Assignment - 3

1) Explain 2-tier and 3-tier database architecture.

→ 2 - Tier Architecture :

The 2-tire architecture is same as basic client-server. In the two-tier architecture, applications on the client end can directly communicate with the database at the server side. for this interaction, API's like ODBC, JDBC are used.

The user interfaces and application programs are run on the client-side.

The server side is responsible to provide the functionalities like : query processing and transaction managment.

To communication with the DBMS, client-side application establishes a connection with the server side.

→ 3 - Tier Architecture :

The 3-tire architecture contains another layer between the client and server. In this architecture, client can't directly communicate with the server.

The application on the client-end interacts with an application server which further communicates with the database system.

End user has no idia about the existence of the database beyond the application server. The database also has no idia about any other beyond the application.

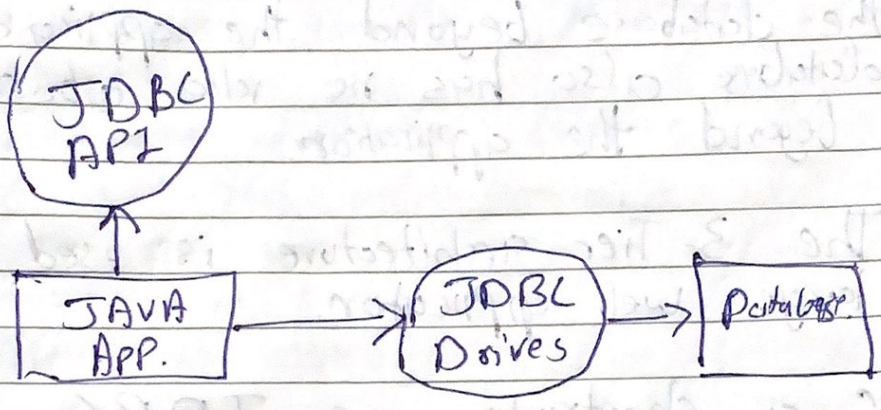
The 3- Tier architecture is used in case of large web application.

2) Write a shortnote on JDBC.

JDBC stand for Java Development Connectivity.
JDBC is a Java API to connect and execute the query with the database. It is a part of Java Standard Edition. JDBC API uses JDBC drivers to connect with the database there are 4 types of JDBC drives

- JDBC - ODBC Bridge Driver
- Native Drivers
- Network Protocol Drivers.
- Thin Drivers.

We can use JDBC API to Access data stored in any Relational database. By the help of JDBC API, we can sure update, Delete and fetch data from the database.



3) Explain API Component.

Following are the main JDBC API Components.

1) The Java SQL Package: This Package contains set or course and interface that are used to communicate with database.

2) JDBC-ODBC Bridge: The JDBC-ODBC Bridge is a type of JDBC Drivers that allows Java Application to communicate with database using ODBC drivers.

3) JDBC Driver Test Suit: The JDBC Driver Test Suit it used to test the facutionality of JDBC Drivers.

4) Documentation It provides documentation for all the method, classes and interface of java.SQL Package HTML formate.

(4) Explain JDBC Drivers

- JDBC
Drivers is a software component that enables Java application to interact with the database.

Type of Drivers
1) JDBC - ODBC Bridge Drivers
2) Native - API Drivers.
3) Network Protocol Drivers.
4) Thin Drivers.

(1) JDBC - ODBC Drivers

- JDBC - ODBC Bridge drivers uses ODBC drivers to connect to the database this drivers converts JDBC method calls into the ODBC function calls.

② Native - API Driver

- The Native API driver use the client side libraries of the database. The drivers convert JDBC Method calls into native calls of the database API. It is not written entirely in Java

③ Network Protocol Drivers

The Network Protocol Drives uses middleware that convert JBC calls directly or indirectly into the used database protocol It is fully written in JAVA.

④ Thin Driver

The thin driver converts JDBC calls directly into the vender specify database-protocol. That is which is known as this Driver.

⑤ Write Shortnote on JDBC - ODBC Bridge

→ This driver implement JDBC operation by transacting them into ODBC operation.

-> To ODBC is Appers as a normal Application program.

-> The Bridge implements JDBC for any database for which on JDBC Driver in available.

-> The Bridge and contain a native library use to access JDBC - ODBC

-> The bridge is a joint development of intervelo and Java.

-> The bridge is implement is Java and user java is native methods to call ODBC

-> The Bridge is istalled Automaticals with the apk as package sum JDBC ODBC.

(6) Write Advantage & Dis Advantage of JDB

Advantage:

- Can read any database it process drives are installed.
- No contained conversion required
- Query and stored procedure supported.
- Can be use for both synchronus and Asyncrot
- Zero configration for network components.
- Database connection identified by URL.

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-> Dis Advantages.

-> Correct drivers need to be deployed for each type of database.

- Can't update or inspect multiple tables with sequence.