

Database Management System (DBMS)

- Computerized record keeping system
 - Manages database structure and control access to the data stored in the database
 - Software system which allows users to interpret, create, update, arrange, manages and maintains and control access to the database
 - DBMS is the software that interacts with the users' application programs and the database.
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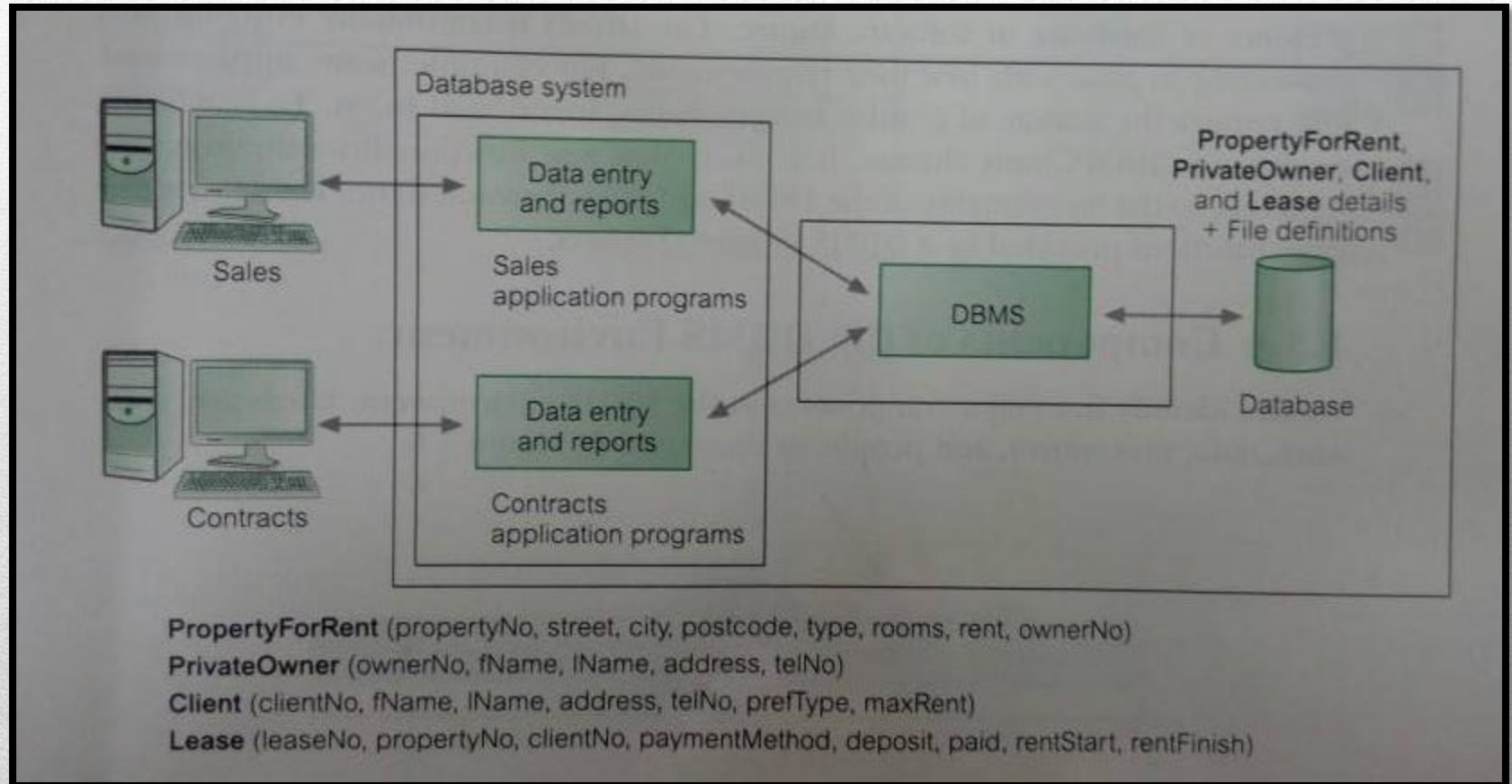
DB: Application Programs

- A computer program that interact with the database by using an appropriate request (SQL statement) to DBMS..
- User interact with the DB through number of **application programs** that are used to create and maintain the DB and to generate information.
- *Example :*

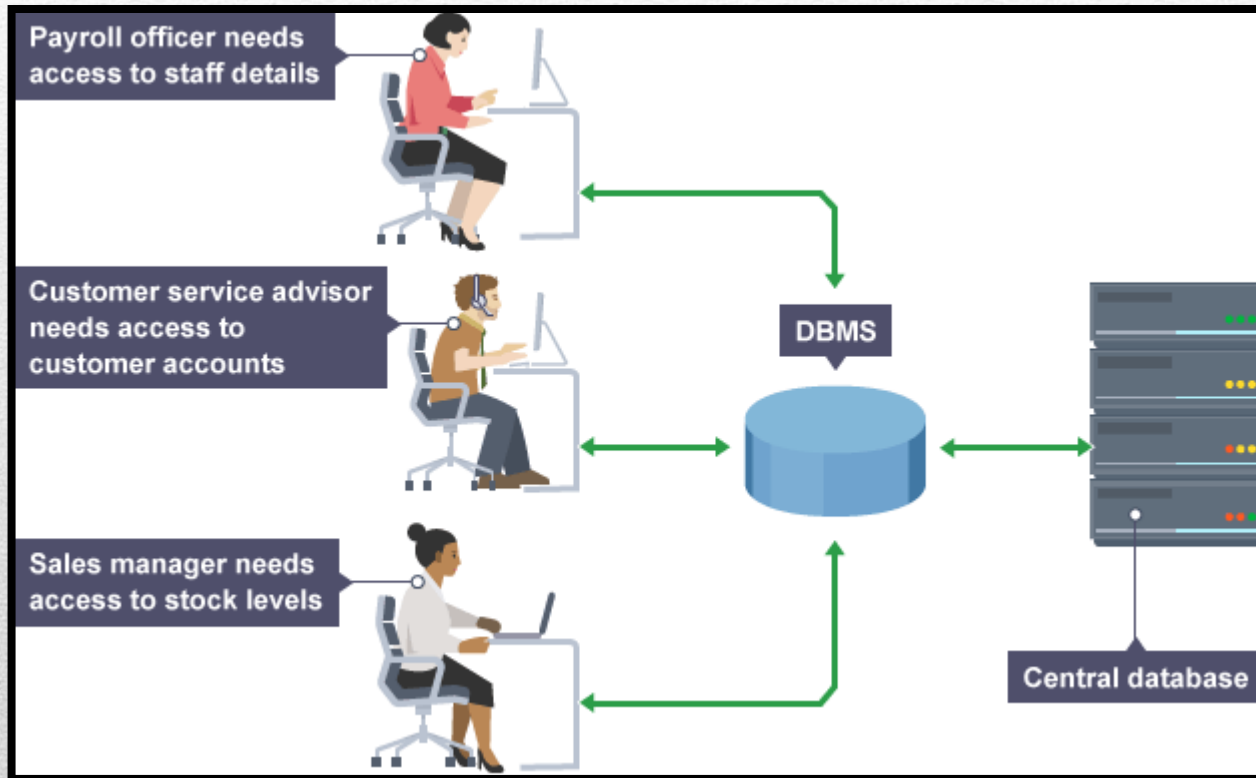
Online Application



Database Management System (DBMS)



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Server DBMS

- a) Oracle
- b) SQL Server
- c) IBM DB2
- d) MySQL, Firebird, PostgreSQL (Significant open source DBMSs)

Desktop DBMS

- a) Microsoft Access
- b) FoxPro, Paradox, Approach, FileMaker Pro

Various Common of DBMS

Disadvantages of Traditional Approach Information Processing

DB management system were developed to handle the following difficulties of typical file-processing system supported by conventional operating systems:

☐ **Data redundancy and Data Inconsistency**

Example :

Multiple file format, duplication of information in different file

acc(name,address,tel,acc_numb,balance)

loan(name,address,tel,loan_number,amount)

Disadvantages of Traditional Approach Information Processing

- ❑ **Difficulty in accessing data**

 - ~ need to write a new program to carry out each new task

- ❑ **Data isolation** ~ multiple file format

- ❑ **Program /Data dependence**

 - ~ addition or deletion of a field requires the modification of all program that are using that file

Disadvantages of Traditional Approach Information Processing

- ☐ Lack of flexibility
 - ☐ Concurrent access anomalies
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- A database management system is important because it manages data efficiently and allows users to perform multiple tasks with ease.
- Use of this system increases efficiency of business operations and reduces overall costs.

IMPORTANCE OF DBMS

- **Desktop Databases**
 - Single user database running on personal computer
- **Server Databases**
 - Multi user database running on a Server.

Categories of DBMS

Desktop Database

Microsoft Access

Fox Pro

FileMaker Pro

Paradox

Lotus

Server Database

Oracle

Microsoft SQL Server

IBM DB2

Open Source :
MySQL, Firebird, PostgreSQL

Categories of DBMS

- Easy Management
 - Simple functionality to modify and maintain the database
- Low Running Cost
 - No need for extra hardware support
 - No need to hire expertise
- Easy to use
 - No advance technical knowledge is needed
 - Programs are normally very intuitive and easy to learn.

Benefits of Desktop Database

- Increase Scalability
 - any element can be upgraded when needed
- Increase Flexibility
 - new technology can be easily integrated into the system
- Increase Accessibility
 - server can be accessed remotely and across multiple platforms

Benefits of Server Database

- Increase performance
 - Different CPU's process application in parallel
 - Easier to tune the server machine since the task is only to perform database processing
- Increase Consistency
 - Centralization - access, resources, and data security are controlled through the server.

Benefits of Server Database

1. Data Model
2. Number of user
3. Number of sites
4. Cost
5. Purpose

Selecting DBMS
