

DATA SECURITY, PRIVACY & INTEGRITY

AUTHORIZATION MANAGEMENT - protects the security and privacy of the data.

- Define each user to the database.
- Assign passwords to each user.
- Define user groups
- Assign Access privileges
- Control physical access
- View Definition
- DBMS usage monitoring

DATA BACKUP & RECOVERY

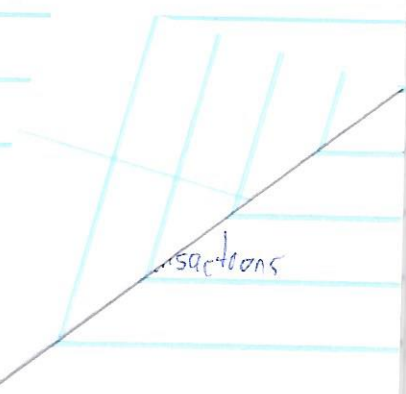
DISASTER MANAGEMENT - includes all of the DBA activities designed to secure data availability following a physical disaster or database integrity failure.

DATA DISTRIBUTION & USE

Data are only useful when they reach the right users in a timely fashion. The DBA is responsible for ensuring that the data are distributed to the right people, at the right time and in the right format.

TECHNICAL ROLE OF THE DBA

- Evaluating, selecting and installing the DBMS & related utilities,
- Designing and implementing databases and applications
- Testing and evaluating databases and applications
- Operating the DBMS, utilities and applications
- Training and supporting users
- Maintain the DBMS, utilities and applications



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## BEST APPROACH TO CONCEPTUAL DESIGN

To use a centralized and top down approach. The designer must keep the design flexible to make sure it can accommodate changes in the future

## 3 LEVELS OF DISTRIBUTION TRANSPARENCY

- ① FRAGMENTATION TRANSPARENCY - Highest level of transparency, The end user/programmer does not need to know that a database is partitioned. Therefore neither fragment names nor fragment locations are specified prior to data access.
- ② LOCATION TRANSPARENCY - The end user/programmer must specify the database fragment names, but does not need to specify where those fragments are located
- ③ LOCAL MAPPING TRANSPARENCY - Exists when the end user or programmer must specify both the fragment names their locations.

BIG DATA - is a complex & large set of structured and unstructured data that are incapable of being stored & processed by current technologies and infrastructures. Divided into various components referred to as Big Data "V's".

First "V" = Volume of data that is available from different sources.

Second "V" = Velocity, referring to the rate at which data changes.

Third "V" = Variety, of data that is collected from different sources.

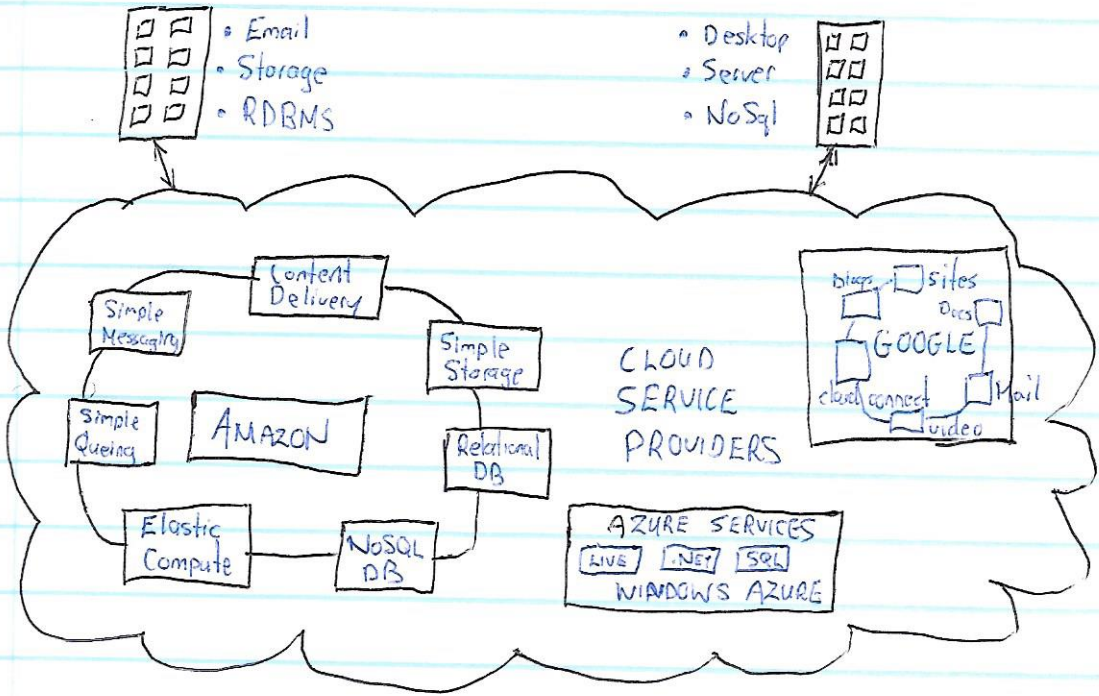
Fourth "V" = Veracity, or trustworthiness of the large set of data.

Fifth "V" = Value, The Big Data could create for organizations such as government, health and others.

## SEMANTIC WEB & ITS RELATION TO DISTRIBUTED DATABASE SYSTEMS

Is an extension of the current Web in which information is well defined better enabling both humans & computers to automatically process and understand the Web. It is related to DDBS because Semantic Web relies on the Web of Data that is distributed across different locations.

CLOUD COMPUTING is a computing model for enabling ubiquitous, convenient, on demand network access to a shared pool of configurable computer resources (eg Networks, servers, storage, applications & services) that can be provisioned quickly & released with minimal management



## CREATING INDEXES

```

CREATE UNIQUE INDEX P.CODE_INDEX ON PRODUCT (P.CODE)
CREATE INDEX P.REORDER_INDEX ON PRODUCT (P.REORDER)
CREATE INDEX P.QOH_INDEX ON PRODUCT (P.QOH)

```

## SCHEDULER

Special DBMS program that establishes the order in which transactions are executed. Satisfies isolation and serialization.