");
                }
                con.close();
            }catch(Exception e) {e.printStackTrace();}
        }//end of try with resource
        }
}
```

o/p:

Enter the id:

A111

Enter the fPath&fName:(Destination)

D:\Images\img.jpg

Image retrieved Successfully...

Diagram:

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