LAB # 1: INTRODUCTION TO LAB & DB ARCHITECTURE

Objective:

1-Oracle Software and CD
2-Client Server Concept
3-Introduction to Oracle, its Architecture & Versions
4-Database lab orientation
5-Sample Database Applications

Scope:

The student should know the following:

- Oracle Installations issues
- Introduction to Oracle and its applications
- Oracle Versions etc.

Useful Concepts :

Oracle Software version 11g Enterprise Edition:

Available on Datum network for Vista & Win.7, Win 10. Oracle for MAC OS is not available.
Datum Access:

1) Press Win+R
2) Enter \\172.16.100.104
3) Username : nuisb\i181234
4) Password : Your Wifi's password

Installation:

1) Create a file to save the Oracle Base (step 8), SID (step 10), and password (step 15).
2) In case of TNS: No listening error.
   I. Press Win+R
   II. Enter "services.msc"
   III. Start/Restart oracle services.

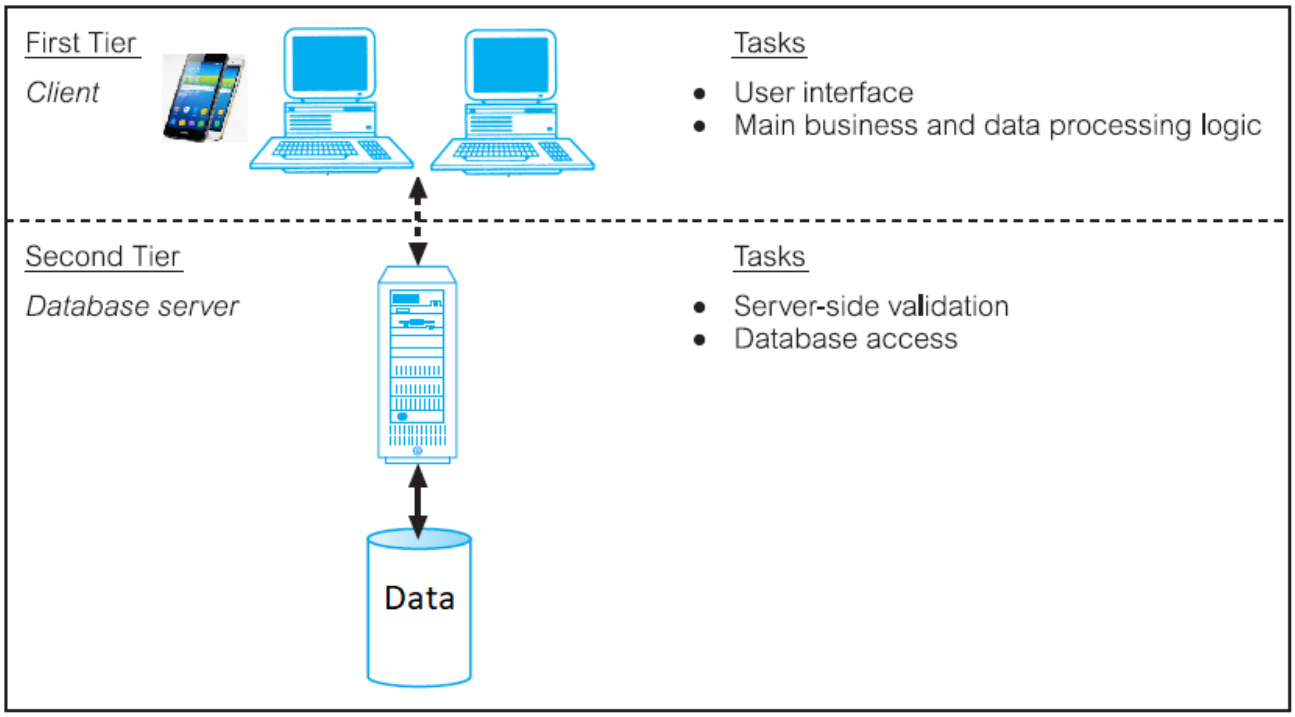
Client-Server Architecture

Client–server refers to the way in which software components interact to form a system. There is a **client** process, which requires some resource, and a **server**, which provides the resource. There is no requirement that the client and server must reside on the same machine. In practice, it is quite common to place a server at one site in a local area network and the clients at the other sites.

Client	Server
• Manages the user interface • Accepts and checks syntax of user input • Processes application logic • Generates database requests and transmits to server • Passes response back to user	• Accepts and processes database requests from clients • Checks authorization • Ensures integrity constraints not violated • Performs query/update processing and transmits response to client • Maintains system catalog • Provides concurrent database access

Client-Server Architecture (2-Tier)

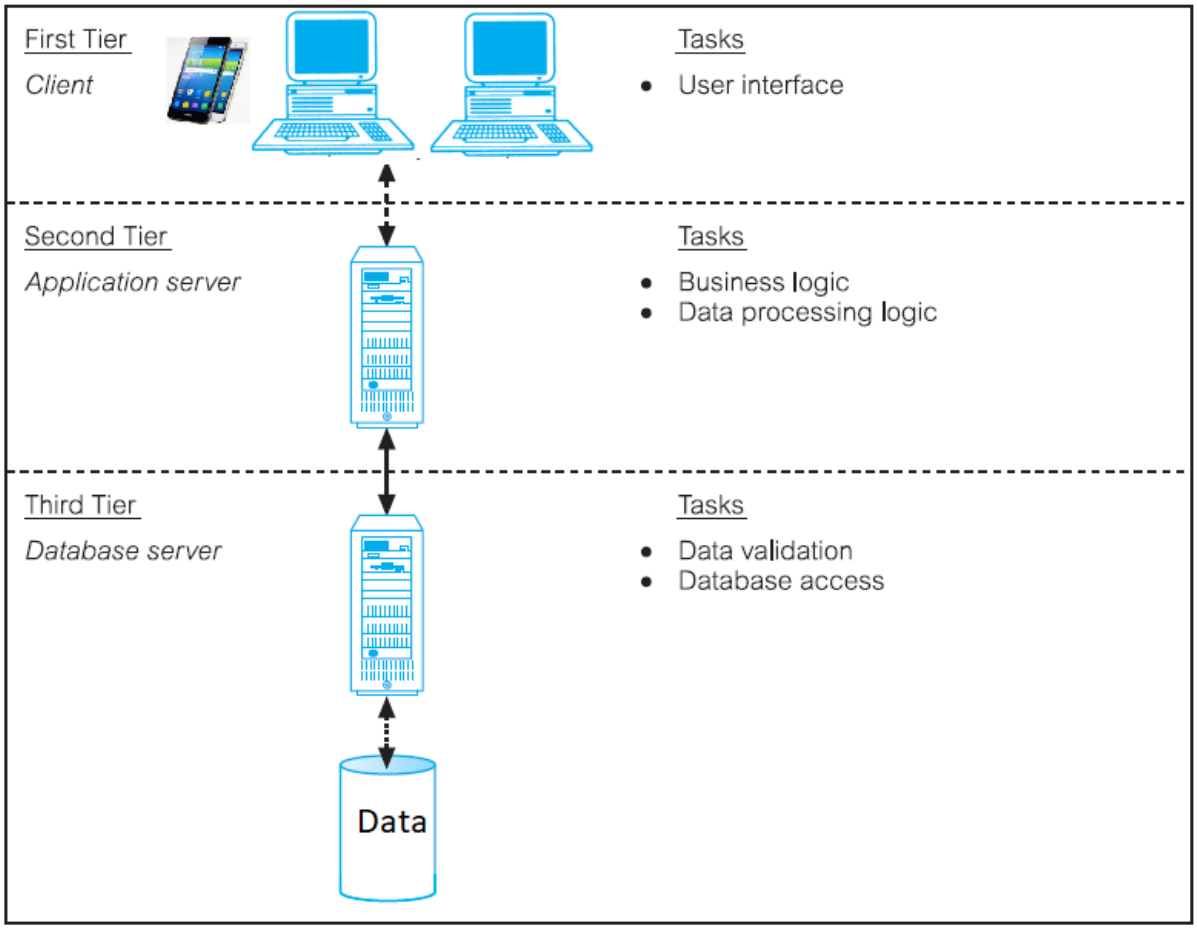
The client (tier 1) is primarily responsible for the presentation of data to the user, and the server (tier 2) is primarily responsible for supplying data services to the client. Typically, the client would run on end-user desktops/mobiles and interact with a centralized database server over a network.



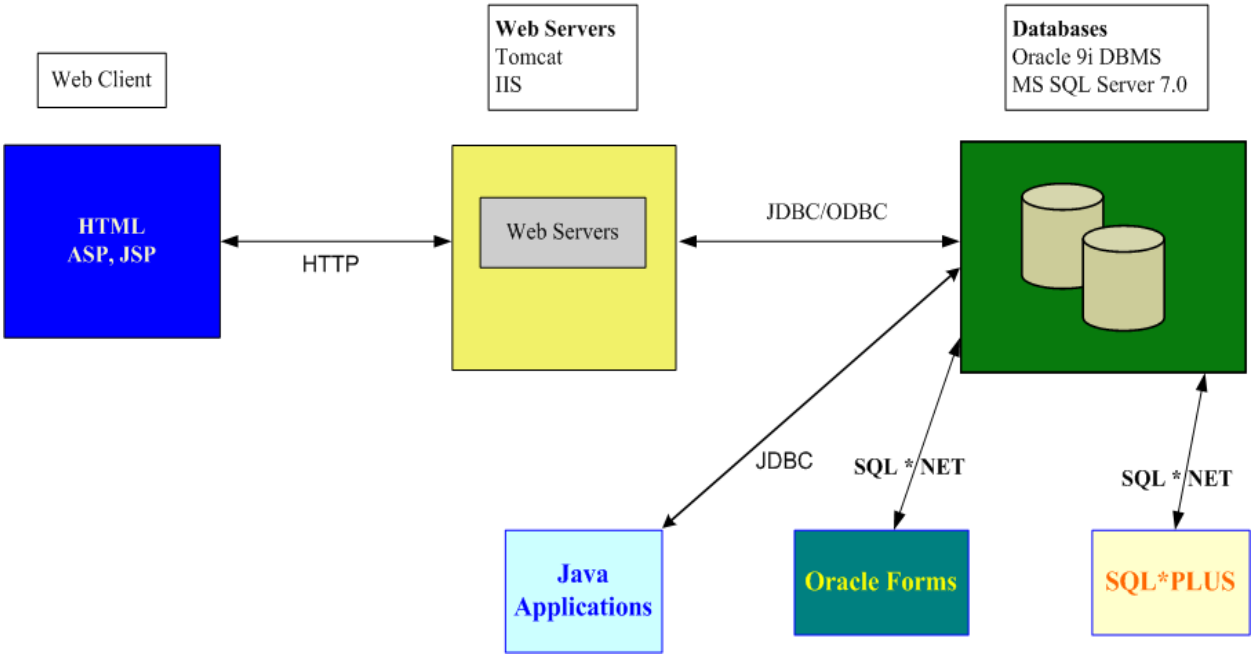
Client-Server Architecture (3-Tier)

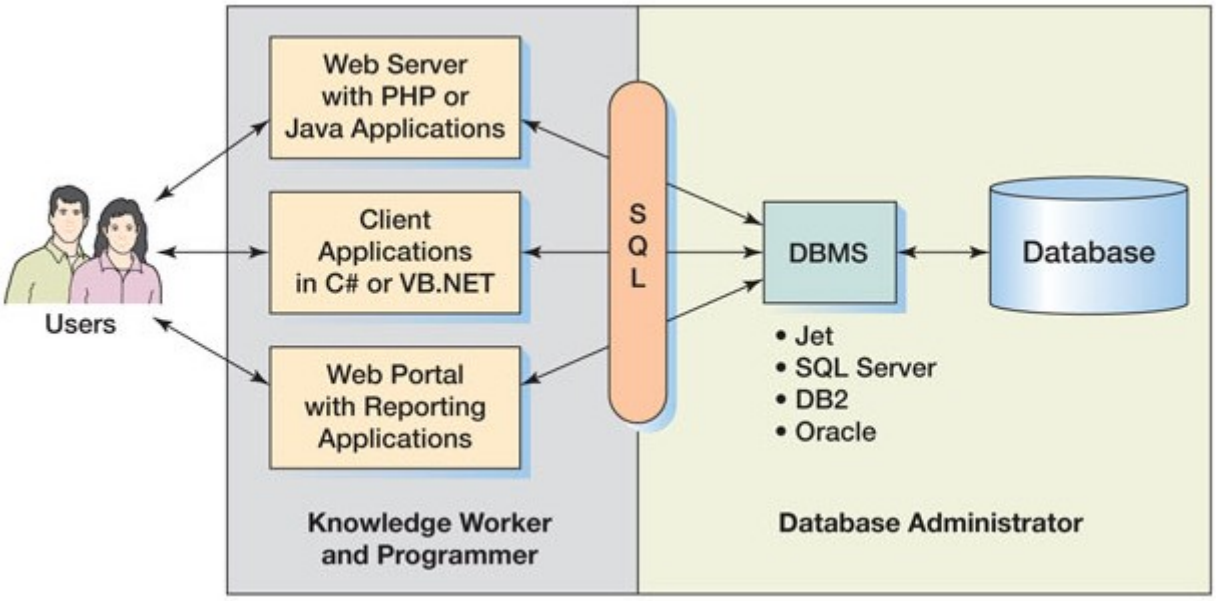
In 2-tier Architecture client's computer required considerable resources to run effectively. This includes disk space, RAM, and CPU power. So a new architecture was proposed with three layers, each potentially running on a different platform:

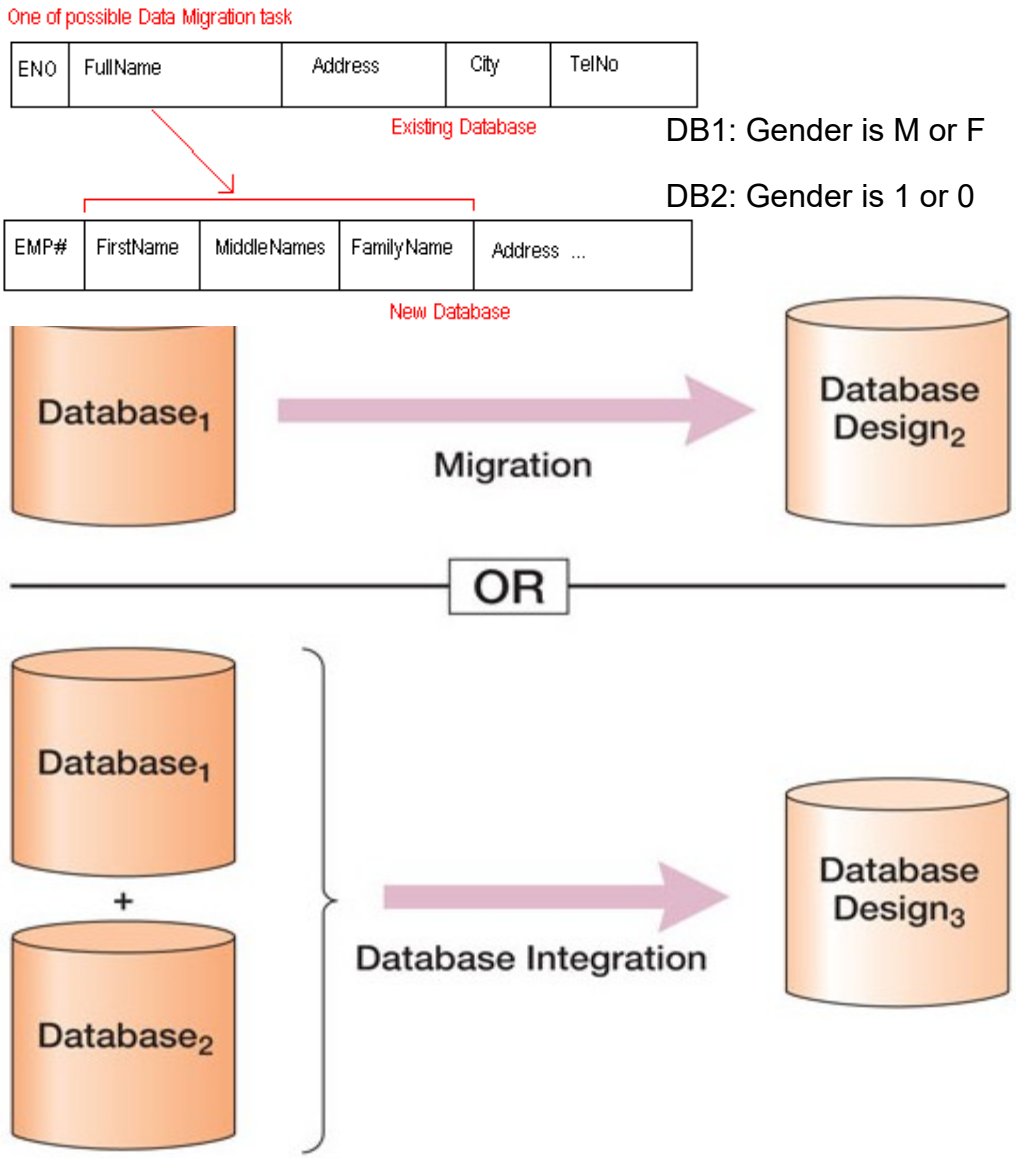
(1) The user interface layer, which runs on the end-user's computer (the client).
(2) The business logic and data processing layer. This middle tier runs on a server and is often called the application server.
(3) A DBMS, which stores the data required by the middle tier. This tier may run on a separate server called the database server.

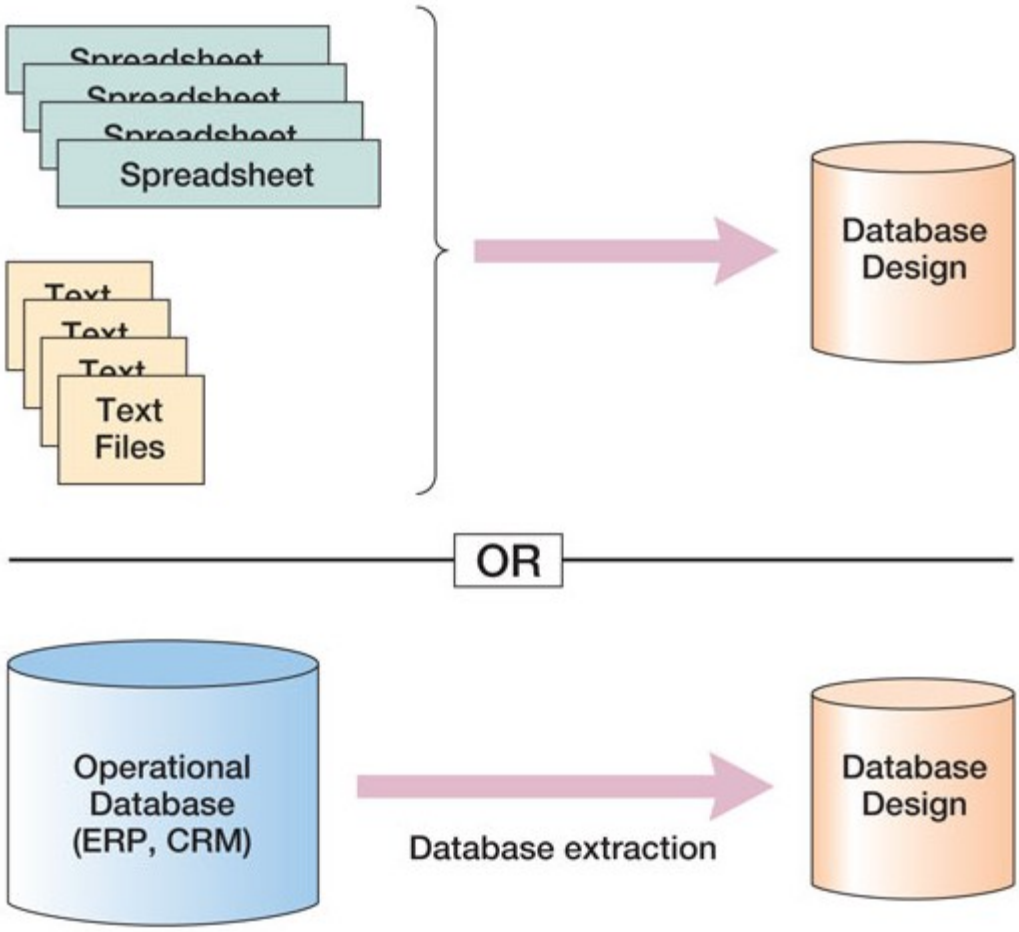


Architecture and the tools used in Database Lab




Web Server with PHP or Java Applications
Client Applications in C# or VB.NET
Web Portal with Reporting Applications
Users
SQL
DBMS
Database
• Jet
• SQL Server
• DB2
• Oracle
Knowledge Worker and Programmer
Database Administrator


One of possible Data Migration task
ENO
FullName
Address
City
TelNo
Existing Database
DB1: Gender is M or F
DB2: Gender is 1 or 0
EMP#
FirstName
MiddleNames
FamilyName
Address ...
New Database
Database1
Migration
Database Design2
OR
Database1
+
Database2
Database Integration
Database Design3



Discussion:

None

Exercises:

None

Evaluation:

Your Lab Work grade will depend *on your* ***active participation, individual efforts in solving Lab Problem and Seriousness during the lab.***