<u>*OVERVIEW*</u>

<u>**BI** (Business Intelligence)</u>

Computer: Computer is an electronic device, which takes input, processed it and gives the accurate result as output.

Hardware: which we can see and touch.

Software: it is a set of programs

Applications are of 2 types.

 1) OLTP (Online Transaction Processing)
 2) OLAP (Online Analytical Processing)

There are some differences are there between OLTP and OLAP.

<u>**OLTP**</u>	<u>**OLAP**</u>
1) Two dimensional model	1) Multi dimensional model
2) Day-to-Day Transactions	2) Historical data tractions also
3) Application oriented	3) Subject oriented
4) Users -> Thousands	4) Users - > Hundreds
5) DB size -> 100MB – 1GB	5) DB size -> 100GB-1TB
6) Redundancy	6) No Redundancy
7) No security	7) Security
8) Not Integrated	8) Integrated.

**Netweavers**: It provides open integrity for SAP and Non SAP.

Integration is of some types

   1) People integration
   2) Information integration -> BI, MDM, KM.
   3) Process integration -> XI
   4) Platform integration
   5) Collaboration integration -> EP

The architecture of Netweavier is **ESA**. Netweaviers also a set of capabilities to provide information/integration.

<u>Layout/steps in SAP BW (DW)</u>:
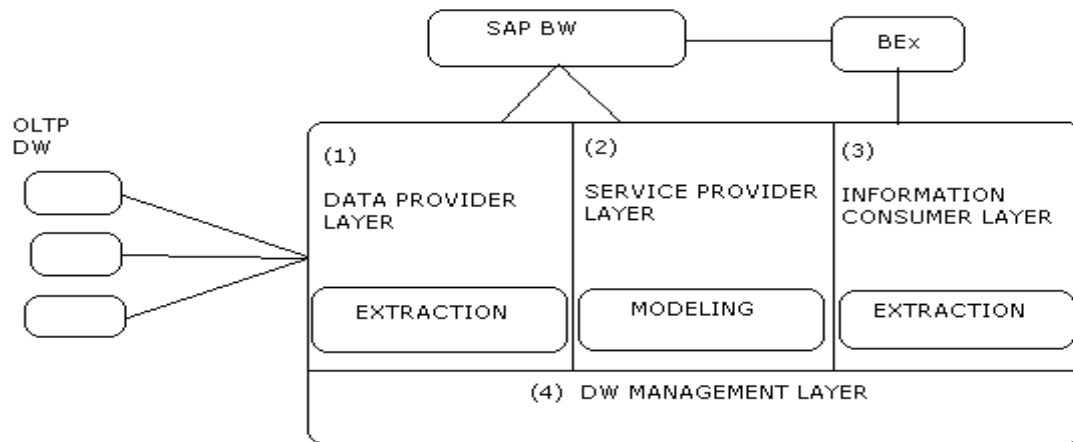
1) **DB** => for designing we can use 2 – dimensional model. Data can be stored permanently in database.

2) Table contains rows and columns.

3) Each column is a field in OLTP.

4) Every table must have a Primary key.

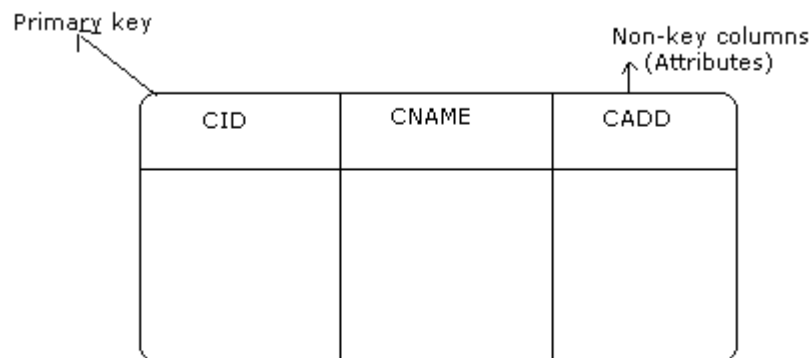5) All non-key columns describe key columns called Attributes.

FIGURE (1)

<u>ER-Model</u> (Entity Relationship model):

Multiple tables' likes with a primary and foreign key relationships these are called as ER Model. In a table one field is Primary key if we use the same field in other table then it act as a

foreign key in that table. If two or more columns of a table together acts as **Composite** primary key.

PID	CID	LOC

FIGURE (2)

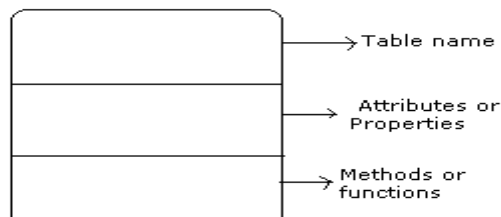   In figure (1) and (2), CID is common. Here in figure (2) it acts as foreign key.

Designing DB:

       Two ways of designing a DB.
1) Objected Oriented
2) Normalization

1) Object Oriented:

- Requirements (i.e. Defining system)
- Identifying the Objects (i.e. Objects)
  Ex: Customer, Material, Product etc
- Entity diagram is as follows

- Attributes or Properties are nothing but properties of a table.
- Front-end people use methods or functions only.

2) Normalization:

- Converts demoralized tables into normalized tables.
- Normalization is nothing but dividing the table into small tables and combine them with the help of primary and foreign key relationship.
- Demoralization contains all table data into one table.
- Reduces redundancy of data.
- Reduce complexity
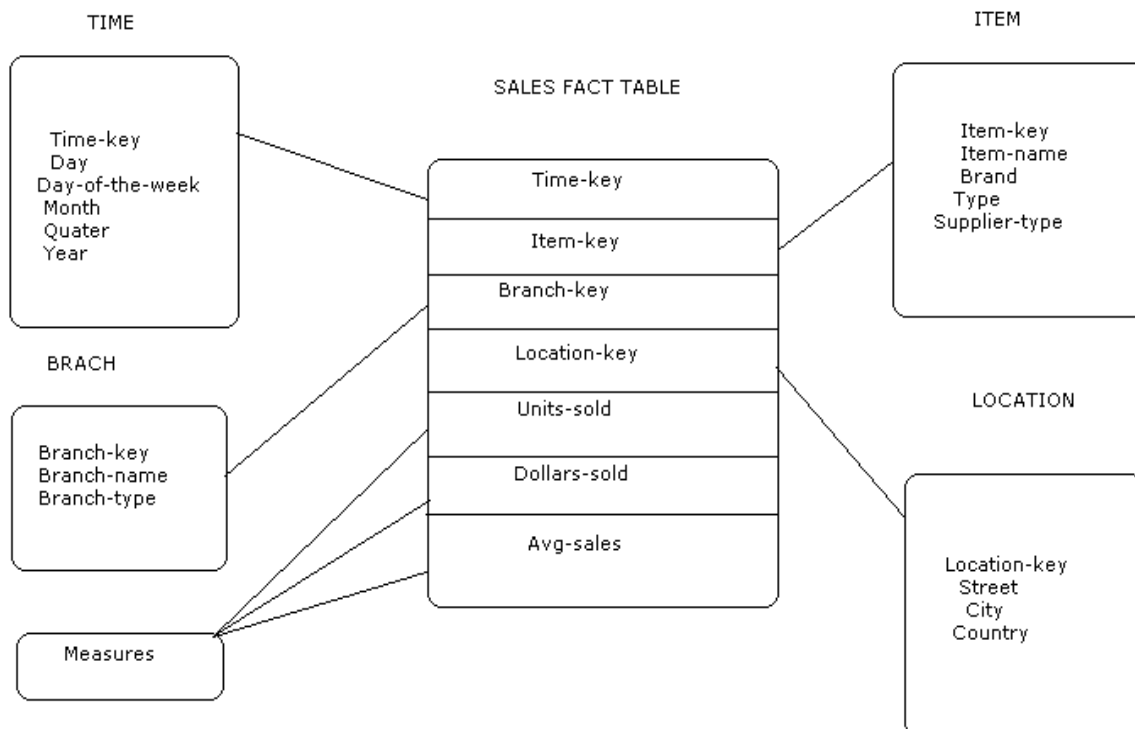- Saves memory.

DB concepts in OLTP:

MDM (Multi Dimensional Model) is used for designing. There are 4 types:
1) Star Schema (traditional schema)
2) Extended Star Schema (BW schema)
3) Snow Flake scheme
4) Hybrid schema

1) Star Schema (traditional schema):

4
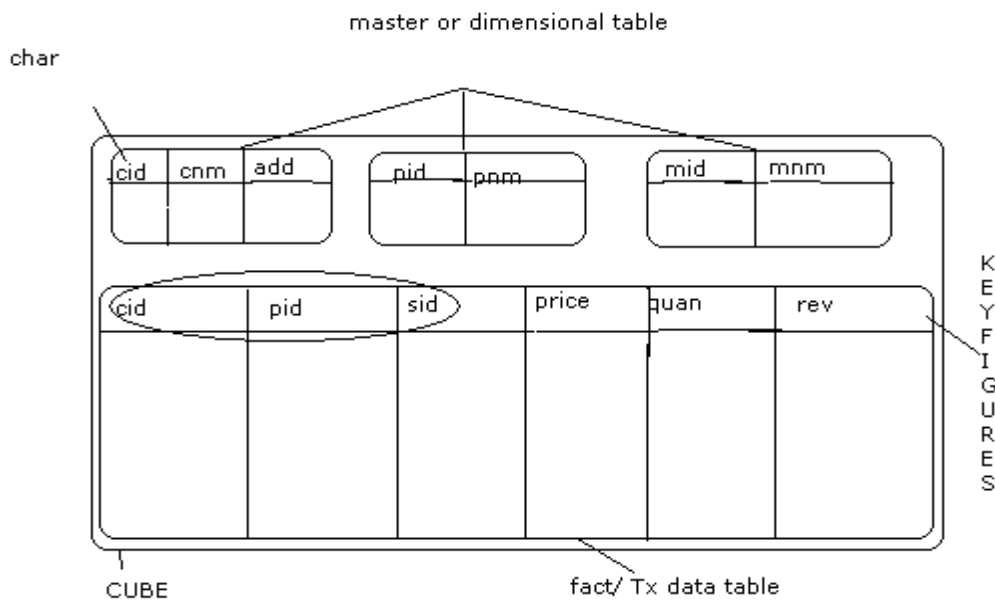
1) Characters indicate on what base you are trying to analyses.
2) Key-figures indicate what you are trying to analyses.
3) Master data is qualifying transaction data. Master data is of 3 types.
    a) Attributes
    b) Hierarchy
    c) Text
4) Master data is also called as Dimensional table.
5) Star schema is completely demoralized form.

TIME

ITEM

SALES FACT TABLE

| Time-key |
| Item-key |
| Branch-key |
| Location-key |
| Units-sold |
| Dollars-sold |
| Avg-sales |

Time-key
Day
Day-of-the-week
Month
Quater
Year

Item-key
Item-name
Brand
Type
Supplier-type

BRACH

Branch-key
Branch-name
Branch-type

LOCATION

Location-key
Street
City
Country

Measures

Limitations:

1) Since master data is with in the fact cube so it is not reusable component.
2) Limited analysis because the maximum number of master data tables is 16.
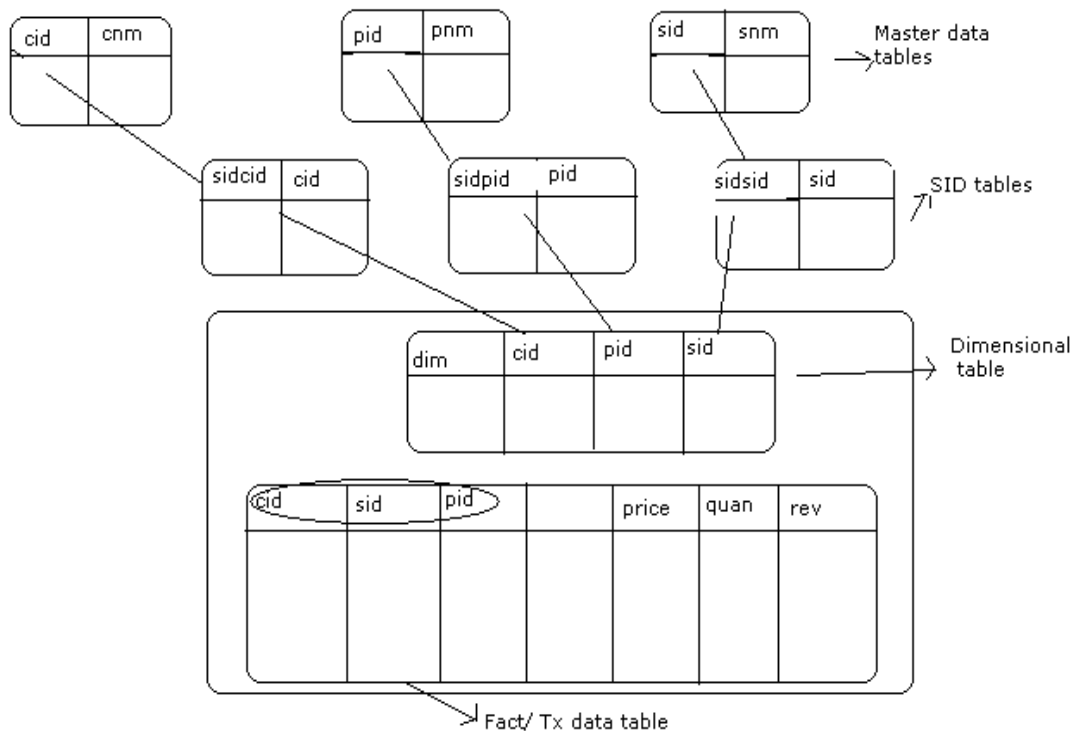3) Performance is low because the execution of alphanumeric data is slower than numeric data.
            If we want to extract the data from the table for example

cid	pid	Rev
c100	p100	8
c100	p200	24

cid	Rev
c100	32

2) <u>Extended star schema:</u>

Extended star schema is nothing but combination of both star schema and SID (sorigated id). Changes from star schema to extended star schema are as follows.

- Cube is called as infocube.
- All master data tables are placed out side the cube so they are reusable components.
- Here master data tables and Dimensional tables are different.

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When we are loading the data into master data table then SID table is generated. Fact table contains Dimensional ids and key figures.

- Maximum of 1 fact table per infocube.
- Any table contains maximum of 255 fields.
- Maximum of 16 Dimensional tables that an infocube contains. 1 –unit, 1 –time, 1- packet, 13 – Dim id
- Minimum of 4 Dimensional tables that an infocube contains. 1 –unit, 1 –time, 1- packet, 1 – Dim id.
- Maximum of 248 char per Dimensional table contains
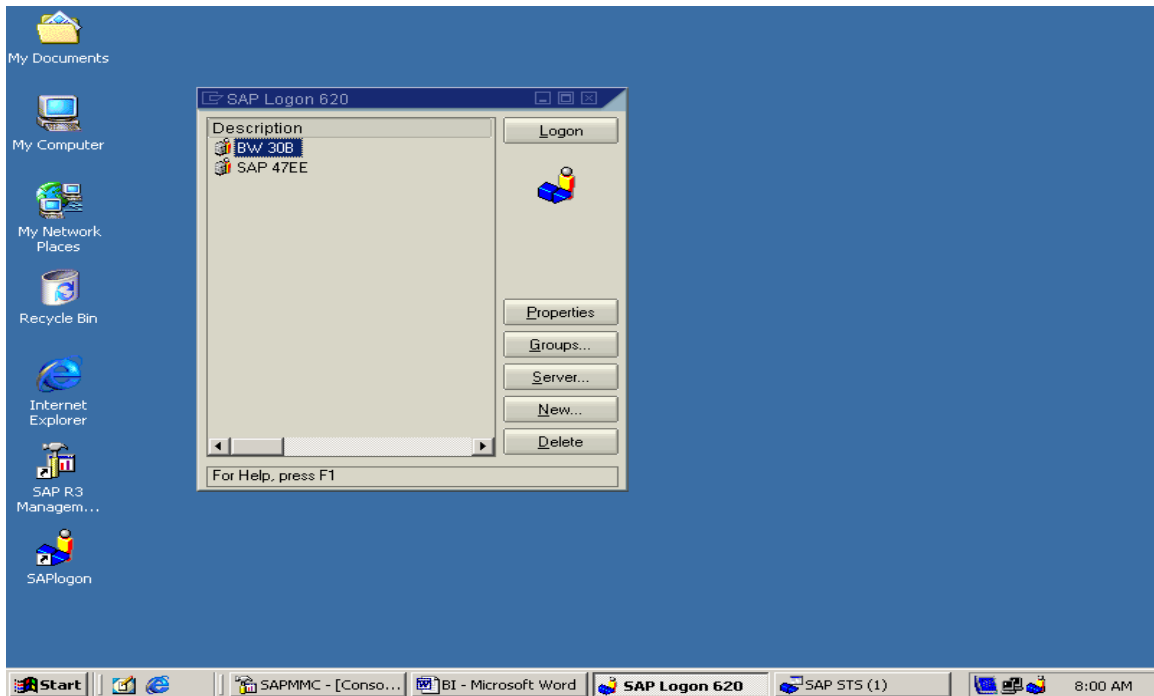- Maximum of 233 key figures per infocube.

Limitations:

(1)   Limiting the no. Of joins in reporting.
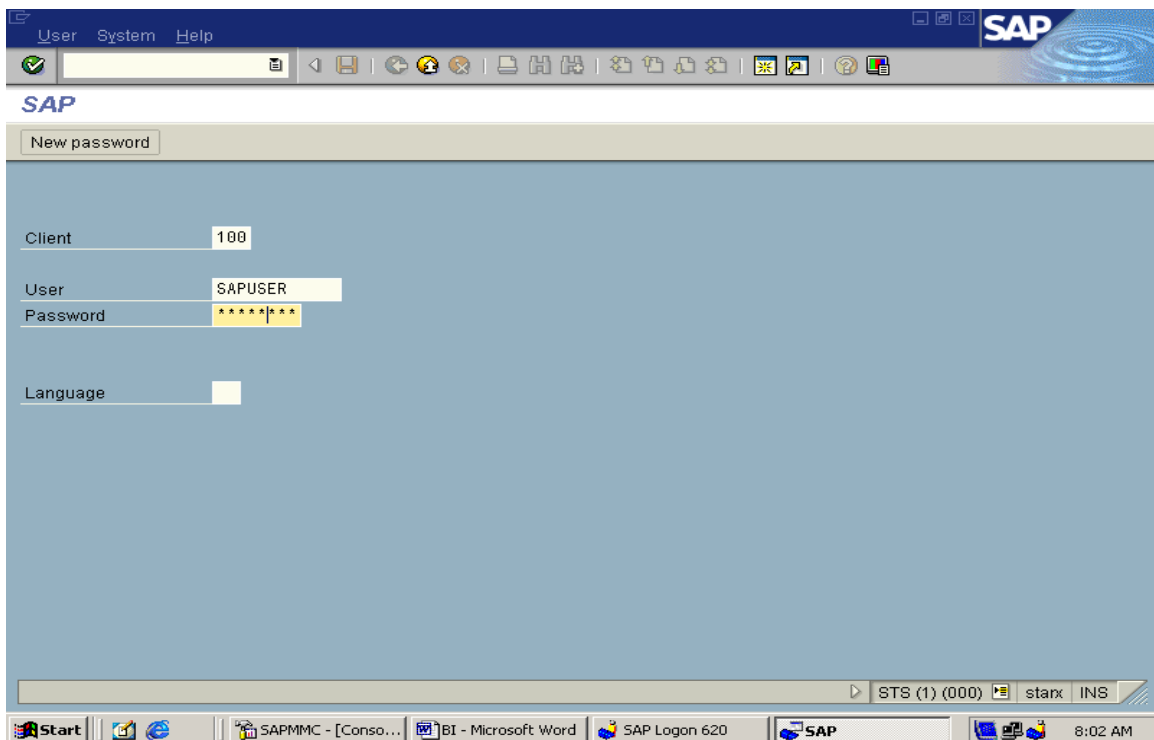(2)   Limiting no. Of fields in Dimensional table.
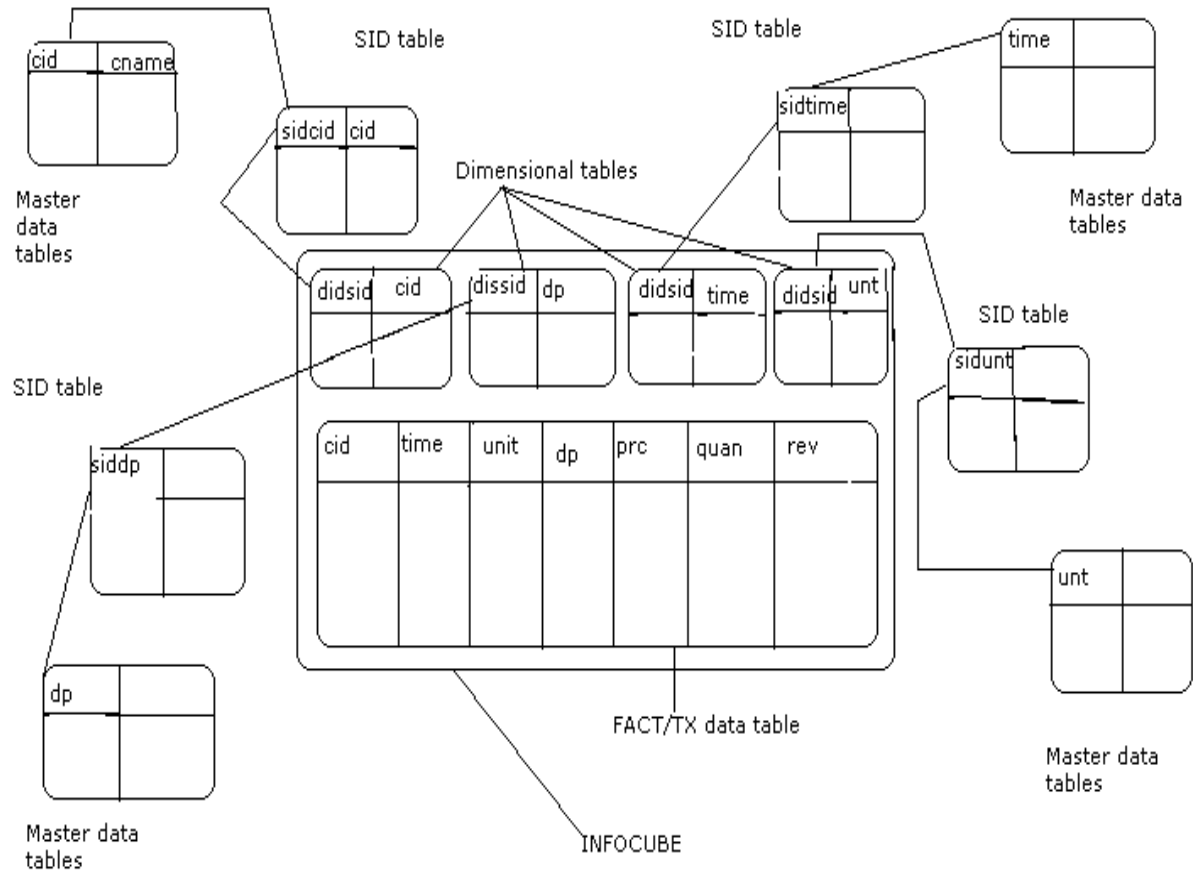
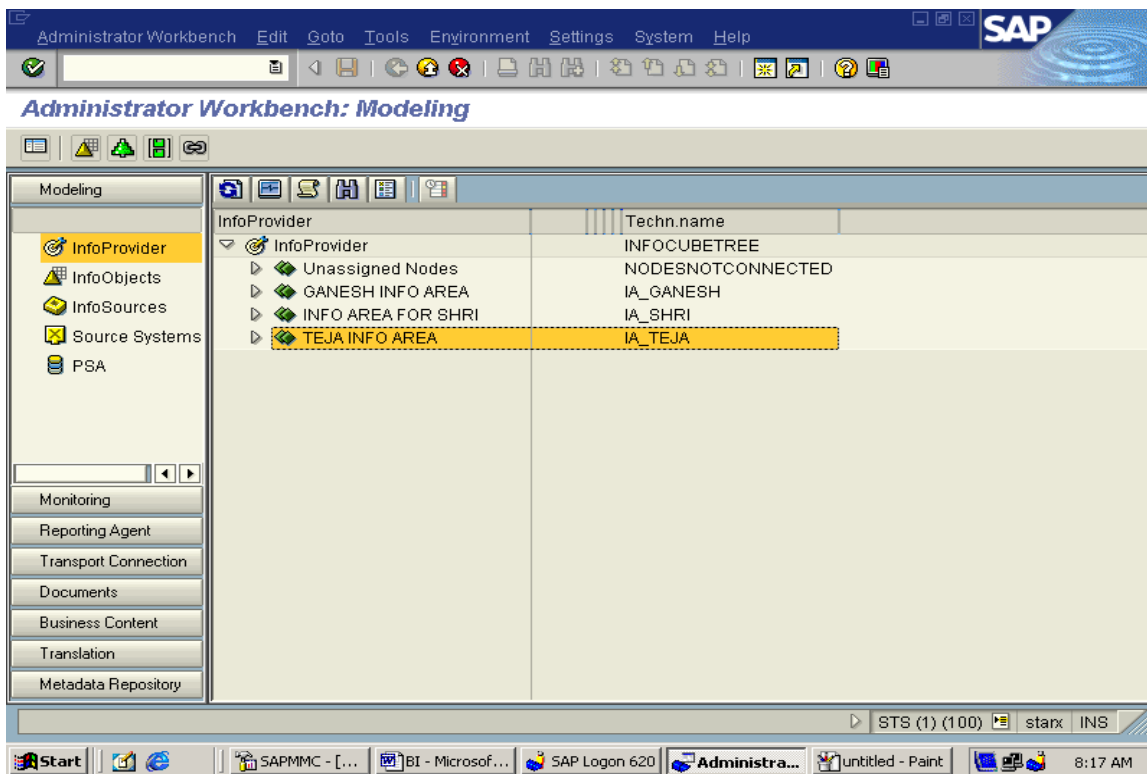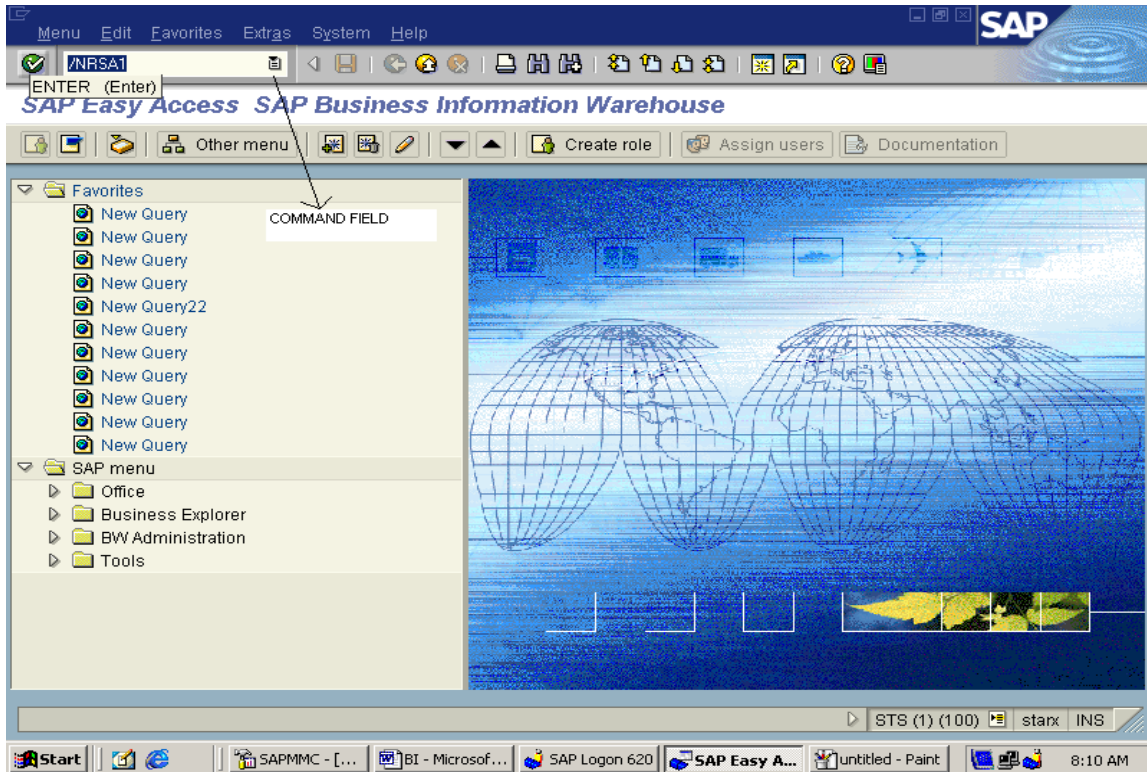Inorder to enter into the BW   Select **BW 3.OB → LOGON**

User -- SAPUSER, **Password** -- INDIA then press enter

8

This is the first screen. Give **RSA1** in the command field and then press enter to login BW.
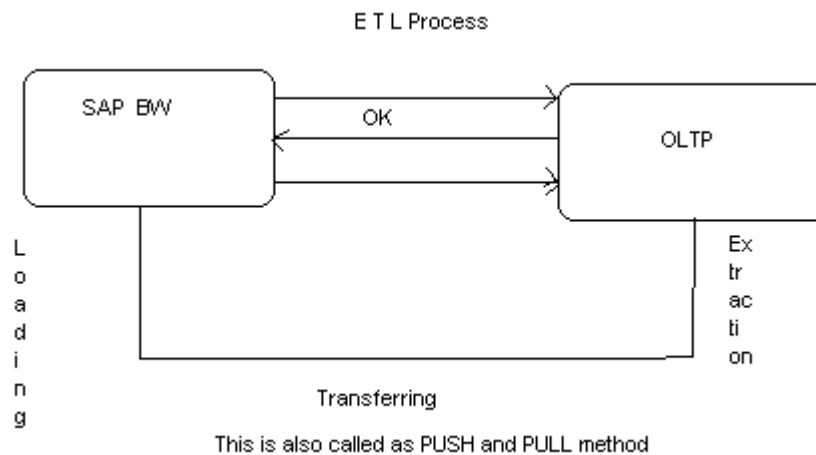
OVERVIEW

This is the first screen for BW. It mainly contains 8 tabs.
1. Modeling
2. Monitoring
3. Reporting Agent
4. Transport Connection
5. Documentation
6. Business Content
7. Translation
8. Metadata Repository

1. Modeling:

- It mainly Contains Creating infoarea, infoobjects, infocube, infosource, infopackage, ODS, Multiprovider, datasource etc.
- Loading of all objects
- A field in OLTP is called as infoobject in BW system.
- In loading   E - Extraction
                  T - Transferring
                  L - Loading

 (This ETL Processing, before it is called as ETTL – Extraction, Transferring, Transporting and Loading. But now this ETL Processing is called as DTP – Data Transferring Process).

E T L Process

This is also called as PUSH and PULL method
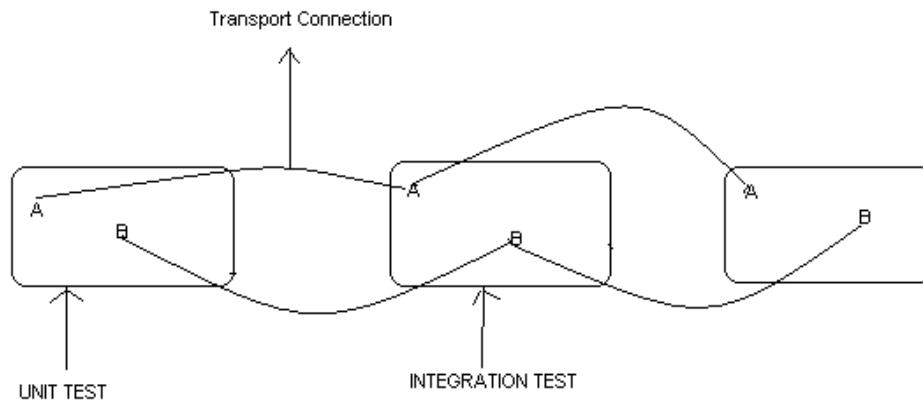
2. Monitoring:

- To see weather the load is failed or not.

3. Reporting Agent:

- It is a tool with which we can schedule and execute reporting functions in the background.

4. Transport Connection:

- By using Transport connection we can move the objects from Development to Quality and then to Production.

5. Documentation:

- It enables you to insert, search and create links for one or more documentations in various formats, versions and languages for SAP BW Objects.

6. Business Content:

- It contains all the objects are delivered by SAPBW. It provides pre-Configured information models based on metadata. It is a predefined analytical application model i.e. part of SAP BW software.

<u>Versions</u>

Until unless you activate the object, we can't use the object.

        N – NEW

        M – Modified

        A – Activate

        D – Delivered.

Installing the business content means that the object converted from delivered version to active version and start using them. We can't modify the business content objects directly. For that first copy that object and modify it.

7. Translation:

- Converting from one language to another language.
- There are 64 languages in SAP.
- If you are translating them, only description will be changed not technical name.

8. Meta data Reporting:

- Data about data is called as Meta date.
- Meta data management maintains it. It is purely in HTML format.

Converted to PDF for [SAP Database](#).