

Media Player

102_dim_date_01_populate_table.xls [Compatibility Mode] - Excel

Abdelwahed Ashraf AA

B7 : =YEAR(A7)*10000+MONTH(A7)*100+DAY(A7)

	A	B	C	D	E	F	G	H	I	J	K	L	M
1	full_date	date_key	calendar_year	calendar_quarter	calendar_month_number	calendar_month_name							
2	1/1/2000	20000101	2000		1	1 January							
3	1/2/2000	20000102	2000		1	1 January							
4	1/3/2000	20000103	2000		1	1 January							
5	1/4/2000	20000104	2000		1	1 January							
6	1/5/2000	20000105	2000		1	1 January							
7	1/6/2000	20000106	2000		1	1 January							
8	1/7/2000	20000107	2000		1	1 January							
9	1/8/2000	20000108	2000		1	1 January							
10	1/9/2000	20000109	2000		1	1 January							
11	1/10/2000	20000110	2000		1	1 January							
12	1/11/2000	20000111	2000		1	1 January							
13	1/12/2000	20000112	2000		1	1 January							
14	1/13/2000	20000113	2000		1	1 January							
15	1/14/2000	20000114	2000		1	1 January							
16	1/15/2000	20000115	2000		1	1 January							
17	1/16/2000	20000116	2000		1	1 January							
18	1/17/2000	20000117	2000		1	1 January							
19	1/18/2000	20000118	2000		1	1 January							
20	1/19/2000	20000119	2000		1	1 January							
21	1/20/2000	20000120	2000		1	1 January							
22	1/21/2000	20000121	2000		1	1 January							

Sheet1

2:55:15 ready 1:04:45

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DWH_Day02-20230826_091726-Meeting Recording Lec44

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32°C صافي غالباً ENG 12:08 AM 7/28/2024

HA Hossam ... M motazm... E esraa.ma... A abdelrah... A alzahraa... E esraam205 A ahmedel... A ali.abdull... L Lec44 A Akmal.el... A ayasheil... MM Mohame... A a.alsaghiir hebaa... A ahmedn... E emanab...

Media Player

102_dim_date_01_populate_table.xls [Compatibility Mode] - Excel

Abdelwahed Ashraf AA

B7 =YEAR(A7)*10000+MONTH(A7)*100+DAY(A7)

	A	B	C	D	E	F	G	H	I	J	K	L	M
1	full_date	date_key	calendar_year	calendar_quarter	calendar_month_number	calendar_month_name							
2	1/1/2000	20000101	2000		1	1 January							
3	1/2/2000	20000102	2000		1	1 January							
4	1/3/2000	20000103	2000		1	1 January							
5	1/4/2000	20000104	2000		1	1 January							
6	1/5/2000	20000105	2000		1	1 January							
7	1/6/2000	20000106	2000		1	1 January							
8	1/7/2000	20000107	2000		1	1 January							
9	1/8/2000	20000108	2000		1	1 January							
10	1/9/2000	20000109	2000		1	1 January							
11	1/10/2000	20000110	2000		1	1 January							
12	1/11/2000	20000111	2000		1	1 January							
13	1/12/2000	20000112	2000		1	1 January							
14	1/13/2000	20000113	2000		1	1 January							
15	1/14/2000	20000114	2000		1	1 January							
16	1/15/2000	20000115	2000		1	1 January							
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18	1/17/2000	20000117	2000		1	1 January							
19	1/18/2000	20000118	2000		1	1 January							
20	1/19/2000	20000119	2000		1	1 January							
21	1/20/2000	20000120	2000		1	1 January							
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Sheet1

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Accumulated Snapshot Fact Table

● Accumulated Snapshot Use Cases.

- It also uses to measure the process performance life-cycle.
 - Order life-cycle
 - Hiring process.

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Accumulated Snapshot Fact Table

61 ★

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63 ★

64 ★

65 ★

66 ★

67 ★

68 ★

69 ★

70 ★

71 ★

72 ★

Click to add notes

- Accumulated Snapshot Use Cases.
 - It also uses to measure the process performance life-cycle.
 - Order life-cycle
 - Hiring process.

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Fact tables types comparison.

Feature	Transaction	Periodic	Accumulating
Grain	1 row/transaction	1 row/time-period	1 row/entire event stages
Date Dimension	Lowest granularity	End-of-period granularity	Multiple date
Facts	Transaction activities	Periodic activities	Defined lifetime activities
Size	Largest	Medium	Smallest
Update	No	No	Yes, after stage finished

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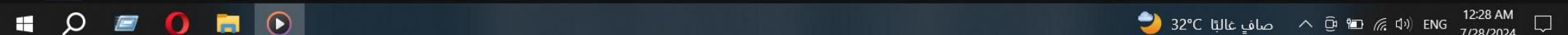
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Fact tables types comparison.

Feature	Transaction	Periodic	Accumulating
Grain	1 row/transaction	1 row/time-period	1 row/entire event stages
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Update	No	No	Yes, after stage finished

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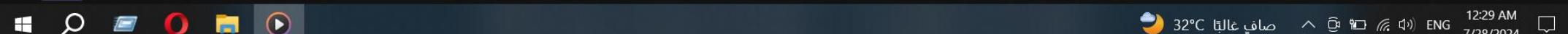
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Feature	Transaction	Periodic	Accumulating
Grain	1 row/transaction	1 row/time-period	1 row/entire event stages
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Facts	Transaction activities	Periodic activities	Defined lifetime activities
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صافٍ غالباً

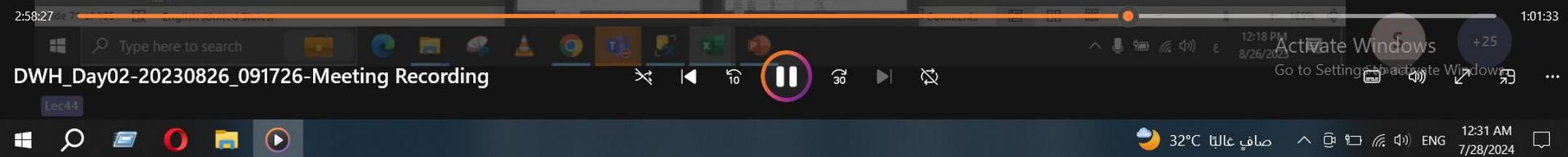
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Fact tables types comparison.

Feature	Transaction	Periodic	Accumulating
Grain	1 row/transaction	1 row/time-period	1 row/entire event stages
Date Dimension	Lowest granularity	End-of-period granularity	Multiple date
Facts	Transaction activities	Periodic activities	Defined lifetime activities
Size	Largest	Medium	Smallest
Update	No	No	Yes, after stage finished

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Examples.xlsx - Excel

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Hossam ... HA

motazm... M

esraa.ma... E

abdelrah... A

alzahraa... A

esraam205 E

ahmedel... A

ali.abdull... A

Lec44 L

Akmal.el... A

ayasheil... A

Mohame... MM

a.alsaghiir A

hebaa... H

ahmedn... A

emanab... E

Periodic Snapshot Fact Table

Accumulating Fact Table

Transaction_Fact_Table

OLTP

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7/28/2024

Lot Receipt Number	Date Received Key	Product Key	Quantity Received	Date Inspected Key	Receipt to Inspected Lag	Date Bin placement Key	Receipt to Bin placement Lag
101	20130101	1	100	20130103	2	Null	Null
Fact Row Updated when Lot placed In Bin							
Lot Receipt Number	Date Received Key	Product Key	Quantity Received	Date Inspected Key	Receipt to Inspected Lag	Date Bin placement Key	Receipt to Bin placement Lag
101	20130101	1	100	20130103	2	20130104	3

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Examples.xlsx - Excel

Abdelwahed Ashraf AA

Font: Calibri 18pt

Number: General

Styles: Conditional Formatting, Format as Table, Cell Styles

Cells: Insert, Delete, Format

Editing: AutoSum, Fill, Clear, Sort & Filter, Find & Select

Clipboard: Paste, Cut, Copy, Undo, Redo

Home tab selected

Table structure:

Lot Receipt Number	Date Received Key	Product Key	Quantity Received	Date Inspected Key	Receipt to Inspected Lag	Date Bin placement Key	Receipt to Bin placement Lag
101	20130101	1	100	20130103	2	Null	Null
Fact Row Updated when Lot Inspected							
Fact Row Updated when Lot placed In Bin							
101	20130101	1	100	20130103	+ (highlighted)	20130104	3

Accumulating Fact Table selected

Periodic Snapshot Fact Table, Transaction_Fact_Table, OLTP, Natural...

Timeline: 3:01:30 05:30 05:58 06:30

Media Player controls: Back, Forward, Stop, Play/Pause (highlighted), Volume, Mute, Full Screen

System tray icons: Search, Task View, File Explorer, Edge, Google Chrome, Power, Volume, Network, Battery, Date/Time (12:20 PM, 8/26/2023), Activation status (Activate Windows, +25, Go to Settings, Deactivate Windows)

System status bar: 32°C, صافي غالباً ENG 12:32 AM 7/28/2024

Participants (Icons and names):

- Hossam ... HA
- motazm... M
- esraa.ma... E
- abdelrah... A
- alzahraa... A
- esraam205 E
- ahmedel... A
- ali.abdull... A
- Lec44 L
- Akmal.el... A
- ayasheil... A
- Mohame... MM
- a.alsaghiir A
- hebaa... H
- ahmedn... A
- emanab... E

Fact tables types comparison.

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Grain	1 row/transaction	1 row/time-period	1 row/entire event stages
Date Dimension	Lowest granularity	End-of-period granularity	Multiple date
Facts	Transaction activities	Periodic activities	Defined lifetime activities
Size	Largest	Medium	Smallest
Update	No	No	Yes, after stage finished

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Fact types

- Each fact table includes facts and it has different types:
 - Additive facts.
 - Semi-additive facts.
 - Non-additive facts.
 - Derived facts.
 - Textual facts.
 - Factless fact.

The numeric measures in a fact table fall into three categories.

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Additive facts

- It is the most flexible and useful facts.
- Its measures can be summed across any of the dimensions associated with the fact table.

SalesFact

```
graph TD; SalesFact --> Date_FK; SalesFact --> Store_FK; SalesFact --> Product_FK; SalesFact --> Sales_Amount[Sales Amount(agg)]
```

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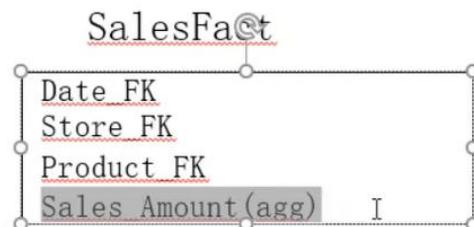
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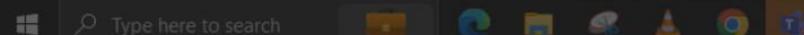
Abdelwahed Ashraf AA

HA
Hossam ...
M
motazm...

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Semi-additive facts

- It can be added across some dimensions but not all also known as (partially-additive).

account_details

Date
Account
Current_Balance
Profit_Margin

- what's the total current balance for all accounts in the bank?
- What's the current balances for a given account for each day of the month does not give us any useful information?

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Semi-additive facts

- It can be added across some dimensions but not all also known as (partially-additive).

account details

```
graph TD; account[account details] --- Date_fk; account --- Account_fk; account --- Current_Balance; account --- Profit_Margin;
```

- what's the total current balance for all accounts in the bank?
- What's the current balances for a given account for each day of the month does not give us any useful information?

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Non-additive facts

- It can't be added for any of the dimensions.
- Non-additive facts are usually the result of ratios (percentage) or other mathematical calculations.
- Profit Margin** is an example non-additive.

account details

Date_fk
Account_fk
Current_Balance
Profit_Margin

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- Profit Margin** is an example non-additive.

account details

Date_fk
Account_fk
Current_Balance
Profit_Margin

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Derived facts

- Derived facts are created by performing a mathematical calculation on a number of other facts, and are sometimes referred to as calculated facts.
- Derived facts may or may not be stored inside the fact table.

Total_sales = Qty_Sold * (Unit_price - Discount)

Order Details

```
graph TD; Order_id --- Item_id --- Order_date --- Qty_Sold --- Total_sales
```

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The screenshot shows a Microsoft PowerPoint slide titled "Derived facts". The slide content includes a bulleted list and a diagram of a fact table named "Order Details". The table has columns: Order_id, Item_id, Order_date, Qty_Sold, and Total_sales. The "Total_sales" column is highlighted with a red border and has a formula bar above it showing the formula $=Qty_Sold * (Unit_price - Discount)$. The slide is part of a presentation titled "DWH Lecture - Day02.pptx". The PowerPoint interface shows a ribbon with tabs like File, Home, Insert, Design, etc., and a sidebar with a list of slides. The taskbar at the bottom shows the meeting recording name "DWH_Day02-20230826_091726-Meeting Recording" and various system icons.

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- Derived facts may or may not be stored inside the fact table.

Total_sales = Qty_Sold * (Unit_price - Discount)

Order Details

Order_id	Item_id	Order_date	Qty_Sold	Unit_price	Discount	Total_sales
----------	---------	------------	----------	------------	----------	-------------

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HA Hossam ... M motazm... E esraa.ma... A abdelrah... A alzahraa... E esraam205 A ahmedel... A ali.abdull... L Lec44 A Akmal.el... A ayasheil... MM Mohame... A a.alsaghiir MA Mostafa ... A ahmedn... H Hesham...

```
graph TD; Order_Details[Order Details] --- Order_id[Order_id]; Order_Details --- Item_id[Item_id]; Order_Details --- Order_date[Order_date]; Order_Details --- Qty_Sold[Qty_Sold]; Order_Details --- Unit_price[Unit_price]; Order_Details --- Discount[Discount]; Order_Details --- Total_sales[Total_sales]
```

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- Derived facts may or may not be stored inside the fact table.
- Total_sales = Qty_Sold * (Unit_price - Discount)**

Order Details

Order_id	Item_id	Order_date	Qty_Sold	Unit_price	Discount	Total_sales
----------	---------	------------	----------	------------	----------	-------------

Click to add notes

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HA Hossam ... M motazm... E esraa.ma... A abdelrah... A alzahraa... E esraam205 A ahmedel... A ali.abdull... L Lec44 A Akmal.el... A ayasheil... MM Mohame... A a.alsaghiir MA Mostafa ... A ahmedn... H Hesham...

```
graph TD; Order[Order Details] --- Order_id[Order_id]; Order --- Item_id[Item_id]; Order --- Order_date[Order_date]; Order --- Qty_Sold[Qty_Sold]; Order --- Unit_price[Unit_price]; Order --- Discount[Discount]; Order --- Total_sales[Total_sales]
```

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Derived facts

- Derived facts are created by performing a mathematical calculation on a number of other facts, and are sometimes referred to as calculated facts.
- Derived facts may or may not be stored inside the fact table.
- Total_sales = Qty_Sold * (Unit_price - Discount)**

Order Details

Order_id	Item_id	Order_date	Qty_Sold	Unit_price	Discount	Total_sales
----------	---------	------------	----------	------------	----------	-------------

Click to add notes

3:14:22 de 0:45:38

Type here to search

DWH_Day02-20230826_091726-Meeting Recording Lec44

Activate Windows 12:31 PM 8/26/2023 +23 Go to Settings & activate Windows

32°C صافي غالباً ENG 12:44 AM 7/28/2024

HA Hossam ... M motazm... E esraa.ma... A abdelrah... A alzahraa... E esraam205 A ahmedel... A ali.abdull... L Lec44 A Akmal.el... A ayasheil... MM Mohame... A a.alsaghiir MA Mostafa... A ahmedn... H Hesham...

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Abdelwahed Ashraf AA

71 ★ 72 ★ 73 ★ 74 ★ 75 ★ 76 ★ 77 ★ 78 ★ 79 ★ 80 ★ 81 ★ 82 ★

Textual facts

- A textual fact consists of one or more characters such as flags and indicators.
- **It should be avoided in the fact table.**

Click to add notes

3:14:26 de 0:45:34

Type here to search

DWH_Day02-20230826_091726-Meeting Recording Lec44

Activate Windows 12:32 PM 8/26/2023 +23 Go to Settings | activate Windows

32°C صافي غالباً ENG 12:44 AM 7/28/2024

HA Hossam ... M motazm... E esraa.ma... A abdelrah... A alzahraa... E esraam205 A ahmedel... A ali.abdull... L Lec44 A Akmal.el... A ayasheai... MM Mohame... A a.alsaghiir MA Mostafa... A ahmedn... E emanab...

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Textual facts

- A textual fact consists of one or more characters such as flags and indicators.
- **It should be avoided in the fact table.**

Click to add notes

3:14:54 de 7:00:00 0:45:06

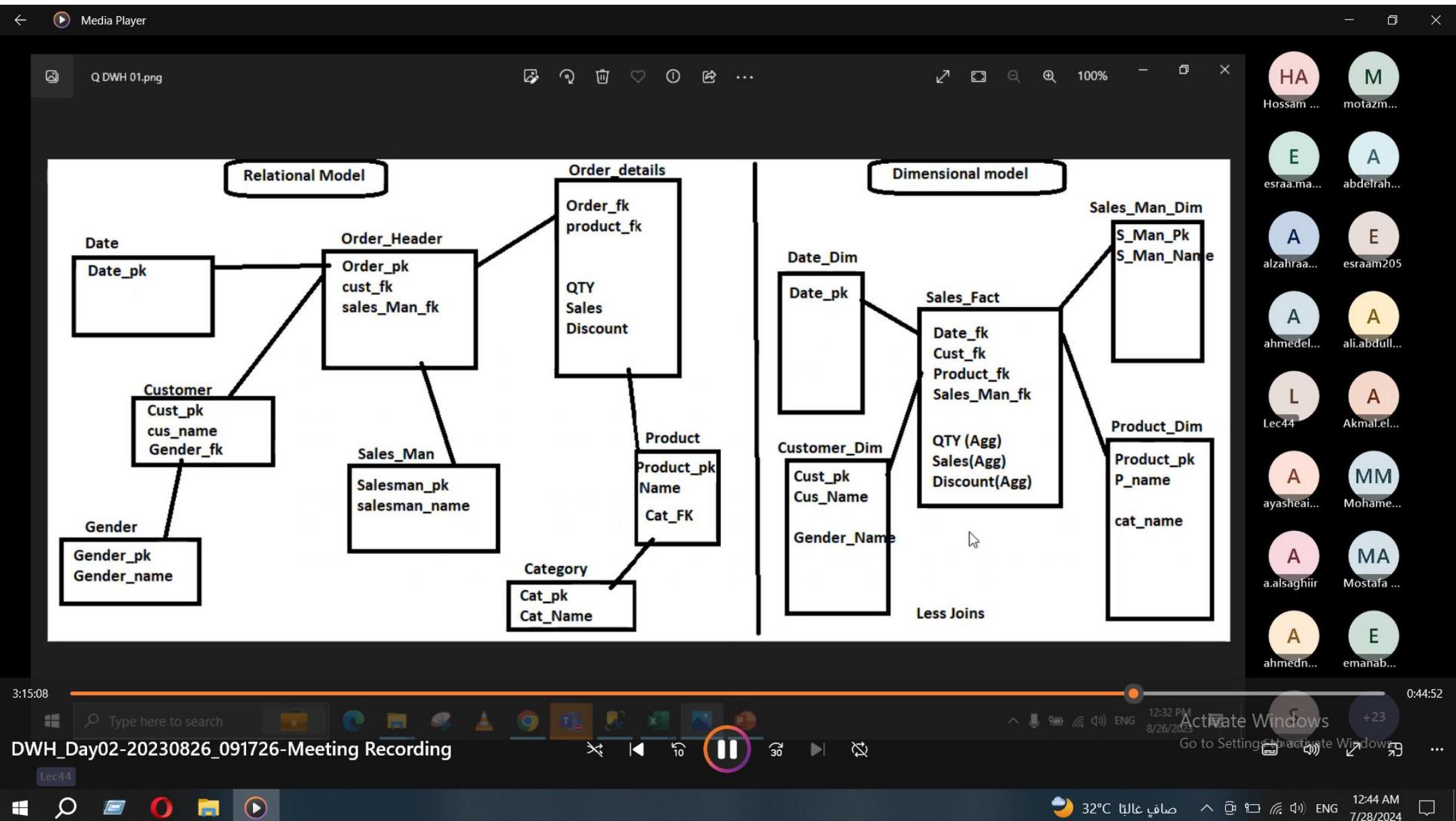
Type here to search

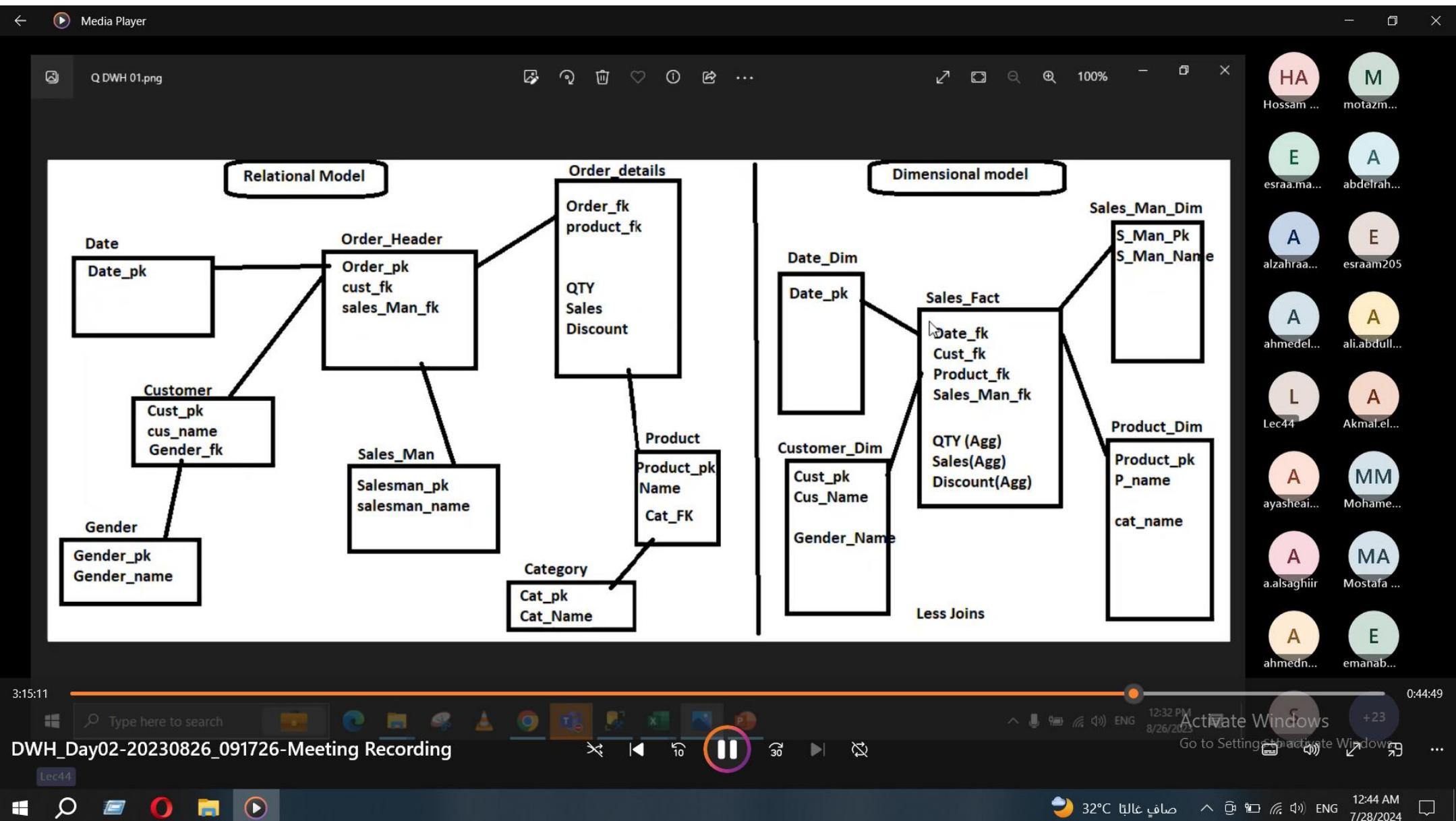
DWH_Day02-20230826_091726-Meeting Recording Lec44

Activate Windows 12:32 PM 8/26/2023 +23 Go to Settings & activate Windows

32°C صافي غالباً ENG 12:44 AM 7/28/2024

HA Hossam ... M motazm... E esraa.ma... A abdelrah... A alzahraa... E esraam205 A ahmedel... A ali.abdull... L Lec44 A Akmal.el... A ayasheai... MM Mohame... A a.alsaghiir MA Mostafa... A ahmedn... E emanab...





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Abdelwahed Ashraf AA

71 ★ 72 ★ 73 ★ 74 ★ 75 ★ 76 ★ 77 ★ 78 ★ 79 ★ 80 ★ 81 ★ 82 ★

Textual facts

- A textual fact consists of one or more characters such as flags and indicators.
- **It should be avoided in the fact table.**

Click to add notes

3:15:16 de 78 pt 105 English (United States) 12:33 PM 8/26/2023 0:44:44 +23

Type here to search

DWH_Day02-20230826_091726-Meeting Recording Lec44

Activate Windows Go to Settings & activate Windows

Windows 32°C ENG 12:45 AM 7/28/2024

HA Hossam ... M motazm... E esraa.ma... A abdelrah... A alzahraa... E esraam205 A ahmedel... A ali.abdull... L Lec44 A Akmal.el... A ayasheil... MM Mohame... A a.alsaghiir MA Mostafa... A ahmedn... E emanab...

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Factless fact

- A fact table with only foreign keys and no facts is called a factless fact table.

The diagram illustrates a factless fact table structure. At the center is a box labeled "Fact_Leave". Four lines connect it to other boxes: "Dim_Employee" (top-left), "Dim_Day" (top-right), "Leave_Type" (bottom-left), and "Dim_Time" (bottom-right). The "Fact_Leave" box contains the following text:
day_id
time_id
employee_id
leave_type_id

```
graph TD; FactLeave[Fact_Leave] --- DimEmployee[Dim_Employee]; FactLeave --- DimDay[Dim_Day]; FactLeave --- LeaveType[Leave_Type]; FactLeave --- DimTime[Dim_Time];
```

Click to add notes

3:16:19 de 0:43:41

Type here to search

DWH_Day02-20230826_091726-Meeting Recording Lec44

Activate Windows 12:33 PM 8/26/2023 +23 Go to Settings & activate Windows

32°C صافي غالباً ENG 12:45 AM 7/28/2024

HA Hossam ... M motazm... E esraa.ma... A abdelrah... A alzahraa... E esraam205 A ahmedel... A ali.abdull... L Lec44 A Akmal.el... A ayasheil... MM Mohame... A a.alsaghiir MA Mostafa... A ahmedn... E emanab...

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Abdelwahed Ashraf AA

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Factless fact

- A fact table with only foreign keys and no facts is called a factless fact table.

```
graph TD; FactLeave[Fact_Leave] --- DimEmployee[Dim_Employee]; FactLeave --- DimDay[Dim_Day]; FactLeave --- LeaveType[Leave_Type]; FactLeave --- DimTime[Dim_Time]
```

Click to add notes

3:16:21de 7 0:43:39

Type here to search

DWH_Day02-20230826_091726-Meeting Recording Lec44

Activate Windows 12:33 PM 8/26/2023 Go to Settings & activate Windows +23

32°C صافي غالباً ENG 12:45 AM 7/28/2024

HA Hossam ... M motazm... E esraa.ma... A abdelrah... A alzahraa... E esraam205 A ahmedel... A ali.abdull... L Lec44 A Akmal.el... A ayasheil... MM Mohame... A a.alsaghiir MA Mostafa... A ahmedn... E emanab...

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Factless fact

- A fact table with **only foreign keys** and no facts is called a factless fact table.

```
graph LR; DE[Dim_Employee] --> FL[Fact_Leave]; DD[Dim_Day] --> FL; DT[Dim_Time] --> FL; LT[Leave_Type] --> FL; classDef factlessTable border: 1px solid black, padding: 10px;
```

Click to add notes

3:16:30 0:43:30

Type here to search

DWH_Day02-20230826_091726-Meeting Recording Lec44

Activate Windows 12:34 PM 8/26/2023 Go to Settings & activate Windows +23

32°C 12:45 AM 7/28/2024 ENG صافي غالباً

HA Hossam ... M motazm... E esraa.ma... A abdelrah... A alzahraa... E esraam205 A ahmedel... A ali.abdull... L Lec44 A Akmal.el... A ayasheil... MM Mohame... A a.alsaghiir MA Mostafa... A ahmedn... E emanab...

Media Player

102_dim_date_01_populate_table.xls [Compatibility Mode] - Excel

Search

Abdelwahed Ashraf AA

File Home Insert Page Layout Formulas Data Review View Power Pivot Team

Clipboard Font Alignment Number Styles Cells Editing

A1 full_date

	A	B	C	D	E	F	G	H	I	J	K	L	M
1	full_date	date_key	calendar_year	calendar_quarter	calendar_month_number	calendar_month_name							
2	1/1/2000	20000101	2000		1	1 January							
3	1/2/2000	20000102	2000		1	1 January							
4	1/3/2000	20000103	2000		1	1 January							
5	1/4/2000	20000104	2000		1	1 January							
6	1/5/2000	20000105	2000		1	1 January							
7	1/6/2000	20000106	2000		1	1 January							
8	1/7/2000	20000107	2000		1	1 January							
9	1/8/2000	20000108	2000		1	1 January							
10	1/9/2000	20000109	2000		1	1 January							
11	1/10/2000	20000110	2000		1	1 January							
12	1/11/2000	20000111	2000		1	1 January							
13	1/12/2000	20000112	2000		1	1 January							
14	1/13/2000	20000113	2000		1	1 January							
15	1/14/2000	20000114	2000		1	1 January							
16	1/15/2000	20000115	2000		1	1 January							
17	1/16/2000	20000116	2000		1	1 January							
18	1/17/2000	20000117	2000		1	1 January							
19	1/18/2000	20000118	2000		1	1 January							
20	1/19/2000	20000119	2000		1	1 January							
21	1/20/2000	20000120	2000		1	1 January							
22	1/21/2000	20000121	2000		1	1 January							

Sheet1

3:20:19 ready 0:39:41

Type here to search

Activate Windows

Go to Settings & activate Windows

32°C صافي غالباً ENG 12:48 AM 7/28/2024

DWH_Day02-20230826_091726-Meeting Recording Lec44

Media Player

HA Hossam ... M motazm... E esraa.ma... A abdelrah... A alzahraa... E esraam205 A abdullah... A ali.abdull... L Lec44 A Akmal.el... A ayasheil... MM Mohame... A a.alsaghiir MA Mostafa ... A ahmedn... E emanab...

Media Player

Calendar_script.sql - DESKTOP-01PFO86.master (DESKTOP-01PFO86\Mynta (53)) - Microsoft SQL Server Management Studio

File Edit View Query Project Tools Window Help

master Execute

Object Explorer

Properties

```
DECLARE @StartDate date = '20190101';

DECLARE @CutoffDate date = DATEADD(DAY, -1, DATEADD(YEAR, 4, @StartDate));

WITH seq(n) AS
(
    SELECT 0 UNION ALL SELECT n + 1 FROM seq
    WHERE n < DATEDIFF(DAY, @StartDate, @CutoffDate)
),
d(d) AS
(
    SELECT DATEADD(DAY, n, @StartDate) FROM seq
),
src AS
(
    SELECT
        TheDate      = CONVERT(date, d),
        TheDay       = DATEPART(DAY, d),
        TheDayName   = DATENAME(WEEKDAY, d),
        TheMonth     = DATEPART(MONTH, d),
        TheYear      = DATEPART(YEAR, d),
        TheWeekNumber= DATEPART(WEEK, d)
    FROM d
)
SELECT * FROM src;
```

Connected. (1/1)

DESKTOP-01PFO86 (15.0 RTM) | DESKTOP-01PFO86\Mynta... | master | 00:00:00 | 0 rows

3:21:11 Ready 0:38:49

Type here to search

DWH_Day02-20230826_091726-Meeting Recording Lec44

Activate Windows 12:38 PM 8/26/2023 Go to Settings & activate Windows +23

32°C صافي غالباً ENG 12:48 AM 7/28/2024

HA Hossam ... M motazm...

E esraa.ma... A abdelrah...

A alzahraa... E esraam205

A abdullah... A ali.abdull...

L Lec44 A Akmal.el...

A ayasheil... MM Mohame...

A a.alsaghiir MA Mostafa...

A ahmedn... E emanab...

Media Player

Calendar_script.sql - DESKTOP-01PFO86.master (DESKTOP-01PFO86\Mynta (53)) - Microsoft SQL Server Management Studio

File Edit View Query Project Tools Window Help

master Execute

Object Explorer

Properties

```
DECLARE @StartDate date = '20190101';

DECLARE @CutoffDate date = DATEADD(DAY, -1, DATEADD(YEAR, 4, @StartDate));

WITH seq(n) AS
(
    SELECT 0 UNION ALL SELECT n + 1 FROM seq
    WHERE n < DATEDIFF(DAY, @StartDate, @CutoffDate)
),
d(d) AS
(
    SELECT DATEADD(DAY, n, @StartDate) FROM seq
),
src AS
(
    SELECT
        TheDate      = CONVERT(date, d),
        TheDay       = DATEPART(DAY, d),
        TheDayName   = DATENAME(WEEKDAY, d),
        TheMonth     = DATEPART(MONTH, d),
        TheYear      = DATEPART(YEAR, d),
        TheWeekNumber= DATEPART(WEEK, d),
        TheQuarter   = DATEPART(QUARTER, d),
        TheDayNameShort= DATENAME(WEEKDAY, d),
        TheMonthName = DATENAME(MONTH, d),
        TheYearName  = DATENAME(YEAR, d)
    FROM d
)
SELECT * FROM src;
```

Connected. (1/1)

DESKTOP-01PFO86 (15.0 RTM) | DESKTOP-01PFO86\Mynta... | master | 00:00:00 | 0 rows

3:21:11 Ready 0:38:49

Type here to search

DWH_Day02-20230826_091726-Meeting Recording Lec44

Activate Windows 12:38 PM 8/26/2023 Go to Settings & activate Windows +23

32°C صافي غالباً ENG 12:49 AM 7/28/2024

HA Hossam ... M motazm...

E esraa.ma... A abdelrah...

A alzahraa... E esraam205

A abdullah... A ali.abdull...

L Lec44 A Akmal.el...

A ayasheil... MM Mohame...

A a.alsaghiir MA Mostafa...

A ahmedn... E emanab...

Media Player

Calendar_script.sql - DESKTOP-01PFO86.master (DESKTOP-01PFO86\Mynta (53)) - Microsoft SQL Server Management Studio

File Edit View Query Project Tools Window Help

New Query Execute

master

Object Explorer

Connect > master

Calendar_scripts.s...1PFO86\Mynta (53) X

```
(  
    SELECT DATEADD(DAY, n, @StartDate) FROM seq  
)  
src AS  
(  
    SELECT  
        TheDate      = I_CONVERT(date, d),  
        TheDay       = DATEPART(DAY, d),  
        TheDayName   = DATENAME(WEEKDAY, d),  
        TheWeek      = DATEPART(WEEK, d),  
        TheISOWeek   = DATEPART(ISO_WEEK, d),  
        TheDayOfWeek = DATEPART(WEEKDAY, d),  
        TheMonth     = DATEPART(MONTH, d),  
        TheMonthName = DATENAME(MONTH, d),  
        TheQuarter   = DATEPART(Quarter, d),  
        TheYear      = DATEPART(YEAR, d),  
        TheFirstOfMonth = DATEFROMPARTS(YEAR(d), MONTH(d), 1),  
        TheLastOfYear  = DATEFROMPARTS(YEAR(d), 12, 31),  
        TheDayOfYear   = DATEPART(DAYOFYEAR, d)  
    FROM d  
)  
SELECT *  
into TblCalendar
```

Properties

Connected. (1/1)

DESKTOP-01PFO86 (15.0 RTM) | DESKTOP-01PFO86\Mynta... | master | 00:00:00 | 0 rows

3:21:13 0:38:47

Type here to search

DWH_Day02-20230826_091726-Meeting Recording

Lec44

Activate Windows 12:38 PM 8/26/2023 Go to Settings & activate Windows +23

32°C صافي غالباً ENG 12:49 AM 7/28/2024

HA Hossam ... M motazm...
E esraa.ma... A abdelrah...
A alzahraa... E esraam205
A abdullah... A ali.abdull...
L Lec44 A Akmal.el...
A ayasheil... MM Mohame...
A a.alsaghiir MA Mostafa...
A ahmedn... E emanab...

Media Player

Calendar_script.sql - DESKTOP-01PFO86.master (DESKTOP-01PFO86\Myatra (53)) - Microsoft SQL Server Management Studio

File Edit View Query Project Tools Window Help

master Execute

Object Explorer

DESKTOP-01PFO86 (SQL Server 15.0.2101.7 - DESKTOP-01PFO86\Myatra (53))

d(d) AS
(
 SELECT DATEADD(DAY, n, @StartDate) FROM seq
)
src AS
(
 SELECT
 TheDate = CONVERT(date, d),
 TheDay = DATEPART(DAY, d),
 TheDayName = DATENAME(WEEKDAY, d),
 TheWeek = DATEPART(WEEK, d),
 TheISOWeek = DATEPART(ISO_WEEK, d),
 TheDayOfWeek = DATEPART(WEEKDAY, d),
 TheMonth = DATEPART(MONTH, d),
 TheMonthName = DATENAME(MONTH, d),
 TheQuarter = DATEPART(Quarter, d),
 TheYear = DATEPART(YEAR, d),
 TheFirstOfMonth = DATEFROMPARTS(YEAR(d), MONTH(d), 1),
 TheLastOfMonth = DATEFROMPARTS(YEAR(d), 12, 31),
 TheDayOfYear = DATEPART(DAYOFYEAR, d)
 FROM d
)
SELECT *

Connected. (1/1)

DESKTOP-01PFO86 (15.0 RTM) | DESKTOP-01PFO86\Myatra... | master | 00:00:00 | 0 rows

Properties

Quick Launch (Ctrl+Q)

Hossam ... HA M

esraa.ma... E A

abdelrah... alzahraa... A E

esraam205 abdullah... ali.abdull... A A

Lec44 Akmal.el... L A

Mohame... ayasheil... A MM

mohame... a.alsaghiir A M

bassama... ahmedn... A B

Activate Windows 12:39 PM 8/26/2023 +22 Go to Settings

3:21:47 0:38:13

Type here to search

DWH_Day02-20230826_091726-Meeting Recording

Lec44

32°C 12:49 AM 7/28/2024

Media Player

Calendar_script.sql - DESKTOP-01PFO86.master (DESKTOP-01PFO86\Mynta (53)) - Microsoft SQL Server Management Studio

File Edit View Query Project Tools Window Help

master

New Query HDT DMW XML DAX

Execute

Object Explorer

DESKTOP-01PFO86 (SQL Server 15.0.2101.7 - DESKTOP-01PFO86\Mynta) Databases Security Server Objects Replication PolyBase Always On High Availability Management Integration Services Catalogs SQL Server Agent XEvent Profiler

TheFirstOfMonth = DATEFROMPARTS(YEAR(d), MONTH(d), 1),
TheLastOfMonth = DATEFROMPARTS(YEAR(d), 12, 31),
TheDayOfYear = DATEPART(DAYOFYEAR, d)
FROM d
)
SELECT *
into TblCalendar
FROM src I
ORDER BY TheDate
OPTION (MAXRECURSION 0);

(1461 rows affected)

Completion time: 2023-08-26T12:40:06.2186114+03:00

Query executed successfully.

DESKTOP-01PFO86 (15.0 RTM) DESKTOP-01PFO86\Mynta... master 00:00:00 0 rows

3:22:58 0:37:02

Type here to search

DWH_Day02-20230826_091726-Meeting Recording Lec44

Activate Windows Go to Settings & activate Windows +22

32°C ENG 12:50 AM 7/28/2024

HA Hossam ... M motazm... E esraa.ma... A abdelrah... A alzahraa... E esraam205 A abdullah... A ali.abdull... L Lec44 A Akmal.el... A ayasheil... MM Mohame... A a.alsaghiir M mohame... A ahmedn... B bassama...

Media Player

102_dim_date_01_populate_table.xls [Compatibility Mode] - Excel

File Home Insert Page Layout Formulas Data Review View Power Pivot Team

Clipboard Font Alignment Number Styles Cells Editing

A1 full_date

	A	B	C	D	E	F	G	H	I	J	K	L	M
6	1/5/2000	20000105	2000	1	1 January								
7	1/6/2000	20000106	2000	1	1 January								
8	1/7/2000	20000107	2000	1	1 January								
9	1/8/2000	20000108	2000	1	1 January								
10	1/9/2000	20000109	2000	1	1 January								
11	1/10/2000	20000110	2000	1	1 January								
12	1/11/2000	20000111	2000	1	1 January								
13	1/12/2000	20000112	2000	1	1 January								
14	1/13/2000	20000113	2000	1	1 January								
15	1/14/2000	20000114	2000	1	1 January								
16	1/15/2000	20000115	2000	1	1 January								
17	1/16/2000	20000116	2000	1	1 January								
18	1/17/2000	20000117	2000	1	1 January								
19	1/18/2000	20000118	2000	1	1 January								
20	1/19/2000	20000119	2000	1	1 January								
21	1/20/2000	20000120	2000	1	1 January								
22	1/21/2000	20000121	2000	1	1 January								
23	1/22/2000	20000122	2000	1	1 January								
24	1/23/2000	20000123	2000	1	1 January								
25	1/24/2000	20000124	2000	1	1 January								
26	1/25/2000	20000125	2000	1	1 January								
27	1/26/2000	20000126	2000	1	1 January								

Sheet1

3:23:24 ready 0:36:36

Type here to search

DWH_Day02-20230826_091726-Meeting Recording

Lec44

Activate Windows Go to Settings & activate Windows +22

32°C ENG 12:40 PM 8/26/2023 12:51 AM 7/28/2024

HA Hossam ... M motazm... E esraa.ma... A abdelrah... A alzahraa... E esraam205 A abdullah... A ali.abdull... L Lec44 A Akmal.el... A ayasheil... MM Mohame... A a.alsaghiir mohame... A ahmedn... M manarm... HA manarm...

Media Player

102_dim_date_01_populate_table.xls [Compatibility Mode] - Excel

File Home Insert Page Layout Formulas Data Review View Power Pivot Team

D1 calendar_quarter

	A	B	C	D	E	F	G	H	I	J	K	L
1	full_date	date_key	calendar_year	calendar_quarter	calendar_month_num	calendar_month_name						
2	1/1/2000	20000101	2000	1	1	January						
3	1/2/2000	20000102	2000	1	1	January						
4	1/3/2000	20000103	2000	1	1	January						
5	1/4/2000	20000104	2000	1	1	January						
6	1/5/2000	20000105	2000	1	1	January						
7	1/6/2000	20000106	2000	1	1	January						
8	1/7/2000	20000107	2000	1	1	January						
9	1/8/2000	20000108	2000	1	1	January						
10	1/9/2000	20000109	2000	1	1	January						
11	1/10/2000	20000110	2000	1	1	January						
12	1/11/2000	20000111	2000	1	1	January						
13	1/12/2000	20000112	2000	1	1	January						
14	1/13/2000	20000113	2000	1	1	January						
15	1/14/2000	20000114	2000	1	1	January						
16	1/15/2000	20000115	2000	1	1	January						
17	1/16/2000	20000116	2000	1	1	January						
18	1/17/2000	20000117	2000	1	1	January						
19	1/18/2000	20000118	2000	1	1	January						
20	1/19/2000	20000119	2000	1	1	January						
21	1/20/2000	20000120	2000	1	1	January						
22	1/21/2000	20000121	2000	1	1	January						

Sheet1

3:24:57 ready 0:35:03

Type here to search

DWH_Day02-20230826_091726-Meeting Recording Lec44

Activate Windows Go to Settings & activate Windows +22

32°C ENG 12:42 PM 8/26/2023 12:52 AM ENG 7/28/2024

HA Hossam ... M motazm... E esraa.ma... A abdelrah... A alzahraa... E esraam205 A abdullah... A ali.abdull... L Lec44 A Akmal.el... A ayasheil... MM Mohame... A a.alsaghiir mohame... A ahmedn... B bassama...

The screenshot shows a Microsoft SQL Server Management Studio (SSMS) window. The title bar reads "SQLQuery1.sql - DESKTOP-01PFO86.sales (DESKTOP-01PFO86\Mynta (61)) - Microsoft SQL Server Management Studio". The main area displays a T-SQL script for generating a calendar table:

```
***** Script for SelectTopNRows command from SSMS *****
SELECT TOP (1000) [TheDate]
,[TheDay]
,[TheDayName]
```

The results grid shows 21 rows of data for January 2019, mapping each day to its date, day number, day name, week number, ISO week, day of the week, month, month name, quarter, year, first day of the month, last day of the year, and day of the year.

	TheDate	TheDay	TheDayName	TheWeek	TheISOWeek	TheDayOfWeek	TheMonth	TheMonthName	TheQuarter	TheYear	TheFirstOfMonth	TheLastOfYear	TheDayOfYear
1	2019-01-01	1	Tuesday	1	1	3	1	January	1	2019	2019-01-01	2019-12-31	1
2	2019-01-02	2	Wednesday	1	1	4	1	January	1	2019	2019-01-01	2019-12-31	2
3	2019-01-03	3	Thursday	1	1	5	1	January	1	2019	2019-01-01	2019-12-31	3
4	2019-01-04	4	Friday	1	1	6	1	January	1	2019	2019-01-01	2019-12-31	4
5	2019-01-05	5	Saturday	1	1	7	1	January	1	2019	2019-01-01	2019-12-31	5
6	2019-01-06	6	Sunday	2	1	1	1	January	1	2019	2019-01-01	2019-12-31	6
7	2019-01-07	7	Monday	2	2	2	1	January	1	2019	2019-01-01	2019-12-31	7
8	2019-01-08	8	Tuesday	2	2	3	1	January	1	2019	2019-01-01	2019-12-31	8
9	2019-01-09	9	Wednesday	2	2	4	1	January	1	2019	2019-01-01	2019-12-31	9
10	2019-01-10	10	Thursday	2	2	5	1	January	1	2019	2019-01-01	2019-12-31	10
11	2019-01-11	11	Friday	2	2	6	1	January	1	2019	2019-01-01	2019-12-31	11
12	2019-01-12	12	Saturday	2	2	7	1	January	1	2019	2019-01-01	2019-12-31	12
13	2019-01-13	13	Sunday	3	2	1	1	January	1	2019	2019-01-01	2019-12-31	13
14	2019-01-14	14	Monday	3	3	2	1	January	1	2019	2019-01-01	2019-12-31	14
15	2019-01-15	15	Tuesday	3	3	3	1	January	1	2019	2019-01-01	2019-12-31	15
16	2019-01-16	16	Wednesday	3	3	4	1	January	1	2019	2019-01-01	2019-12-31	16
17	2019-01-17	17	Thursday	3	3	5	1	January	1	2019	2019-01-01	2019-12-31	17
18	2019-01-18	18	Friday	3	3	6	1	January	1	2019	2019-01-01	2019-12-31	18
19	2019-01-19	19	Saturday	3	3	7	1	January	1	2019	2019-01-01	2019-12-31	19
20	2019-01-20	20	Sunday	4	3	1	1	January	1	2019	2019-01-01	2019-12-31	20
21	2019-01-21	21	Monday	4	4	2	1	January	1	2019	2019-01-01	2019-12-31	21

The status bar at the bottom indicates "Query executed successfully." and "1,000 rows".

On the right side of the screen, there is a vertical column of circular icons representing other users or sessions, each with a initials and a color-coded background. The users listed are HA (pink), M (light green), E (teal), A (light blue), A (light orange), alzahraa... (blue), esraam205 (light orange), D (orange), A (yellow), L (grey), A (red), ayasheai... (pink), MM (light blue), a.alsaghiir (pink), mohame... (light blue), A (orange), B (pink), ahmedn... (light orange), and bassama... (pink).

Media Player

SQLQuery1.sql - DESKTOP-01PFO86.sales (DESKTOP-01PFO86\Mynta (61)) - Microsoft SQL Server Management Studio

File Edit View Query Project Tools Window Help

New Query HKEY_DWORD HKEY_DWORD HKEY_DWORD

sales Execute

Object Explorer

SQLQuery1.sql - DE...PFO86\Mynta (61) Calendar_script.s...1PFO86\Mynta (53)

***** Script for SelectTopNRows command from SSMS *****

-
SELECT TOP (1000) [TheDate]
,[TheDay]
,[TheDayName]

Results Messages

	TheDate	TheDay	TheDayName	TheWeek	TheISOWeek	TheDayOfWeek	TheMonth	TheMonthName	TheQuarter	TheYear	TheFirstOfMonth	TheLastOfMonth	TheLastOfYear	TheDayOfYear
1	2019-01-01	1	Tuesday	1	1	3	1	January	1	2019	2019-01-01	2019-12-31	1	
2	2019-01-02	2	Wednesday	1	1	4	1	January	1	2019	2019-01-01	2019-12-31	2	
3	2019-01-03	3	Thursday	1	1	5	1	January	1	2019	2019-01-01	2019-12-31	3	
4	2019-01-04	4	Friday	1	1	6	1	January	1	2019	2019-01-01	2019-12-31	4	
5	2019-01-05	5	Saturday	1	1	7	1	January	1	2019	2019-01-01	2019-12-31	5	
6	2019-01-06	6	Sunday	2	1	1	1	January	1	2019	2019-01-01	2019-12-31	6	
7	2019-01-07	7	Monday	2	2	2	1	January	1	2019	2019-01-01	2019-12-31	7	
8	2019-01-08	8	Tuesday	2	2	3	1	January	1	2019	2019-01-01	2019-12-31	8	
9	2019-01-09	9	Wednesday	2	2	4	1	January	1	2019	2019-01-01	2019-12-31	9	
10	2019-01-10	10	Thursday	2	2	5	1	January	1	2019	2019-01-01	2019-12-31	10	
11	2019-01-11	11	Friday	2	2	6	1	January	1	2019	2019-01-01	2019-12-31	11	
12	2019-01-12	12	Saturday	2	2	7	1	January	1	2019	2019-01-01	2019-12-31	12	
13	2019-01-13	13	Sunday	3	2	1	1	January	1	2019	2019-01-01	2019-12-31	13	
14	2019-01-14	14	Monday	3	3	2	1	January	1	2019	2019-01-01	2019-12-31	14	
15	2019-01-15	15	Tuesday	3	3	3	1	January	1	2019	2019-01-01	2019-12-31	15	
16	2019-01-16	16	Wednesday	3	3	4	1	January	1	2019	2019-01-01	2019-12-31	16	
17	2019-01-17	17	Thursday	3	3	5	1	January	1	2019	2019-01-01	2019-12-31	17	
18	2019-01-18	18	Friday	3	3	6	1	January	1	2019	2019-01-01	2019-12-31	18	
19	2019-01-19	19	Saturday	3	3	7	1	January	1	2019	2019-01-01	2019-12-31	19	
20	2019-01-20	20	Sunday	4	3	1	1	January	1	2019	2019-01-01	2019-12-31	20	
21	2019-01-21	21	Monday	4	4	2	1	January	1	2019	2019-01-01	2019-12-31	21	

Query executed successfully.

DESKTOP-01PFO86 (15.0 RTM) | DESKTOP-01PFO86\Mynta... sales 00:00:00 | 1,000 rows

3:26:04 0:33:56

Type here to search

DWH_Day02-20230826_091726-Meeting Recording Lec44

Activate Windows 8/26/2024 +22 Go to Settings

32°C ENG 12:43 PM 7/28/2024

صافٰ غالباً ENG 12:53 AM 7/28/2024

HA Hossam ... M motazm... E esraa.ma... A abdelrah... A alzahraa... E esraam205 D dinamor... A ali.abdull... L Lec44 A Akmal.el... A ayasheai... MM Mohame... A a.alsaghiir mohame... A ahmedn... B bassama...

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Abdelwahed Ashraf AA

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Fact types

Click to add notes

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DWH_Day02-20230826_091726-Meeting Recording Lec44

Activate Windows 12:46 PM 8/26/2023 Go to Settings & activate Windows +23

32°C صافي غالباً ENG 12:55 AM 7/28/2024

HA Hossam ... M motazm...
E esraa.ma... A abdelrah...
A alzahraa... E esraam205
D dinamor... A ali.abdull...
L Lec44 A Akmal.el...
A ayasheai... MM Mohame...
A a.alsaghiir M mohame...
A ahmedn... B bassama...

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Fact types

- Each fact table includes facts and it has different types:
 - Additive facts.
 - Semi-additive facts.
 - Non-additive facts.
 - Derived facts.
 - Textual facts.
 - Factless fact.

The numeric measures in a fact table fall into three categories.

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Activate Windows 12:47 PM 8/26/2023 +23 Go to Settings & activate Windows

32°C صافي غالباً ENG 12:55 AM 7/28/2024

HA Hossam ... M motazm... E esraa.ma... A abdelrah... A alzahraa... E esraam205 D dinamor... A ali.abdull... L Lec44 A Akmal.el... A ayasheai... MM Mohame... A a.alsaghiir M mohame... A ahmedn... M Mohame...

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Dimensions Types: Conformed Dimension

Dimension tables have many columns (or attributes)

3:30:37 de 0:29:23

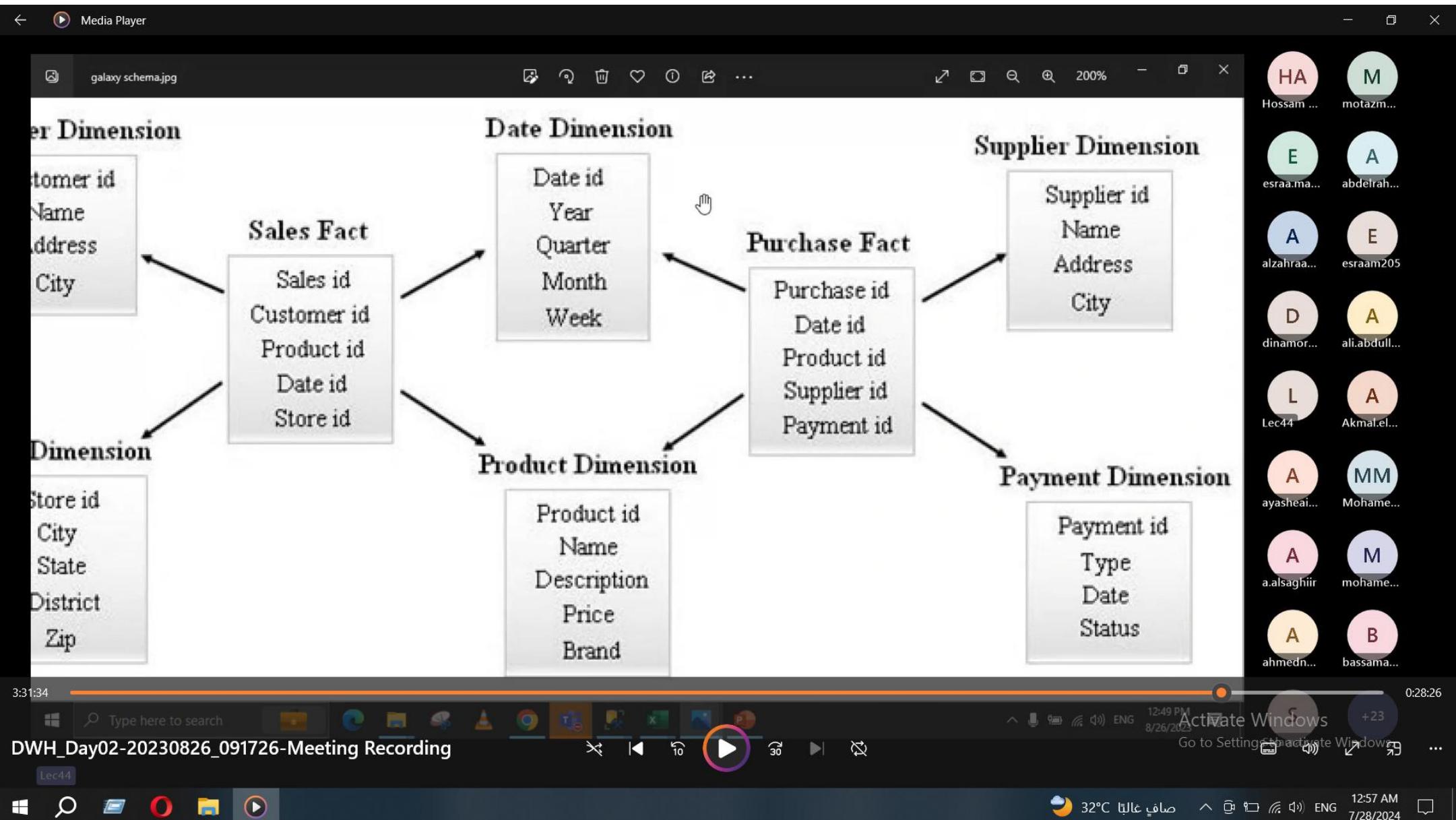
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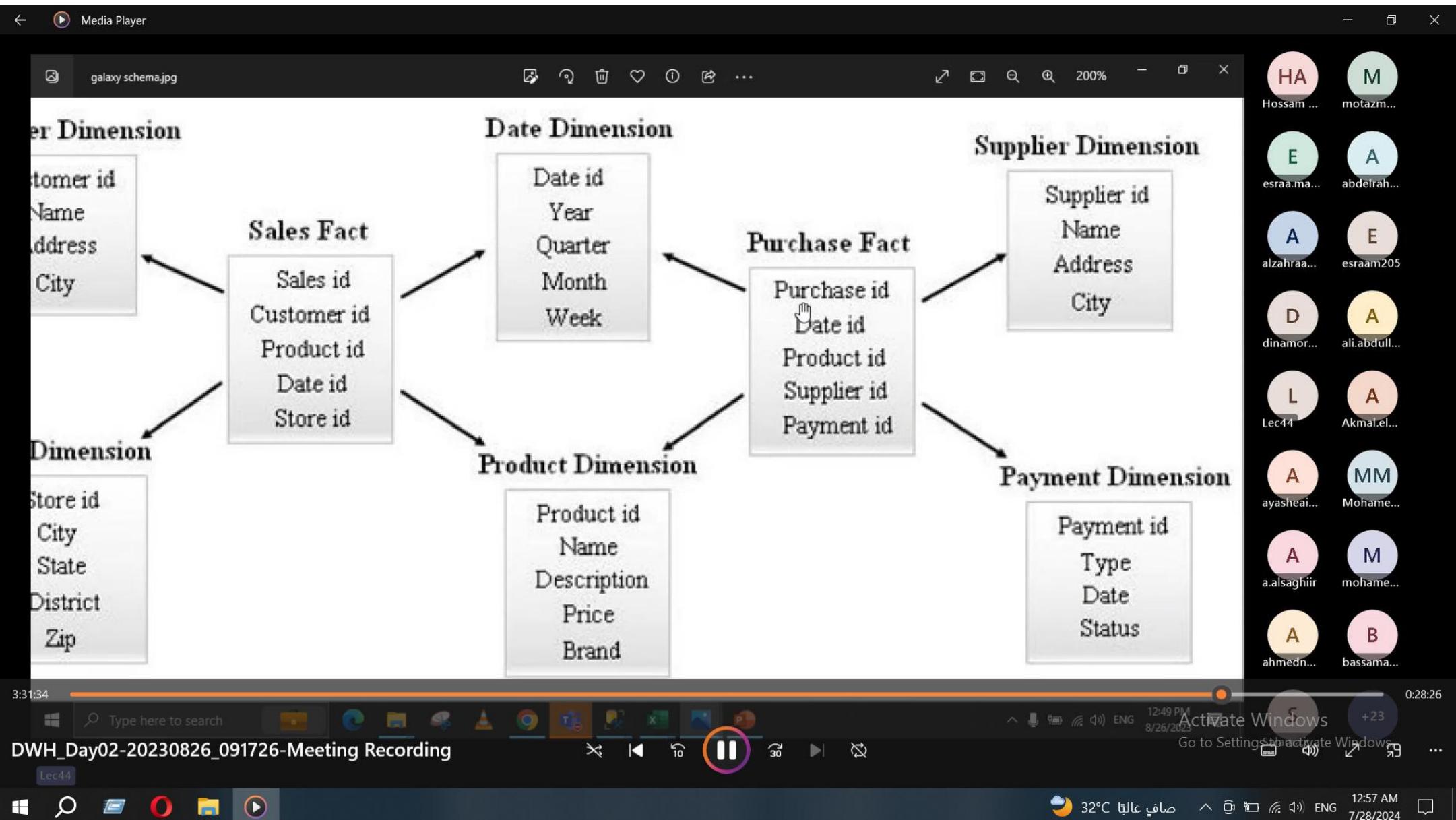
DWH_Day02-20230826_091726-Meeting Recording Lec44

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HA Hossam ... M motazm... E esraa.ma... A abdelrah... A alzahraa... E esraam205 D dinamor... A ali.abdull... L Lec44 A Akmal.el... A ayasheil... MM Mohame... A a.alsaghiir M mohame... A ahmedn... B bassama...





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Conformed Dimensions

- **Conformed Dimensions:** the dimension which is identical and has the same meaning across many fact tables which it relates and used in different areas of the warehouse.

Example:

(Date as a Key): if we have a date column across many facts, we could use the date as key in all tables. So, it should be a unified format.

Click to add notes

3:33:02 de 0:26:58

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DWH_Day02-20230826_091726-Meeting Recording Lec44

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Windows 32°C ENG 12:58 AM 7/28/2024

HA Hossam ... M motazm... E esraa.ma... A abdelrah... A alzahraa... E esraam205 D dinamor... A ali.abdull... L Lec44 A Akmal.el... A ayasheil... MM Mohame... A a.alsaghiir M mohame... A ahmedn... B bassama...

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Example:

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Click to add notes

3:33:02 de 0:26:58

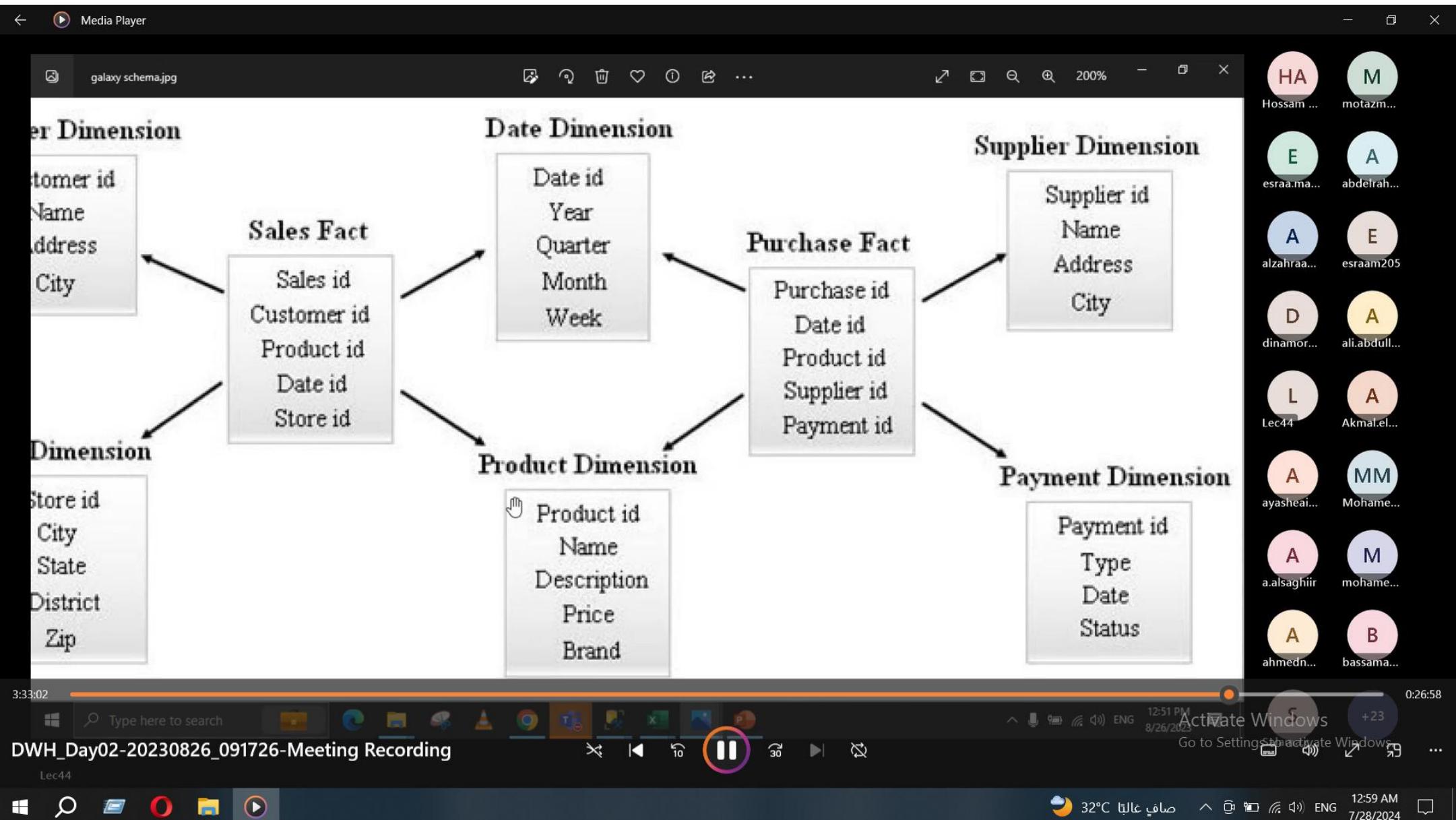
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Windows 32°C ENG 12:59 AM 7/28/2024

HA Hossam ... M motazm... E esraa.ma... A abdelrah... A alzahraa... E esraam205 D dinamor... A ali.abdull... L Lec44 A Akmal.el... A ayasheil... MM Mohame... A a.alsaghiir M mohame... A ahmedn... B bassama...



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HA Hossam ... M motazm...

E esraa.ma... A abdelrah...

A alzahraa... E esraam205

D dinamor... A ali.abdull...

L Lec44 A Akmal.el...

A ayasheil... MM Mohame...

A a.alsaghiir M mohame...

A ahmedn... B bassama...

Five Main DW Architectures

(a) Independent Data Marts Architecture

The diagram shows a flow from Source Systems through an ETL process and a Staging Area to three separate 'Independent data marts (atomic/summarized data)' represented by orange cylinders. These marts then feed into 'End user access and applications'.

(b) Data Mart Bus Architecture with Linked Dimensional Datamarts

The diagram shows a flow from Source Systems through an ETL process and a Staging Area to three 'Dimensionalized data marts linked by conformed dimensions (atomic/summarized data)' represented by orange cylinders. These marts then feed into 'End user access and applications'.

(c) Hub and Spoke Architecture (Corporate Information Factory)

The diagram shows a flow from Source Systems through an ETL process and a Staging Area to a 'Normalized relational warehouse (atomic data)' represented by a blue cylinder. This warehouse then feeds into two 'Dependent data marts (summarized/some atomic data)' represented by orange cylinders, which in turn feed into 'End user access and applications'.

3:34:25 de 0:25:35

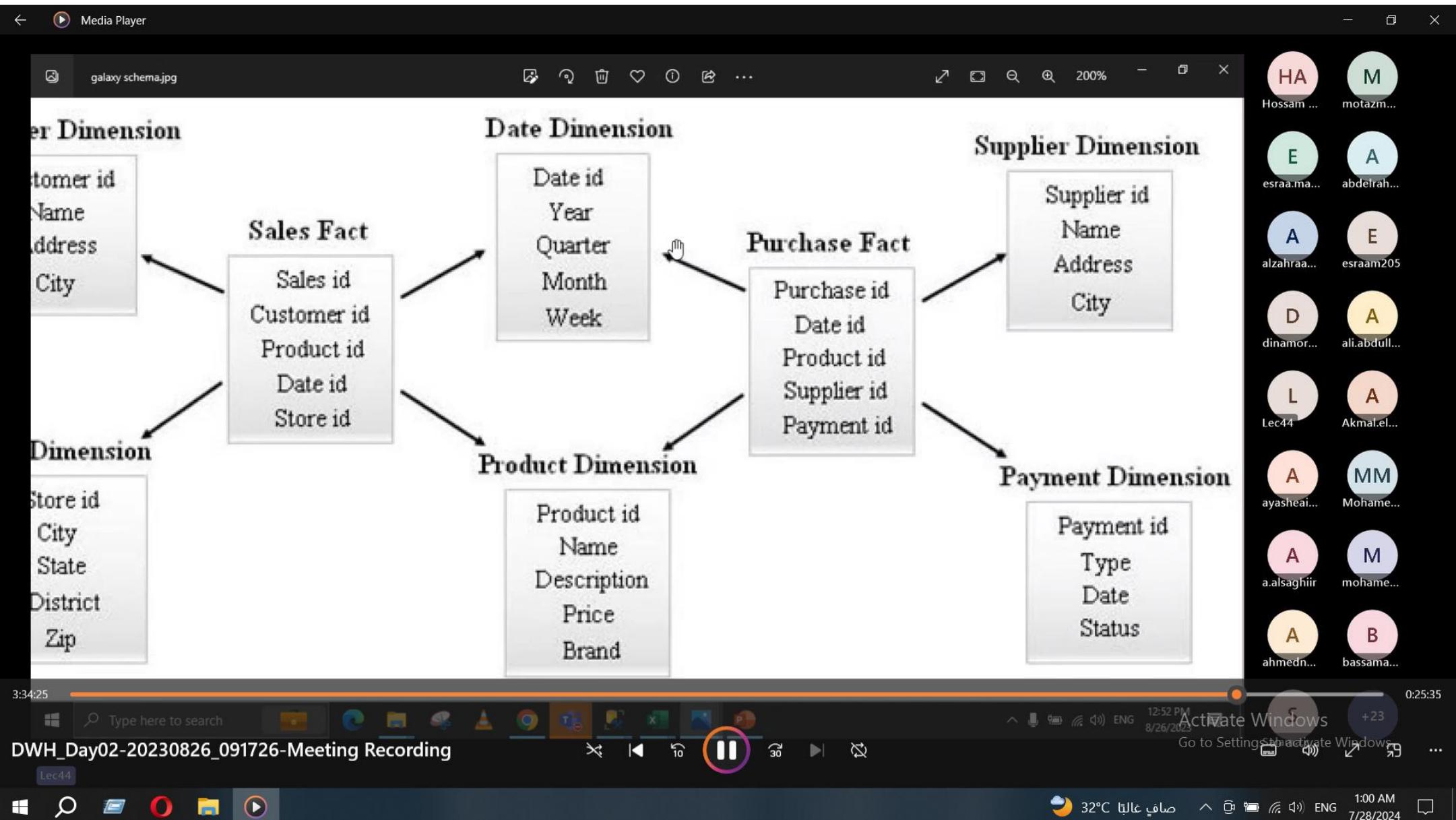
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DWH_Day02-20230826_091726-Meeting Recording Lec44

32°C صافي غالباً ENG 1:00 AM 7/28/2024



Slowly Changing Dimensions

- Although data in fact table are normally static, data in dimension tables may be changed.
 - A customer may change address during 5 year-period
 - Problem known as “Slowly Changing Dimensions” (Kimball, 2002)
 - Common changing types:
 - 0: No change
 - 1: Overwrites value
 - 2: Adds new row
 - 3: Adds new column (update rows)

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Hossam ... motazm... E A esraa.ma... abdelrah... A E alzahraa... esraam205 D A dinamor... ali.abdull... L A Lec44 Akmal.el... A MM ayasheil... Mohame... A M a.alsaghiir mohame... A B ahmed... bassama... 3:36:00 0:24:00 Type here to search 12:53 PM 8/26/2023 Activate Windows Go to Settings & activate Windows +23 DWH_Day02-20230826_091726-Meeting Recording Lec44 32°C 1:01 AM 7/28/2024

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 - 3: Adds new column (update rows)

Account Talabat Add Alex dwh ???

Account ITI Add Alex dw

3:37:07 de 0:22:53

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HA Hossam ... M motazm... E esraa.ma... A abdelrah... A alzahraa... E esraam205 D dinamor... A ali.abdull... L Lec44 A Akmal.el... A ayasheil... MM Mohame... A a.alsaghiir mohame... A ahmedn... H Hesham...

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Abdelwahed Ashraf AA

73 ★ 74 ★ 75 ★ 76 ★ 77 ★ 78 ★ 79 ★ 80 ★ 81 ★ 82 Account Talabat Add Alex dwh ??? 83 Account ITI Add Alex dwh ?? 84

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 - 2: Adds new row
 - 3: Adds new column (update rows)

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Windows 32°C ENG 1:07 AM 7/28/2024

HA Hossam ... M motazm... E esraa.ma... A abdelrah... A alzahraa... E esraam205 D dinamor... A ali.abdull... L Lec44 A Akmal.el... A ayasheil... MM Mohame... A a.alsaghiir M mohame... A ahmed... B bassama...

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Slowly Changing Dimensions

Type-1 Change

- Replace old value in the dimension table with the new value
- Simple
- Cannot query old value

Product ID Name Brand Serial No.

12345	TV 20"	National	ABC00-X
12345	TV 20"	Panasonic	ABC00-X

update

Click to add notes

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32°C صافي غالباً ENG 1:07 AM 7/28/2024

HA Hossam ... M motazm... E esraa.ma... A abdelrah... A alzahraa... E esraam205 D dinamor... A ali.abdull... L Lec44 A Akmal.el... A ayasheil... MM Mohame... A a.alsaghiir M mohame... A ahmed... B bassama...

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Abdelwahed Ashraf AA

Slowly Changing Dimensions

Type-1 Change

- Replace old value in the dimension table with the new value
- Simple
- Cannot query old value

Product ID Name Brand Serial No.

12345	TV 20"	National	ABC00-X
12345	TV 20"	Panasonic	ABC00-X

update

Click to add notes

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HA Hossam ... M motazm... E esraa.ma... A abdelrah... A alzahraa... E esraam205 D dinamor... A ali.abdull... L Lec44 A Akmal.el... A ayasheil... MM Mohame... A a.alsaghiir mohame... A ahmed... A abdullah...

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Slowly Changing Dimensions

Type-2 Change

- Add new row with the new information
- Surrogate keys required
- Allows tracking history (versioning)
- Used most often in DW

Product ID | Name | Brand | Serial No.

Product ID	Name	Brand	Serial No.
25984	TV 20"	Panasonic	ABC00-X

Inserted new row

Click to add notes

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DWH_Day02-20230826_091726-Meeting Recording Lec44

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HA Hossam ... M motazm... E esraa.ma... A abdelrah... A alzahraa... E esraam205 D dinamor... A ali.abdull... L Lec44 A Akmal.el... A ayasheil... MM Mohame... A a.alsaghiir mohame... A ahmed... B bassama...

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Slowly Changing Dimensions

Type-2 Change

- Add new row with the new information
- Surrogate keys required
- Allows tracking history (versioning)
- Used most often in DW

Product ID	Name	Brand	Serial No.
12345	TV 20"	National	ABC00-X
25984	TV 20"	Panasonic	ABC00-X

Inserted new row

Click to add notes

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DWH_Day02-20230826_091726-Meeting Recording Lec44

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32°C صافي غالباً ENG 7/28/2024 1:09 AM

HA Hossam ... M motazm... E esraa.ma... A abdelrah... A alzahraa... E esraam205 D dinamor... A ali.abdull... L Lec44 A Akmal.el... A ayasheil... MM Mohame... A a.alsaghiir mohame... A ahmed... B bassama...

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Abdelwahed Ashraf AA

Slowly Changing Dimensions

Type-2 Change

- Add new row with the new information
- Surrogate keys required
- Allows tracking history (versioning)
- Used most often in DW

Product ID	Name	Brand	Serial No.
12345	TV 20"	National	ABC00-X
25984	TV 20"	Panasonic	ABC00-X

Inserted new row

Click to add notes

3:43:51de 0:16:09

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DWH_Day02-20230826_091726-Meeting Recording Lec44

Activate Windows 1:01 PM 8/26/2023 +23 Go to Settings & activate Windows

32°C صافي غالباً ENG 7/28/2024 1:09 AM

HA Hossam ... M motazm... E esraa.ma... A abdelrah... A alzahraa... E esraam205 D dinamor... A ali.abdull... L Lec44 A Akmal.el... A ayasheil... MM Mohame... A a.alsaghiir mohame... A ahmed... B bassama...

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Abdelwahed Ashraf AA

Slowly Changing Dimensions

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- Add new row with the new information
- Surrogate keys required
- Allows tracking history (versioning)
- Used most often in DW

Product ID	Name	Brand	Serial No.
12345	TV 20"	National	ABC00-X
25984	TV 20"	Panasonic	ABC00-X

Inserted new row

Click to add notes

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DWH_Day02-20230826_091726-Meeting Recording Lec44

Activate Windows 1:01 PM 8/26/2023 +23 Go to Settings & activate Windows

32°C صافي غالباً ENG 7/28/2024 1:09 AM

HA Hossam ... M motazm... E esraa.ma... A abdelrah... A alzahraa... E esraam205 D dinamor... A ali.abdull... L Lec44 A Akmal.el... A ayasheil... MM Mohame... A a.alsaghiir mohame... A ahmed... B bassama...

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Type-1 Change

- Replace old value in the dimension table with the new value
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- Cannot query old value

Product ID Name Brand Serial No.

12345	TV 20"	National	ABC00-X
12345	TV 20"	Panasonic	ABC00-X

update

Click to add notes

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DWH_Day02-20230826_091726-Meeting Recording Lec44

Activate Windows 1:02 PM 8/26/2023 +23 Go to Settings & activate Windows

32°C صافي غالباً ENG 1:10 AM 7/28/2024

HA Hossam ... M motazm... E esraa.ma... A abdelrah... A alzahraa... E esraam205 D dinamor... A ali.abdull... L Lec44 A Akmal.el... A ayasheil... MM Mohame... A a.alsaghiir mohame... A ahmed... B bassama...

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 - A customer may change address during 5 year-period
- Problem known as "Slowly Changing Dimensions" (Kimball, 2002)
- Common changing types:
 - 0: No change
 - 1: Overwrites value
 - 2: Adds new row
 - 3: Adds new column (update rows)

Account Talabat Add Alex dwh ???

Account ITI Add Alex dwh ??

3:46:42 de 0:13:18

Type here to search

Activate Windows 1:04 PM 8/26/2023 +23 Go to Settings & activate Windows

DWH_Day02-20230826_091726-Meeting Recording Lec44

32°C صافي غالباً ENG 1:11 AM 7/28/2024

HA Hossam ... M motazm... E esraa.ma... A abdelrah... A alzahraa... E esraam205 D dinamor... A ali.abdull... L Lec44 A Akmal.el... A ayasheil... MM Mohame... A a.alsaghiir mohame... A ahmedn... A abdullah...

Media Player

DWH Lecture - Day02.pptx - PowerPoint

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Abdelwahed Ashraf AA

Slowly Changing Dimensions

Type-2 Change

- Add new row with the new information
- Surrogate keys required
- Allows tracking history (versioning)
- Used most often in DW

Product ID	Name	Brand	Serial No.
12345	TV 20"	National	ABC00-X
25984	TV 20"	Panasonic	ABC00-X

Inserted new row

Click to add notes

3:48:35 de 0:11:25

Type here to search

DWH_Day02-20230826_091726-Meeting Recording Lec44

Activate Windows 1:06 PM 8/26/2023 Go to Settings to activate Windows +24

32°C صافي غالباً ENG 1:13 AM 7/28/2024

HA Hossam ... M motazm... E esraa.ma... A abdelrah... A alzahraa... E esraam205 D dinamor... A ali.abdull... L Lec44 A Akmal.el... A ayasheil... MM Mohame... A a.alsaghiir H Hesham... A ahmedn... A abdullah...

Media Player

DWH Lecture - Day02.pptx - PowerPoint

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Abdelwahed Ashraf AA

Slowly Changing Dimensions

Type-2 Change

- Add new row with the new information
- Surrogate keys required
- Allows tracking history (versioning)
- Used most often in DW

Product ID	Name	Brand	Serial No.
12345	TV 20"	National	ABC00-X
25984	TV 20"	Panasonic	ABC00-X

Inserted new row

Click to add notes

3:48:48 0:11:12

Type here to search

DWH_Day02-20230826_091726-Meeting Recording

Lec44

Activate Windows 1:06 PM 8/26/2023 +24 Go to Settings to activate Windows

32°C صافي غالباً ENG 1:13 AM 7/28/2024

HA Hossam ... M motazm... E esraa.ma... A abdelrah... A alzahraa... E esraam205 D dinamor... A ali.abdull... L Lec44 A Akmal.el... A ayasheil... MM Mohame... A a.alsaghiir H Hesham... A ahmedn... M Mostafa...

Media Player

SQLQuery2.sql - DESKTOP-01PFO86.DEMO_DWH_AdventureWorks (DESKTOP-01PFO86\Myatra (65)) - Microsoft SQL Server Management Studio

File Edit View Query Project Tools Window Help

DEM0_DWH_AdventureW... Execute

Object Explorer

DESKTOP-01PFO86 (SQL Server 15.0.2101.7 - DESKTOP-01PFC)

- Databases
 - System Databases
 - Database Snapshots
 - AdventureWorks2017
 - AdventureWorksDW2017
 - Cat_Su_Cat_Service
 - DB_EXAM
 - DEMO_DWH_AdventureWorks
 - Database Diagrams
 - Tables
 - System Tables
 - FileTables
 - External Tables
 - Graph Tables
 - dbo.dim_customer
 - dbo.dim_date
 - dbo.dim_product
 - dbo.dim_territory
 - dbo.fact_sales
 - Views
 - External Resources
 - Synonyms
 - Programmability
 - Service Broker
 - Storage
 - Security
 - DWH_App_My_NTRA
 - DWH_MY_NTRA

***** Script for SelectTopNRows command from SSMS *****

```
SELECT TOP (1000) [customer_key]
    ,[customer_id]
    ,[customer_name]
    ,[address1]
    ,[address2]
    ,[city]
    ,[phone]
    ,[source_system_code]
    ,[start_date]
    ,[end_date]
    ,[is_current]
```

Results

customer_key	customer_id	customer_name	address1	address2	city	phone	source_system_code	start_date	end_date	is_current
1	0	Unknown	Unknown	Unknown	Unknown	Unknown	0	1900-01-01 00:00:00.000	NULL	1

Query executed successfully.

DESKTOP-01PFO86 (15.0 RTM) | DESKTOP-01PFO86\Myatra... | DEMO_DWH_AdventureWorks | 00:00:00 | 1 rows

0:51:07 0:08:53

Type here to search

DWH_Day02-20230826_091726-Meeting Recording

Lec44

Activate Windows
Go to Settings > Activate Windows
+24

32°C صافي غالباً ENG 7/28/2024 1:14 AM

HA Hossam ... M motazm...
E esraa.ma... A abdelrah...
A alzahraa... E esraam205
D dinamor... A ali.abdull...
L Lec44 A Akmal.el...
A ayasheil... MM Mohame...
A a.alsaghiir H Hesham...
A ahmedn... M Mostafa...

Media Player

SQLQuery2.sql - DESKTOP-01PFO86.DEMO_DWH_AdventureWorks (DESKTOP-01PFO86\Myatra (65)) - Microsoft SQL Server Management Studio

File Edit View Query Project Tools Window Help

DEM0_DWH_AdventureW... Execute

Object Explorer

DESKTOP-01PFO86 (SQL Server 15.0.2101.7 - DESKTOP-01PFC)

- Databases
 - System Databases
 - Database Snapshots
 - AdventureWorks2017
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 - Cat_Su_Cat_Service
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 - Database Diagrams
 - Tables
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 - dbo.dim_customer
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 - dbo.dim_territory
 - dbo.fact_sales
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 - DWH_MY_NTRA

***** Script for SelectTopNRows command from SSMS *****

```
SELECT TOP (1000) [customer_key]
    ,[customer_id]
    ,[customer_name]
    ,[address1]
    ,[address2]
    ,[city]
    ,[phone]
    ,[source_system_code]
    ,[start_date]
    ,[end_date]
    ,[is_current]
```

Results

customer_key	customer_id	customer_name	address1	address2	city	phone	source_system_code	start_date	end_date	is_current
1	0	Unknown	Unknown	Unknown	Unknown	Unknown	0	1900-01-01 00:00:00.000	NULL	1

Query executed successfully.

DESKTOP-01PFO86 (15.0 RTM) | DESKTOP-01PFO86\Myatra... | DEMO_DWH_AdventureWorks | 00:00:00 | 1 rows

0:51:07 0:08:53

Type here to search

DWH_Day02-20230826_091726-Meeting Recording

Lec44

Activate Windows
Go to Settings > Activate Windows
+24

32°C صافي غالباً ENG 7/28/2024 1:14 AM

HA Hossam ... M motazm...
E esraa.ma... A abdelrah...
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D dinamor... A ali.abdull...
L Lec44 A Akmal.el...
A ayasheil... MM Mohame...
A a.alsaghiir H Hesham...
A ahmedn... M Mostafa...

Slowly Changing Dimensions

- Although data in fact table are normally static, data in dimension tables may be changed.
 - A customer may change address during 5 year-period
 - Problem known as “Slowly Changing Dimensions” (Kimball, 2002)
 - Common changing types:
 - 0: No change
 - 1: Overwrites value
 - 2: Adds new row
 - 3: Adds new column (update rows)

The screenshot shows a Microsoft PowerPoint slide titled "Slowly Changing Dimensions". The slide contains a bulleted list explaining the concept, mentioning data changes in dimension tables and the "Slowly Changing Dimensions" problem. It also describes common change types: 0 (No change), 1 (Overwrites value), 2 (Adds new row), and 3 (Adds new column). The background of the slide is blue, and the text is white. The slide is part of a larger presentation titled "DWH Lecture - Day02.pptx". The Windows taskbar at the bottom shows various open applications, including Microsoft SQL Server Management Studio and SQLQuery3.sql. The system tray indicates a temperature of 32°C and a date/time of 7/28/2024 at 1:16 AM. A media player interface is visible at the bottom, showing a play button and a progress bar from 3:53:37 to 0:06:23.

Media Player

SQLQuery3.sql - DESKTOP-01PFO86.AdventureWorks2017 (DESKTOP-01PFO86\Mynta (60)) - Microsoft SQL Server Management Studio

File Edit View Query Project Tools Window Help

AdventureWorks2017 Execute

Object Explorer

Script for SelectTopNRows command from SSMS

```
***** Script for SelectTopNRows command from SSMS *****/
SELECT TOP (1000) [CustomerID]
      ,[PersonID]
      ,[StoreID]
      ,[TerritoryID]
      ,[AccountNumber]
      ,[rowguid]
      ,[ModifiedDate]
  FROM [AdventureWorks2017].[Sales].[Customer]
```

Results Messages

CustomerID	PersonID	StoreID	TerritoryID	AccountNumber	rowguid	ModifiedDate
1	NULL	934	1	AW00000001	3F5AE95E-B87D-4AED-95B4-C3797AFCB74F	2014-09-12 11:15:07.263
2	NULL	1028	1	AW00000002	E552F657-A9AF-4A7D-A645-C429D6E02491	2014-09-12 11:15:07.263
3	NULL	642	4	AW00000003	130774B1-DB21-4EF3-98C8-C104BCD6ED6D	2014-09-12 11:15:07.263
4	NULL	932	4	AW00000004	FF862851-1DAA-4044-BE7C-3E85583C054D	2014-09-12 11:15:07.263
5	NULL	1026	4	AW00000005	83905BDC-6F5E-4F71-B162-C98DA069F38A	2014-09-12 11:15:07.263
6	NULL	644	4	AW00000006	1A92DF88-BFA2-467D-BD54-FCB9E647FDD7	2014-09-12 11:15:07.263
7	NULL	930	1	AW00000007	03E9273E-B193-448E-9823-FE0C44AEED78	2014-09-12 11:15:07.263
8	NULL	1024	5	AW00000008	801368B1-4323-4BFA-8BEA-5B5B1E4BD4A0	2014-09-12 11:15:07.263
9	NULL	620	5	AW00000009	B900BB7F-23C3-481D-80DA-C49A5BD6F772	2014-09-12 11:15:07.263
10	NULL	928	6	AW00000010	CDB6698D-2FF1-4FBA-8F22-60AD1D11DABD	2014-09-12 11:15:07.263
11	NULL	1022	6	AW00000011	750F3495-59C4-48A0-80E1-E37EC60E77D9	2014-09-12 11:15:07.263

Query executed successfully.

DESKTOP-01PFO86 (15.0 RTM) DESKTOP-01PFO86\Mynta... AdventureWorks2017 00:00:00 1,000 rows

135 %

HA Hossam ... M motazm...

E esraa.ma... A abdelrah...

A alzahraa... E esraam205

D dinamor... A ali.abdull...

L Lec44 A Akmal.el...

A ayasheil... MM Mohame...

A a.alsaghiir B bassama...

A ahmedn... M Mostafa...

3:53:37 0:06:23

Type here to search

Activate Windows +25

1:11 PM 8/26/2023 Go to Settings & activate Windows

DWH_Day02-20230826_091726-Meeting Recording Lec44

32°C صافي غالباً ENG 1:16 AM 7/28/2024

Media Player

SQLQuery2.sql - DESKTOP-01PFO86.DEMO_DWH_AdventureWorks (DESKTOP-01PFO86\Myatra (65)) - Microsoft SQL Server Management Studio

File Edit View Query Project Tools Window Help

New Query HDT DMY EMLA DAE

Execute

Object Explorer

SQLQuery3.sql - DE...PFO86\Myatra (60) SQLQuery2.sql - DE...PFO86\Myatra (65) SQLQuery1.sql - DE...PFO86\Myatra (61) Calendar_script.s...1PFO86\Myatra (53)

Properties

```
***** Script for SelectTopNRows command from SSMS *****/
SELECT TOP (1000) [customer_key]
    ,[customer_id]
    ,[customer_name]
    ,[address1]
    ,[address2]
    ,[city]
    ,[phone]
    ,[source_system_code]
    ,[start_date]
    ,[end_date]
    ,[is_current]
```

Results Messages

	customer_key	customer_id	customer_name	address1	address2	city	phone	source_system_code	start_date	end_date	is_current
1	0	0	Unknown	Unknown	Unknown	Unknown	Unknown	0	1900-01-01 00:00:00.000	NULL	1

Query executed successfully.

DESKTOP-01PFO86 (15.0 RTM) DESKTOP-01PFO86\Myatra... DEMO_DWH_AdventureWorks 00:00:00 1 rows

3:54:07 0:05:53

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DWH_Day02-20230826_091726-Meeting Recording Lec44

Activate Windows 1:11 PM 8/26/2023 +25 Go to Settings < activate Windows

32°C صافي غالباً ENG 1:17 AM 7/28/2024

HA Hossam ... M motazm...

E esraa.ma... A abdelrah...

A alzahraa... E esraam205

D dinamor... A ali.abdull...

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A ayasheil... MM Mohame...

A a.alsaghiir B bassama...

A ahmedn... M Mostafa...

Slowly Changing Dimensions

Type-2 Change

- Add new row with the new information
- Surrogate keys required
- Allows tracking history (versioning)
- Used most often in DW

Product ID	Name	Brand	Serial No.
12345	TV 20"	National	ABC00-X
25984	TV 20"	Panasonic	ABC00-X

Inserted new row

Media Player

DWH Lecture - Day02.pptx - PowerPoint

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Abdelwahed Ashraf AA

Hossam ... motazm... E A esraa.ma... abdelrah... A E alzahraa... esraam205 M A mohame... ali.abdull... L A Lec44 Akmal.el... A MM ayasheil... Mohame... A B a.alsaghiir bassama... A H ahmedn... Hesham...

Click to add notes

3:56:47 de 0:03:13

Type here to search

DWH_Day02-20230826_091726-Meeting Recording Lec44

Activate Windows 1:14 PM 8/26/2023 +25 Go to Settings & activate Windows

32°C صافي غالباً ENG 1:18 AM 7/28/2024

Slowly Changing Dimensions

Type-2 Change

- Add new row with the new information
- Surrogate keys required
- Allows tracking history (versioning)
- Used most often in DW

Product ID	Name	Brand	Serial No.
12345	TV 20"	National	ABC00-X
25984	TV 20"	Panasonic	ABC00-X

Inserted new row

Media Player

DWH Lecture - Day02.pptx - PowerPoint

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Abdelwahed Ashraf AA

Hossam ... motazm... E A esraa.ma... abdelrah... A E alzahraa... esraam205 M A mohame... ali.abdull... L A Lec44 Akmal.el... A MM ayasheil... Mohame... A B a.alsaghiir bassama... A H ahmedn... Hesham...

Click to add notes

3:56:47 de 0:03:13

Type here to search

DWH_Day02-20230826_091726-Meeting Recording Lec44

Activate Windows 1:14 PM 8/26/2023 +25 Go to Settings & activate Windows

32°C صافي غالباً ENG 1:19 AM 7/28/2024

Slowly Changing Dimensions

Type-2 Change

- Add new row with the new information
- Surrogate keys required
- Allows tracking history (versioning)
- Used most often in DW

Product ID	Name	Brand	Serial No.
12345	TV 20"	National	ABC00-X
25984	TV 20"	Panasonic	ABC00-X

Inserted new row

Media Player

DWH Lecture - Day02.pptx - PowerPoint

Search

Abdelwahed Ashraf AA

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Share



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DWH_Day02-20230826_091726-Meeting Recording

Lec44



32°C صافي غالباً

1:21 AM 7/28/2024 ENG

Slowly Changing Dimensions

- Although data in fact table are normally static, data in dimension tables may be changed.
 - A customer may change address during 5 year-period
- Problem known as “Slowly Changing Dimensions” (Kimball, 2002)
- Common changing types:
 - I 0: No change
 - 1: Overwrites value
 - 2: Adds new row
 - I 3: Adds new column (update rows)

The screenshot shows a Microsoft PowerPoint slide titled "Slowly Changing Dimensions". The slide contains a bulleted list explaining the concept. The list includes points about data in fact tables being static, dimension tables being changeable, a customer address change example, the problem's name, common change types (No change, Overwrites value, Adds new row, Adds new column), and a note about update rows. The slide has a blue header bar and a white content area. On the left, there is a vertical list of slide thumbnails. At the bottom, there is a navigation bar with icons for account, search, and other functions. The taskbar at the very bottom shows the file path "DWH_Day02-20230826_091726-Meeting Recording", the date/time "Lec44 3:58:43 de 08/26/2023 1:16 PM", and system status icons.

Media Player

DWH Lecture - Day02.pptx - PowerPoint

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Abdelwahed Ashraf AA

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Schema Types

Click to add notes

3:58:48 de 0:01:12

Type here to search

DWH_Day02-20230826_091726-Meeting Recording Lec44

Activate Windows 1:16 PM 8/26/2023 +25 Go to Settings & activate Windows

32°C صافي غالباً ENG 1:23 AM 7/28/2024

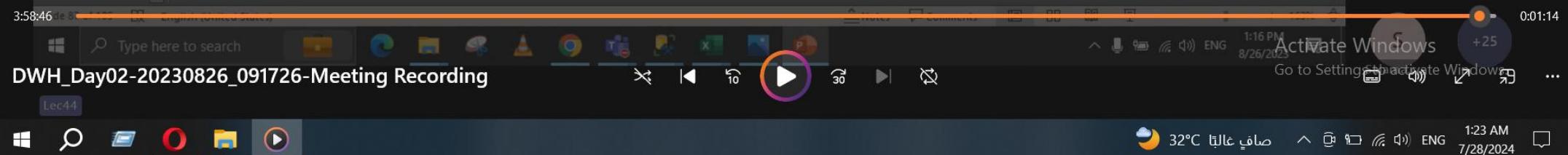
HA Hossam ... M motazm... E esraa.ma... A abdelrah... A alzahraa... E esraam205 M Mostafa... A ali.abdull... L Lec44 A Akmal.el... A ayasheil... MM Mohame... A a.alsaghiir M mohame... A ahmedn... H Hesham...

The screenshot shows a Microsoft PowerPoint presentation titled "DWH Lecture - Day02.pptx". The current slide is titled "Schema Types". The taskbar at the bottom displays the file name "DWH_Day02-20230826_091726-Meeting Recording" and a play button, indicating it's a recorded meeting. System status icons for battery level, signal strength, and temperature (32°C) are also present. On the right side of the slide, there is a list of participant names and initials, each with a colored circular icon: Hossam (HA), motazm... (M), esraa.ma... (E), abdelrah... (A), alzahraa... (A), esraam205 (E), Mostafa... (M), ali.abdull... (A), Lec44 (L), Akmal.el... (A), ayasheil... (A), MM (MM), a.alsaghiir (A), mohame... (M), ahmedn... (A), and Hesham... (H).

Schema Types

- Star Schema.
- Snowflake Schema.
- Fact constellation(Galaxy Schema)

Click to add notes



Slowly Changing Dimensions

Type-3 Change

- Add new column that stores previous value
- Allow user to view new and previous values at the same time

Inserted new column

Product ID	Name	Brand	Previous Brand	Serial No.
12345	TV20"	Panasonic	National	ABC00-X

Media Player

DWH Lecture - Day02.pptx - PowerPoint

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Abdelwahed Ashraf AA

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Hossam ... motazm... esraa.ma... abdelrah... alzahraa... esraam205 amr7670... ali.abdull... Lec44 Akmal.el... A A ayasheil... Mohame... a.alsaghiir mohame... ahmedn... Hesham...

Click to add notes

3:58:57 de 0:01:03

Type here to search

DWH_Day02-20230826_091726-Meeting Recording

Lec44

Activate Windows 1:16 PM 8/26/2023 +24 Go to Settings

32°C ENG 1:24 AM 7/28/2024

Slowly Changing Dimensions

Type-3 Change

- Add new column that stores previous value
- Allow user to view new and previous values at the same time

Inserted new column

Product ID	Name	Brand	Previous Brand	Serial No.
12345	TV20"	Panasonic	National	ABC00-X

Media Player

DWH Lecture - Day02.pptx - PowerPoint

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Abdelwahed Ashraf AA

Hossam ... motazm... esraa.ma... abdelrah... alzahraa... esraam205 amr7670... ali.abdull... Lec44 Akmal.el... ayasheil... Mohame... a.alsaghiir mohame... ahmedn... Hesham...

Click to add notes

3:58:57 de 0:01:03

Type here to search

DWH_Day02-20230826_091726-Meeting Recording

Lec44

Activate Windows 1:16 PM 8/26/2023 +24 Go to Settings

32°C صافي غالباً ENG 1:24 AM 7/28/2024

Slowly Changing Dimensions

Type-2 Change

- Add new row with the new information
- Surrogate keys required
- Allows tracking history (versioning)
- Used most often in DW

Product ID	Name	Brand	Serial No.
12345	TV 20"	National	ABC00-X
25984	TV 20"	Panasonic	ABC00-X

Inserted new row

Media Player

DWH Lecture - Day02.pptx - PowerPoint

File Home Insert Design Transitions Animations Slide Show Review Recording Help Storyboarding Table Design Layout Share

Abdelwahed Ashraf AA

Hossam ... motazm... esraa.ma... abdelrah... alzahraa... esraam205 amrraga... ali.abdull... Lec44 Akmal.el... ayasheil... Mohame... a.alsaghiir Mostafa ... ahmedn... Hesham...

Click to add notes

3:59:32 de 0:00:28

Type here to search

DWH_Day02-20230826_091726-Meeting Recording Lec44

Activate Windows 1:16 PM 8/26/2023 +25 Go to Settings

32°C ENG 1:25 AM 7/28/2024

Slowly Changing Dimensions

Type-2 Change

- Add new row with the new information
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- Allows tracking history (versioning)
- Used most often in DW

Product ID	Name	Brand	Serial No.
12345	TV 20"	National	ABC00-X
25984	TV 20"	Panasonic	ABC00-X

Inserted new row

Click to add notes

0:00:00 4:00:00

DWH_Lecture - Day02.pptx - PowerPoint

Search

Abdelwahed Ashraf AA

File Home Insert Design Transitions Animations Slide Show Review View Recording Help Storyboarding Table Design Layout Share

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Hossam ... motazm...

esraa.ma... abdelrah...

alzahraa... esraam205

amrraga... ali.abdull...

Lec44 Akmal.el...

ayashei... Mohame...

a.alsaghiir MA Mostafa ...

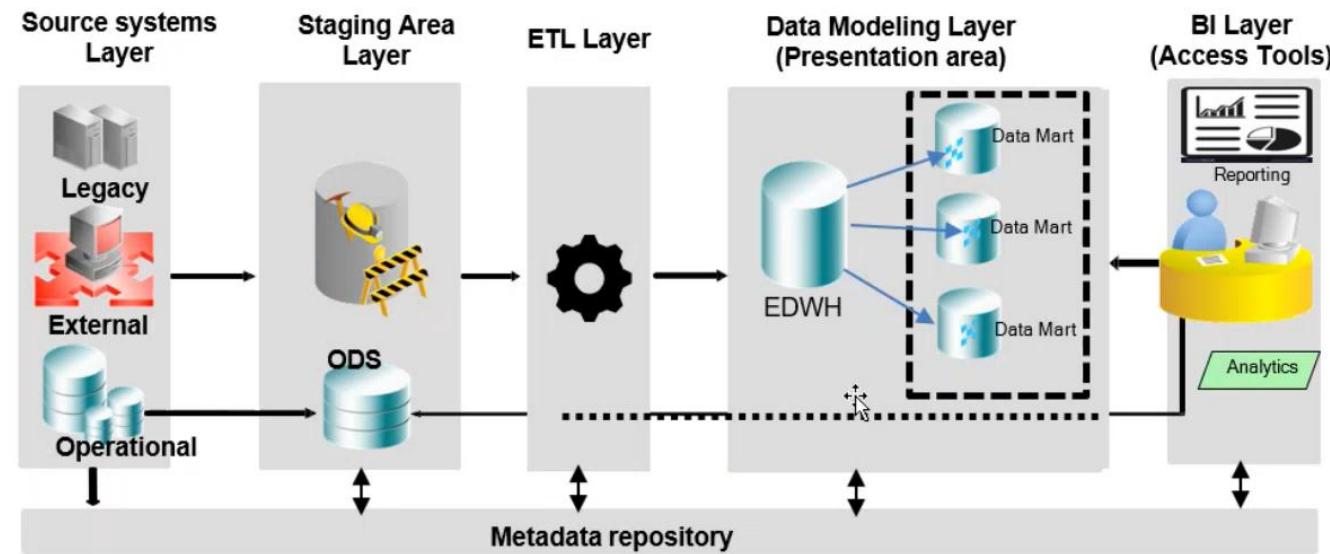
ahmedn... Hesham...

Activate Windows 8/26/2023 1:17 PM ENG +25 Go to Settings > Activate Windows

32°C صافي عالب ENG 7/28/2024 1:25 AM

DWH_Day02-20230826_091726-Meeting Recording Lec44

Data Warehouse Components



DWH Lecture - Day02.pptx - PowerPoint

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Abdelwahed Ashraf AA

31 32 33 34 35 36 37 38 39 40 41 42

31 32 33 34 35 36 37 38 39 40 41 42

0:00:37 Click to add notes

Slide 38 of 105 English (United States)

DWH_Day02-20230826_091726-Meeting Recording

Activate Windows Go to Settings to activate Windows 9:18 AM ENG 8/26/2023 +24 abdelrah...

Lec44

Mouham... Mohame... L S Salama.c... Hesham... Mostafa... melwake... Mohame... رف... mohame... M mohame... M mahmou... A alzahraa... H hebaay... B E bassama... 3:59:23 esraa205

DWH Architecture Layers

- DWH architecture contains the following layers:
 - Source system layer.
 - Extraction layer.
 - Staging Area.
 - Data Modeling.
 - ETL layer.
 - Storage layer.
 - Reporting (UI) layer.
 - Metadata layer.
 - System operations layer.

Click to add notes

0:00:45 de 3:59

English (United States)

3:59:15



Type here to search



Notes

Comments

Transitions

Animations

Slide Show

Review

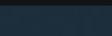
Help

Storyboarding



DWH_Day02-20230826_091726-Meeting Recording

Lec44



35°C

مشمس



ENG

5:23 PM

7/27/2024



X

Activate Windows

Go to Settings > Activate Windows

+24

...

Source System Integration Process

- In some companies, they hire or dedicate a team for this part (business analyst, system analyst, data analyst, or demand team).
- Before we start, we need to document all the communications into any format.
 - Word, Excel sheet or any other tool.
 - Make the discussion and put comments to make the history available always.
 - We need to clarify all the tasks and what is the expected output,
(analysis means to document data structure, format, column names, etc.).

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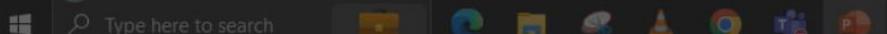
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- 34
- 35
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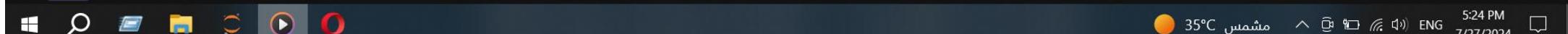
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Source System Integration Process

- Requirements gathering.
- Identify the stakeholders (Data owner(s)).
- Data Analysis includes but not only (format, latency, and column definitions).

- Check the source system access and perform connectivity assessment.
- Initiate the technical discussion about the best way to ingest the data.
- Data Ingestion method and format.
- Sign or confirmation for every point between the stakeholders.
- This layer deliver a data analysis (Source system interface) document.

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Extraction Layer

- In some companies, they hire or dedicate a team for this part (extraction or ingestion team), but in other companies, it is part of the data engineering team.
- This layer takes the output analysis and decisions from the previous layer (source system analysis) and implement the extraction (quality from the previous team output highly affect this team).
- There is a lot of consideration this team needs to take care of or deal with, but we can summarize it in the following:
 - Data latency analysis as it affects the tool and the methodology (stream or batch).
 - Data extraction method (push or pull).
 - Data size and format compared with the available resources for this project.
- **This layer output is a minimal data cleansing (no transformation) into the staging/landing layer.**

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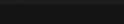
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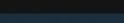
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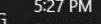
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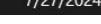
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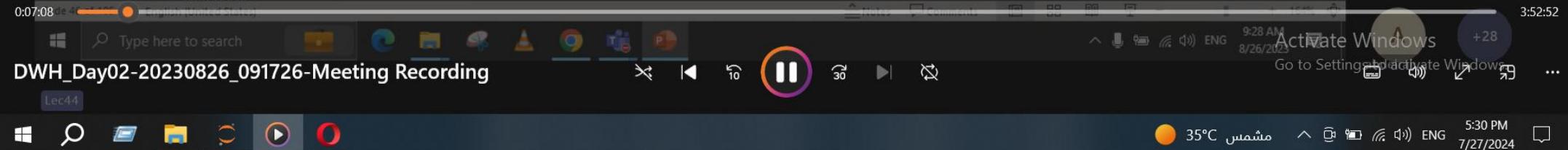
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Staging Layer

- The main purpose of the Staging Layer is to load source data into the DWH environment for further processing (the process from source-to-staging).
- In other words, the Staging Layer is responsible for the physical movement of data from the source platform onto the DWH platform.
- all required data must be available before data can be integrated into the Data Warehouse.
- All the ETL layers are working on top of this layer.
- The decision of the storage type is based on the use case and the data.

A staging area is mainly required in a Data Warehousing Architecture for timing reasons. In short, all required data must be available before data can be integrated into the Data Warehouse.



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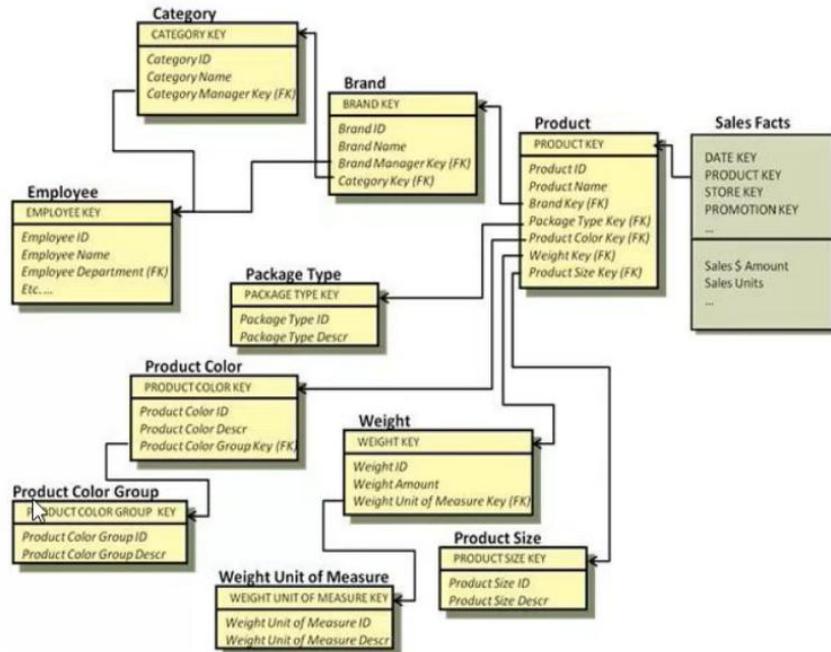
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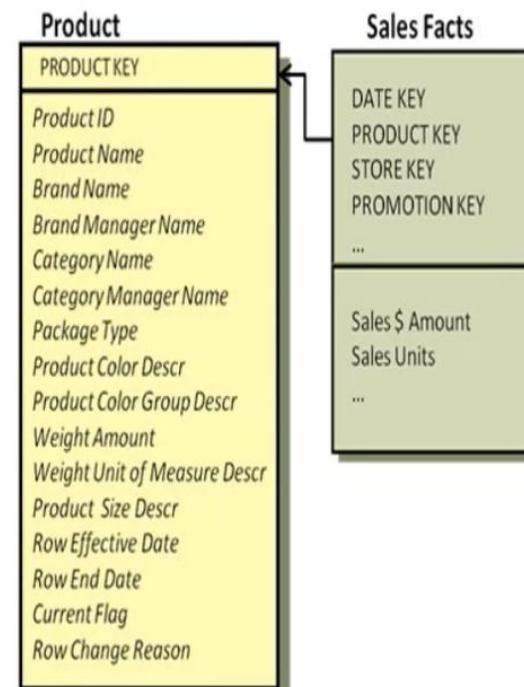
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Relational Vs Dimensional Models



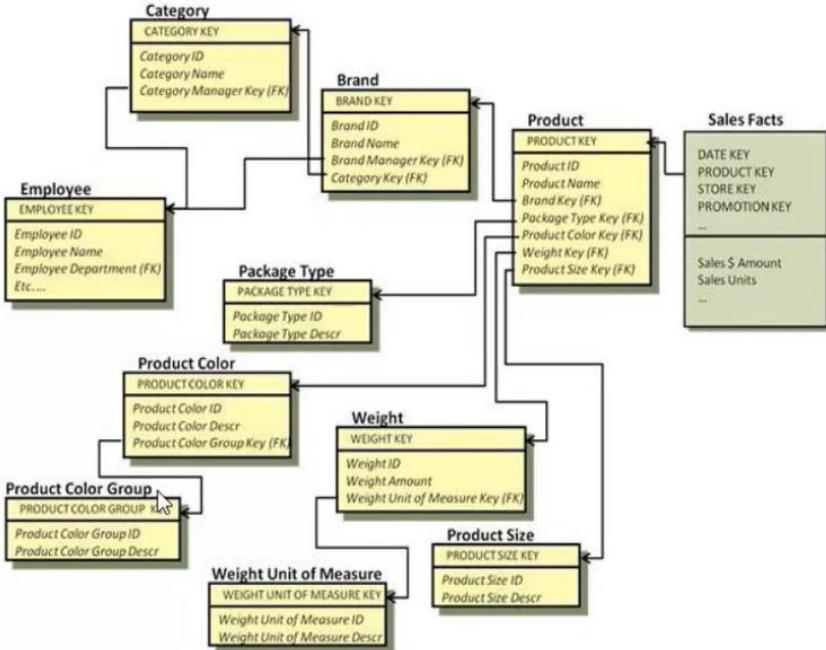
Relational Model



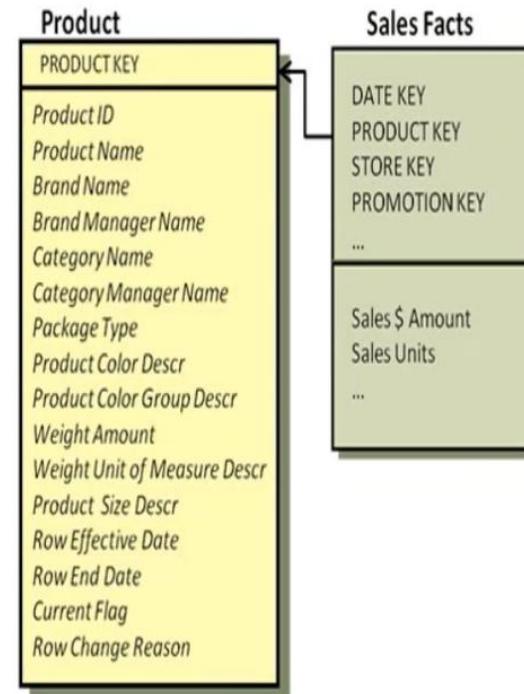
Dimensional Model



Relational Vs Dimensional Models

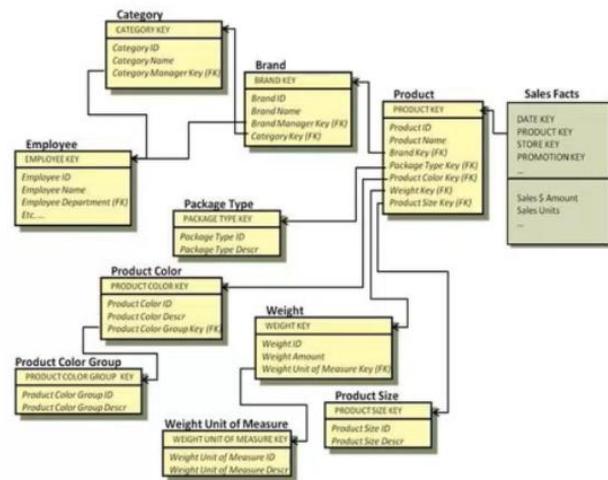


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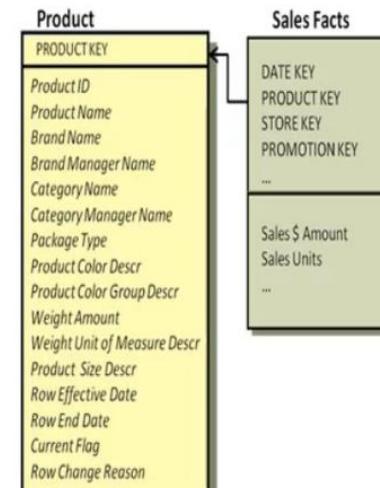


Dimensional Model

Relational Vs Dimensional Models



Relational Model



Dimensional Model

Dimensional Modeling

- **Dimensional Modeling :**
a technique for designing data warehouses that organizes data into facts and dimensions, a retrieval-based system that supports high-volume query access.
- **Schema:** a schema is a logical structure that defines how the facts and dimensions are related and stored in a database
- **Three common types of schemas in dimensional modeling:**
- star schema, snowflake schema, Fact Constellation Schema(Galaxy Schema).

Dimensional Modeling

- Dimensional Modeling :

- Fact tables

- Dimensions(FK)
 - Facts(Numeric /Measure) (Agg)

- Dimension tables

- Attributes

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