

Database and Data Warehouse

Management Information Systems

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- Management Information Systems
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00. Contents

- 01. Data
- 02. Database
- 02. Data Warehouse

01. Data

- Data
 - = Data are composed of facts and values.
 - Data are presented by alpha, numeric, symbol, and so forth

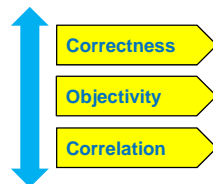
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- Height: 1 m
- Width: 2 m
- Depth: 1 m
- Stuff: wood
- Color: brown



01. Data

- Characteristics of Data

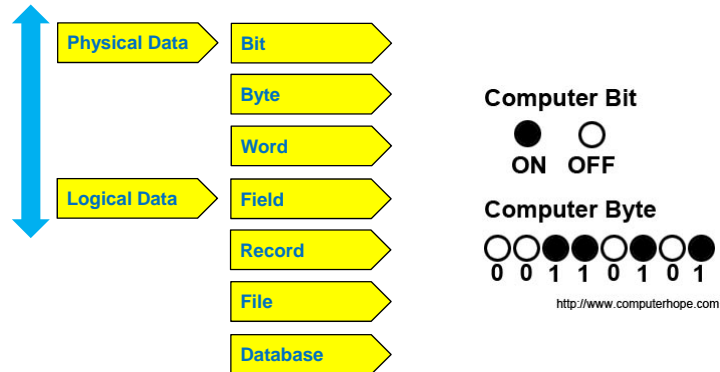
Characteristics of Data



01. Data

- Presentation of Data

Presentation of Data



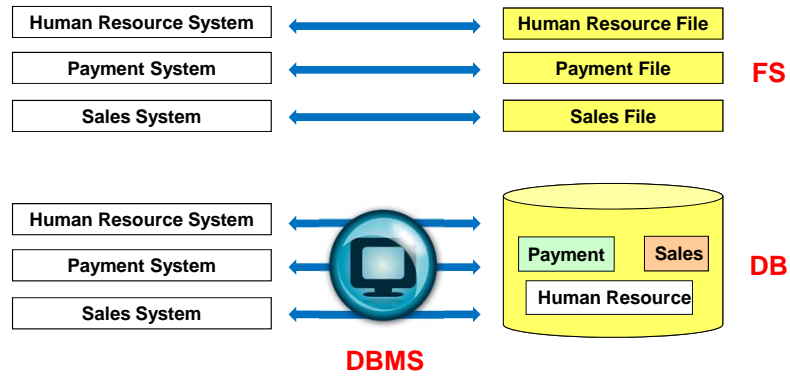
02. Database

- Database (DB)
 - = A very large, integrated collection of data
 - DB models real-world enterprise.
- **Entities** (e.g., students, courses)
- **Relationships** (e.g., Madonna is taking CS564)



02. Database

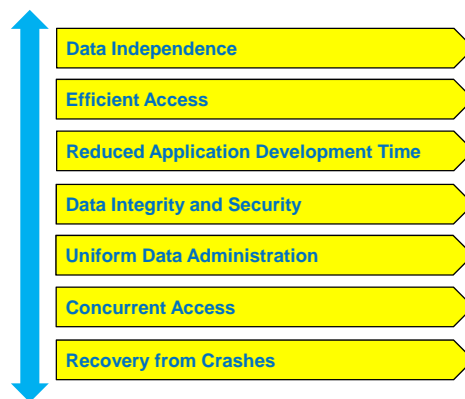
- File Systems (FS) vs. Database (DB)



02. Database

- Characteristics of Database (DB)

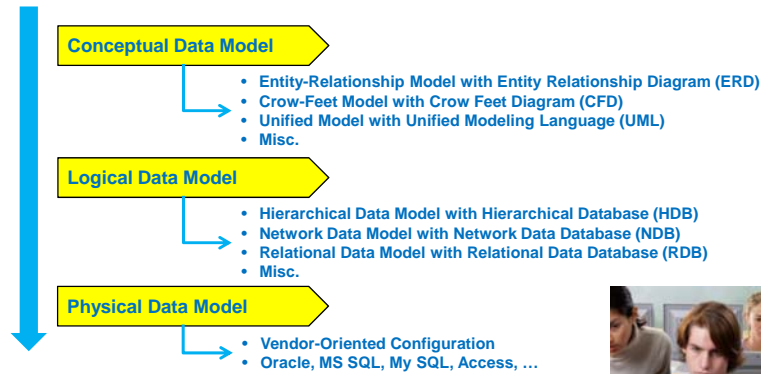
Characteristics of DB



02. Database

- Types of Database (DB)

Types of Database



02. Database

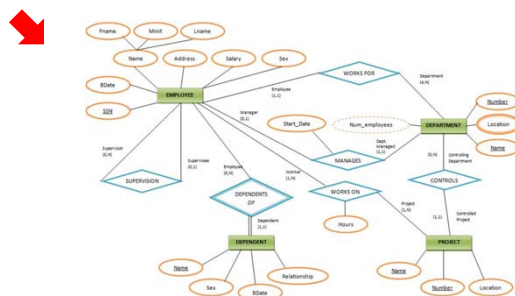
- Examples of Database (DB)

The company is organized into departments. Each department has a unique name, a unique number, and a particular employee who manages the department. Keep track of the start date when that employee began managing the department. A department may have several locations.

A department contains a number of projects, each of which has a unique name, a unique number, and a single location.

Show each employee's name, social security number, address, salary, sex, and birth date. An employee is assigned to one department, but may work on several projects, which are not necessarily controlled by the same department. Keep track of the number of hours per week that an employee works on each project. Also, keep track of the direct supervisor of each employee.

Keep track of the dependency of each employee for insurance purposes. Note each dependent's first name, sex, birth date, and relationship to the employee.



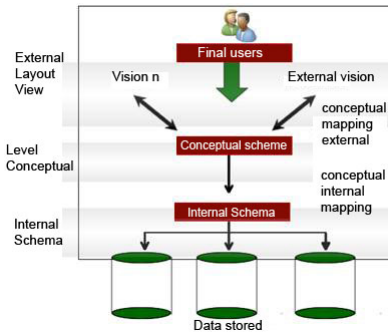
EMPLOYEE_ID	LAST_NAME	FIRST_NAME	EMAIL	PHONE_NUMBER	HIRE_DATE	JOB_ID	DEPARTMENT_ID	LOCATION_ID	SALARY	COMMISSION_PCT
100	DEHAENE	ANDREW	ANDREW@EXAMPLE.COM	515.121.2019	2000-09-08	AD_PRES	10	1700	15000	.15
101	DEHAENE	ANDREW	ANDREW@EXAMPLE.COM	515.121.2019	2000-09-08	AD_VP	10	1700	12000	.10
102	DEHAENE	ANDREW	ANDREW@EXAMPLE.COM	515.121.2019	2000-09-08	AD_ASST	10	1700	9000	.08
103	DEHAENE	ANDREW	ANDREW@EXAMPLE.COM	515.121.2019	2000-09-08	AD_CLERK	10	1700	7000	.06
104	DEHAENE	ANDREW	ANDREW@EXAMPLE.COM	515.121.2019	2000-09-08	AD_REP	10	1700	8000	.07
105	DEHAENE	ANDREW	ANDREW@EXAMPLE.COM	515.121.2019	2000-09-08	AD_REP	10	1700	8000	.07
106	DEHAENE	ANDREW	ANDREW@EXAMPLE.COM	515.121.2019	2000-09-08	AD_REP	10	1700	8000	.07
107	DEHAENE	ANDREW	ANDREW@EXAMPLE.COM	515.121.2019	2000-09-08	AD_REP	10	1700	8000	.07
108	DEHAENE	ANDREW	ANDREW@EXAMPLE.COM	515.121.2019	2000-09-08	AD_REP	10	1700	8000	.07
109	DEHAENE	ANDREW	ANDREW@EXAMPLE.COM	515.121.2019	2000-09-08	AD_REP	10	1700	8000	.07
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112	DEHAENE	ANDREW	ANDREW@EXAMPLE.COM	515.121.2019	2000-09-08	AD_REP	10	1700	8000	.07
113	DEHAENE	ANDREW	ANDREW@EXAMPLE.COM	515.121.2019	2000-09-08	AD_REP	10	1700	8000	.07
114	DEHAENE	ANDREW	ANDREW@EXAMPLE.COM	515.121.2019	2000-09-08	AD_REP	10	1700	8000	.07
115	DEHAENE	ANDREW	ANDREW@EXAMPLE.COM	515.121.2019	2000-09-08	AD_REP	10	1700	8000	.07
116	DEHAENE	ANDREW	ANDREW@EXAMPLE.COM	515.121.2019	2000-09-08	AD_REP	10	1700	8000	.07
117	DEHAENE	ANDREW	ANDREW@EXAMPLE.COM	515.121.2019	2000-09-08	AD_REP	10	1700	8000	.07
118	DEHAENE	ANDREW	ANDREW@EXAMPLE.COM	515.121.2019	2000-09-08	AD_REP	10	1700	8000	.07
119	DEHAENE	ANDREW	ANDREW@EXAMPLE.COM	515.121.2019	2000-09-08	AD_REP	10	1700	8000	.07
120	DEHAENE	ANDREW	ANDREW@EXAMPLE.COM	515.121.2019	2000-09-08	AD_REP	10	1700	8000	.07

<http://www4.ncsu.edu/~jssmith4>

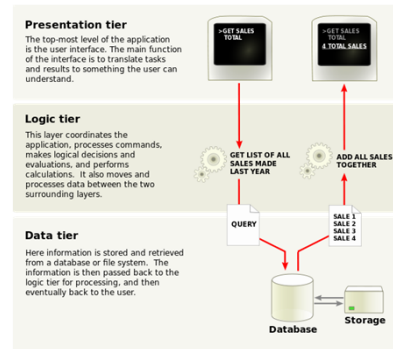
02. Database

- Database (DB) Architecture

Three-Tier DB Architecture



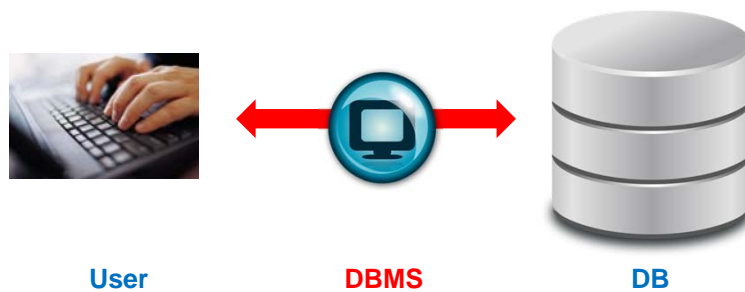
<http://www.mrbool.com>



<http://en.wikipedia.org>

02. Database

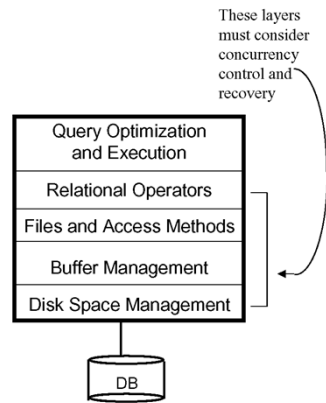
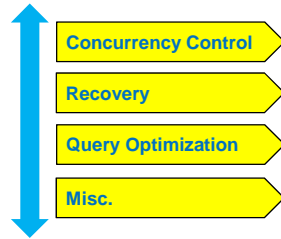
- Database Management Systems (DBMS)
 - = A Software Package designed to Store and Manage Databases



02. Database

- Functions of Database Management Systems (DBMS)

Functions of DBMS



Database Management Systems, R. Ramakrishnan et al., McGraw-Hill