Working with Large Objects (BLOB And CLOB)
==

Sometimes as the part of programming requirement,we have to insert and retrieve large files like images,video files,
audio files,resume etc wrt database.

Eg:upload image in matrinomial web sites
      upload resume in job related web sites

To store and retrieve large information we should go for Large Objects(LOBs).

There are 2 types of Large Objects.
1. Binary Large Object (BLOB)
2. Character Large Object (CLOB)

1) Binary Large Object (BLOB)

A BLOB is a collection of binary data stored as a single entity in the database.

BLOB type objects can be images,video files,audio files etc..

BLOB datatype can store maximum of "4GB" binary data.

2) CLOB (Character Large Objects):

A CLOB is a collection of Character data stored as a single entity in the database.

CLOB can be used to store large text documents(may plain text or xml documents)

CLOB Type can store maximum of 4GB data.

Eg: resume.txt

Steps to insert BLOB type into database:

1. create a table in the database which can accept BLOB type data.

```
        create table persons(name varchar2(10),image BLOB);
```

2. Represent image file in the form of Java File object.

```
        File f = new File("sachin.jpg");
```

3. Create FileInputStream to read binary data represented by image file

```
        FileInputStream fis = new FileInputStream(f)
```

4. Create PreparedStatement with insert query.

```
      PreparedStatement pst = con.prepareStatement("insert into persons values(?,?)");
```

5. Set values to positional parameters.

```
      pst.setString(1,"sachin");
```

To set values to BLOB datatype, we can use the following method: setBinaryStream()

```
public void setBinaryStream(int index,InputStream is)
public void setBinaryStream(int index,InputStream is,int length)
public void setBinaryStream(int index,InputStream is,long length)
```

6. execute sql query

```
      pst.executeUpdate();
```

Steps to Retrieve BLOB type from Database
==

1. Prepare ResultSet object with BLOB type

```
      ResultSet rs = st.executeQuery("select * from persons");
```

2. Read Normal data from ResultSet

```
      String name=rs.getString(1);
```

3. Get InputStream to read binary data from ResultSet

```
      InputStream is = rs.getBinaryStream(2);
```

4. Prepare target resource to hold BLOB data by using FileOutputStream

```
FileOutputStream fos = new FOS("katrina_new.jpg");
```

5. Read Binary Data from InputStream and write that Binary data to output Stream.

```
int i=is.read();
while(i!=-1)
{
      fos.write(i);
      is.read();
}

      or
byte[] b= new byte[2048];
while(is.read(b) > 0){
      fos.write(b);
  }
```