**JAC444 - Lecture 13**

Java DataBase Connectivity

Segment 1 - Introduction to JDBC

# JDBC

**In this lesson you will be learning about:**

* What JDBC Technology is and how you can use it
* Basic steps in working with database
* Connection URL with the database

# JDBC Goals

JDBC (Java Database Connectivity)

is a standard SQL database access interface

## • The JDBC API defines classes to represent constructs such as database connections, SQL statements, result sets, and database metadata

## • JDBC allows a Java program to issue SQL statements and process the results

* To provide Java programmers with a uniform, simple interface to a wide range of relational databases DB independence.
* It can replace underlying database with minimal code impact.

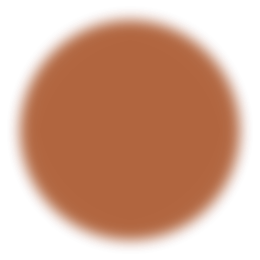
# JDBC Definitions

* JDBC is a Java API for executing SQL statements.
* It consists of a set of classes and interfaces written in the Java programming language.
* The combination of Java and JDBC lets a programmer write it once and run it anywhere.

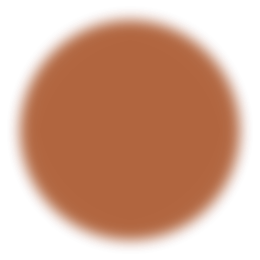
# JDBC technology

Four steps required to design apps with JDBC

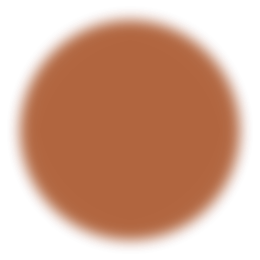
Connect to the database



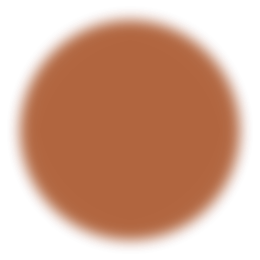
3



1



2



4

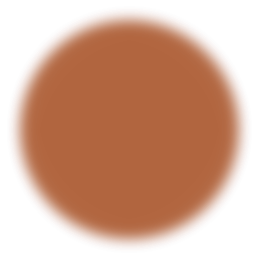
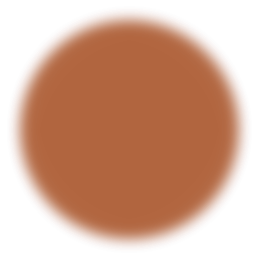
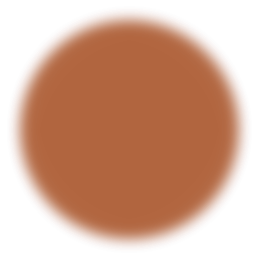
Create a statement and execute the query

Look at the result set

Close connection

# Basic Steps

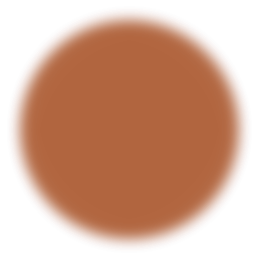
1 **Connection con = DriverManager.getConnection ( jdbc:odbc:seneca", “user", "password");**



**Statement stmt = con.createStatement();**2

**ResultSet rs =** 3

**stmt.executeQuery("SELECT a, b, c FROM TableX"); while (rs.next()) { int x = rs.getInt("a"); String s = rs.getString("b"); float f = rs.getFloat("c"); } con.close();**



4

# Driver Manager

**7**

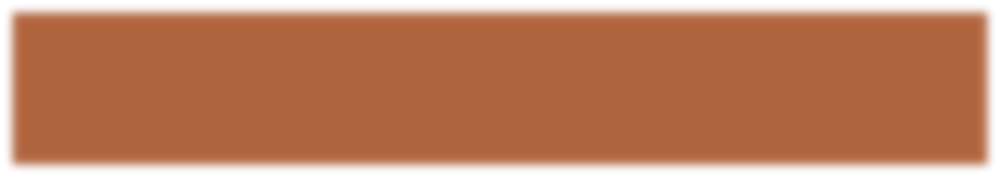
**Jordan Anastasiade – Java Programming Language Course**



**Java Application**



JDBC API



JDBC Driver Manager



JDBC ODBC



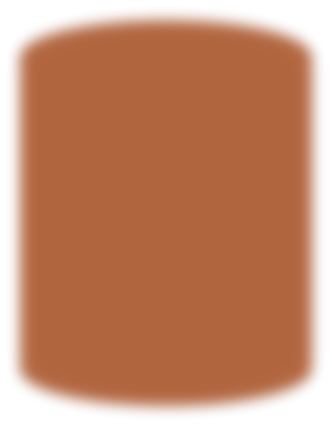
ODBC Driver



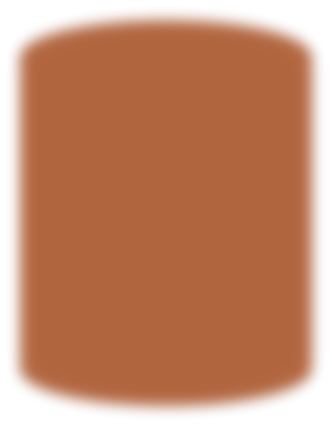
JDBC Driver



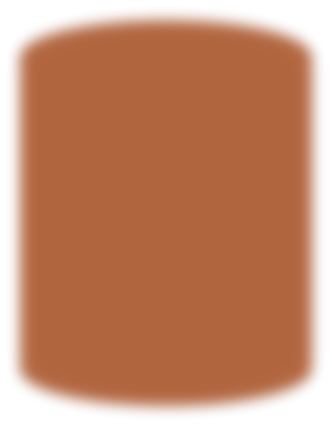
JDBC Driver



DB



DB



DB

# Load the Driver Manager

## • The driver manager is the piece of software that knows how to talk to the actual database server

## • To load the driver one should load the appropriate class.

**try {**

**Class.forName(“oracle.jdbc.driver.OracleDriver”);**

**} catch (ClassNotFoundException e) {**

**System.out.println(“Error loading the driver” + e);**

**}**

## Most drivers are distributed as JAR files.

## Include the path to your JAR file to your CLASSPATH settings.

**Jordan Anastasiade – Java Programming Language Course 8**

# Connection URL

The structure of URL for accessing databases

**protocol:subprotocol:datasourcename**

• *protocol* : jdbc

## • *subprotocol*: vendor specific format

## • *datasourcename*: your database name

## • Example:

String host = “dbhost.companyname.com”;

String db = “databaseName”; int port = 1234;

String oracleURL =

“jdbc:oracle:thin:@” + host + “:” + port + “:” +db;

**Jordan Anastasiade – Java Programming Language Course 9**