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3.File Storage:

=>The smallest permanent storage of ComputerSystem which is 'controlled and managed' by the OperatingSystem is known as FileStorage.

=>In the process of establishing communication b/w Java-Program and File-Storage,the Java-Program must be Constructed using 'Classes and Interfaces' available from 'java.io' package(IO Streams and File API)

Diagram:

DisAdvantages of File Storage:

- (a)Data redundancy**
- (b)Data Inconsistency**
- (c)Difficulty in accessing data**
- (d)Limited data sharing**
- (e)File System corruption**
- (f)Security Problems**

(a)Data redundancy:

=>Same information will be duplicated in different files.known as Data redundancy.

(data duplication)

(b)Data Inconsistency:

=>data can be inconsistent due to data redundancy

(c)Difficulty in accessing data:

=>Difficulty in accessing data,because the data is available in scattered form and there is no quering process.

(d)Limited data sharing:

=>Limited data sharing because data in scattered form.

(e)File System corruption:

=>File System can be Corrupted due to fragmentation or metadata corruption.

(f)Security Problems:

=>File System will have Security Problems.

Note:

=>Because of DisAdvanatages in File-Storage,the File-Storage cannot be taken as major backend for Java-Applications.

=>To Overcom all dis-advantages of File-Storage,we use Database Storage.

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4.Database Storage:

=>The largest permanent storage of ComputerSystem,which is installed from externally is known as Database Storage.

=>In the process of establishing Communication b/w Java-Program and Database-Product, the Java-Program must be constructed using 'Classes and Interfaces' from 'java.sql' package(JDBC API) and the Java-Program must take the support of JDBC-Driver

Diagram:

faq:

define 'driver'?

=>The small s/w program which is used to establish communication b/w two end-points is known as 'driver'

Ex:

Audio drivers

Video drivers

N/W drivers

...

faq:

define JDBC driver?

=>The driver which is used to establish communication b/w Java-Program and DB-Product is known as JDBC driver.

Types of drivers:

=>According Vendor the JDBC drivers are categorized into four types:

- 1.JDBC-ODBC bridge driver(Type-1 driver)**
- 2.Native API driver(Type-2 driver)**
- 3.Network Protocol driver(Type-3 driver)**
- 4.Thin driver(Type-4 driver)**

Note:

=>According to realtime application development,we use only 'Thin driver'

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Creating System Environment ready to execute JDBC Applications:

step-1 : Download and Install Database Product(Oracle)

step-2 : Perform Login process to Database Product

DB UserName : system

DB Password : tiger

step-3 : Create table with name Customer72

(phno,cid,name,city,mid)

Primary Key : phno

**create table Customer72(phno number(15),cid varchar2(15),name varchar2(15),
city varchar2(15),mid varchar2(25),primary key(phno));**

step-4 : Insert min 5 Customer details from SQL-Command-Line

insert into Customer72 values(9898981234,'HM9898981234','Alex','Hyd','a@gmail.com');

insert into Customer72 values(7676761234,'HM7676761234','Raj','Hyd','rj@gmail.com');

insert into Customer72 values(8686861234,'HM8686861234','Ram','Hyd','rm@gmail.com');

SQL> Select * from Customer72;

PHNO	CID	NAME	CITY	MID
9898981234	HM9898981234	Alex	Hyd	a@gmail.com
7676761234	HM7676761234	Raj	Hyd	rj@gmail.com
8686861234	HM8686861234	Ram	Hyd	rm@gmail.com

step-5 : Copy DB-Jar file from "lib" folder of Oracle to User defined folder(on Desktop)

C:\oracle\app\oracle\product\11.2.0\server\jdbc\lib

ojdbc6.jar - Oracle11

faq:

define JAR?

=>JAR stands for 'Java Archive' and which is compressed format of more number of Class files

Note:

=>This DB-Jar file will provide JDBC drivers.

step-6 : Find the PortNo and ServiceName of Database Product(Oracle)

=>PortNo and ServiceName is available from 'tnsnames.ora' file of 'Admin' folder of network

C:\oracle\app\oracle\product\11.2.0\server\network\ADMIN

PortNo : 1521

ServiceName : XE

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Steps used to establish communication to Database product:

step-1 : Loader driver

step-2 : Creating Connection to Database Product

step-3 : preparing JDBC-statement

step-4 : Executing the query

step-5 : Closing the connection from Database

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JDBC API:

=>'java.sql' package is known as JDBC-API and which provide 'classes and Interfaces' to

Construct JDBC-Applications.

=>'Connection' is a Normal interface from java.sql package and which is root of JDBC API.

=>The following are some important methods of 'Connection' interface:

1.createStatement()

2.prepareStatement()

3.prepareCall()

4.setAutoCommit()

5.setAutoCommit()

6.setSavepoint()

7.releaseSavepoint()

8.commit()

9.rollback()

10.close()

