How to create a database view in SAP ABAP

This guide shows you how to create a database view in SAP ABAP by joining an order header table and an order item table in the ABAP Dictionary. You define the view, set up the join conditions, select fields, and then save, check, and activate the view. You then create a projection view and a database view on a single table, and compare the two.

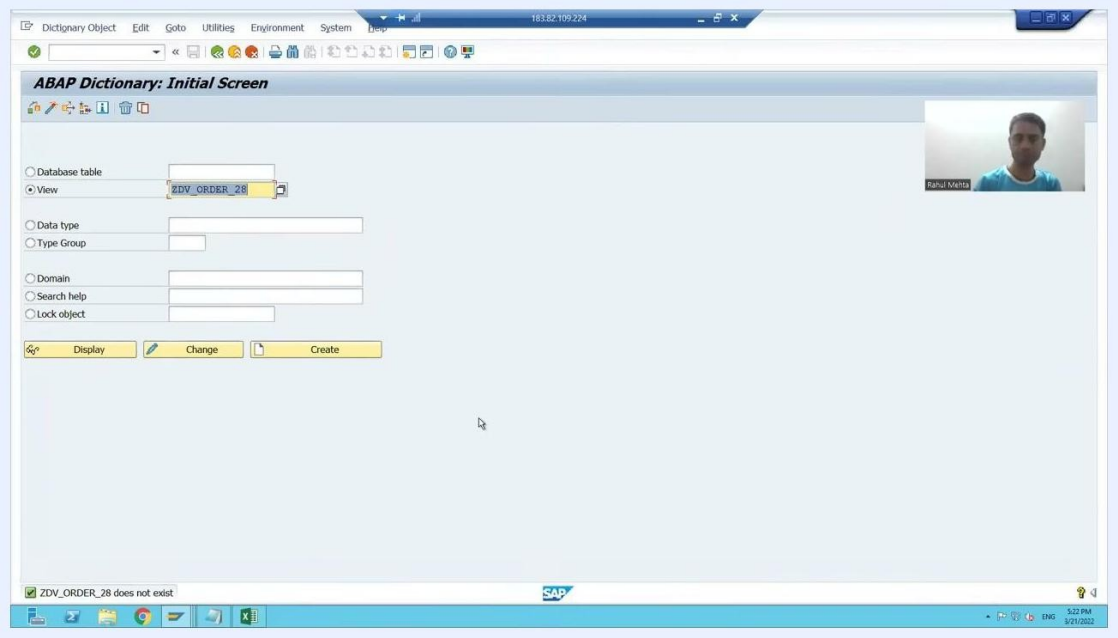
Prerequisites

- Access to SAP GUI and the ABAP Dictionary.
- An order header table (ZORDH_28) and an order item table (ZORDI_28) with a primary-foreign key relationship between them.
- The exercise spreadsheet that lists the fields to include in each view.

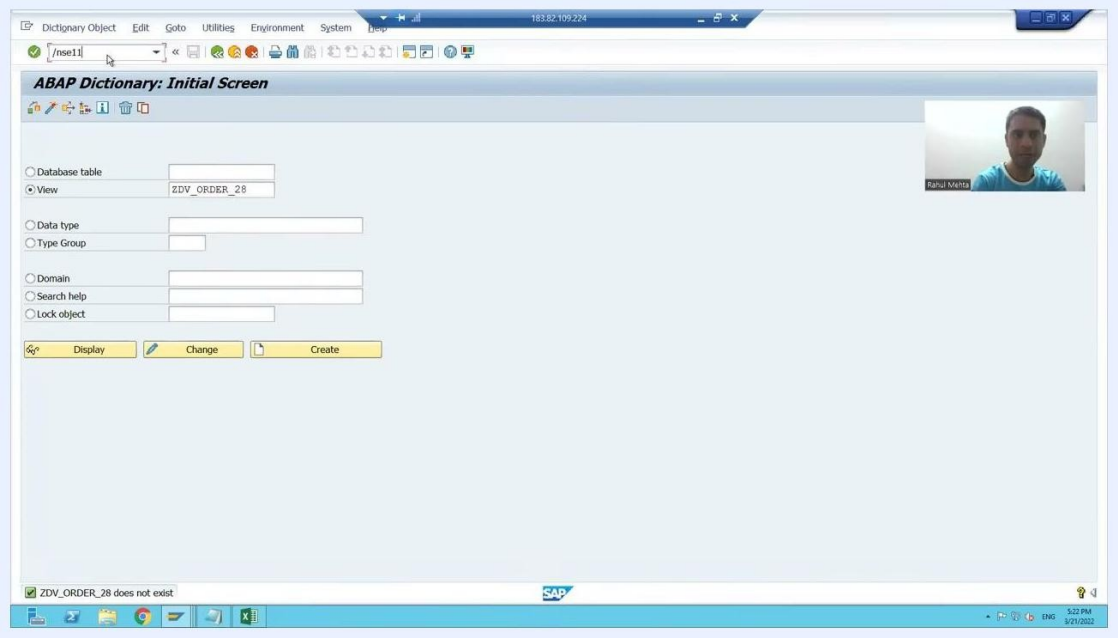
Create the database view

Step 1: Open the ABAP Dictionary initial screen

Launch SAP GUI and go to the ABAP Dictionary. The **ABAP Dictionary: Initial Screen** shows options for Database table, View, Data type, Type Group, Domain, Search help, and Lock object. It also has **Display**, **Change**, and **Create** buttons.



The ABAP Dictionary initial screen with the View option selected and ZDV_ORDER_28 entered



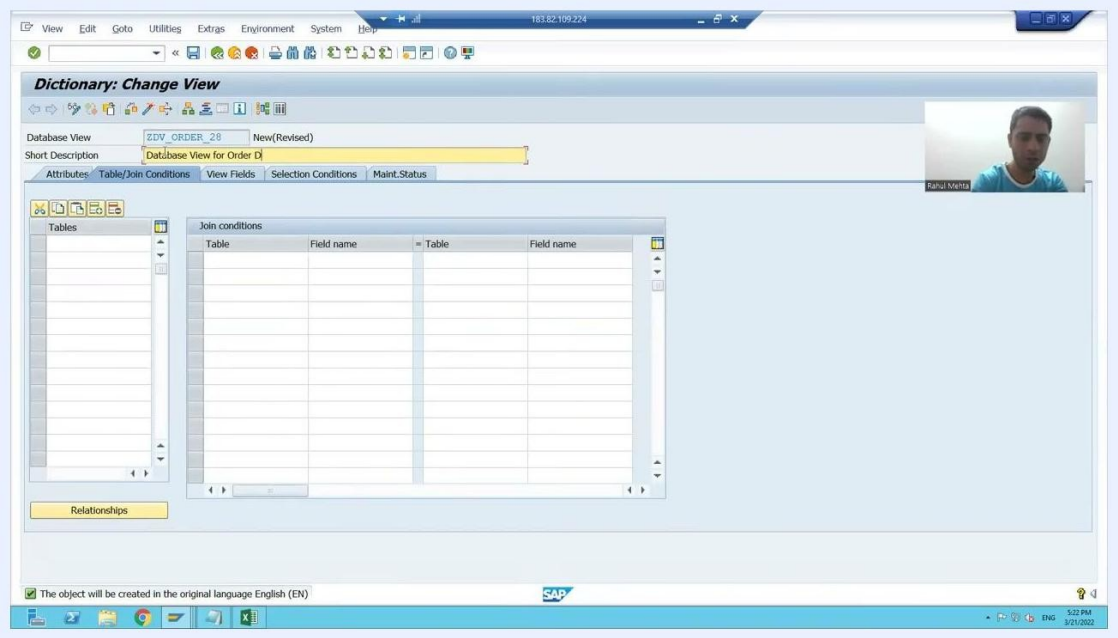
The command field with /nse11 entered, the View radio button selected, and ZDV_ORDER_28 filled in

Step 2: Enter the transaction command

In the command field at the top, enter /nse11 and press Enter to open the ABAP Dictionary initial screen.

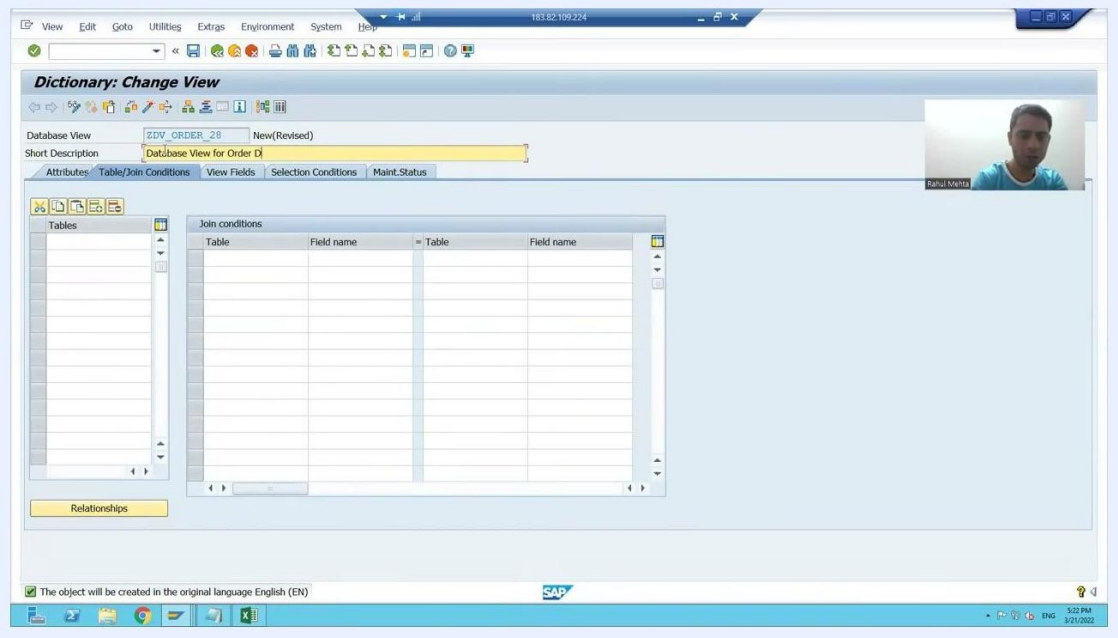
Step 3: Select View, name it, and click Create

Select the **View** radio button. In the adjacent field, enter the name of your database view, ZDV_ORDER_28. A dropdown may show previously used view names for reference.



The dropdown of previous view names, with the View radio button selected and ZDV_ORDER_28 entered

Then click the yellow **Create** button at the bottom right of the section.



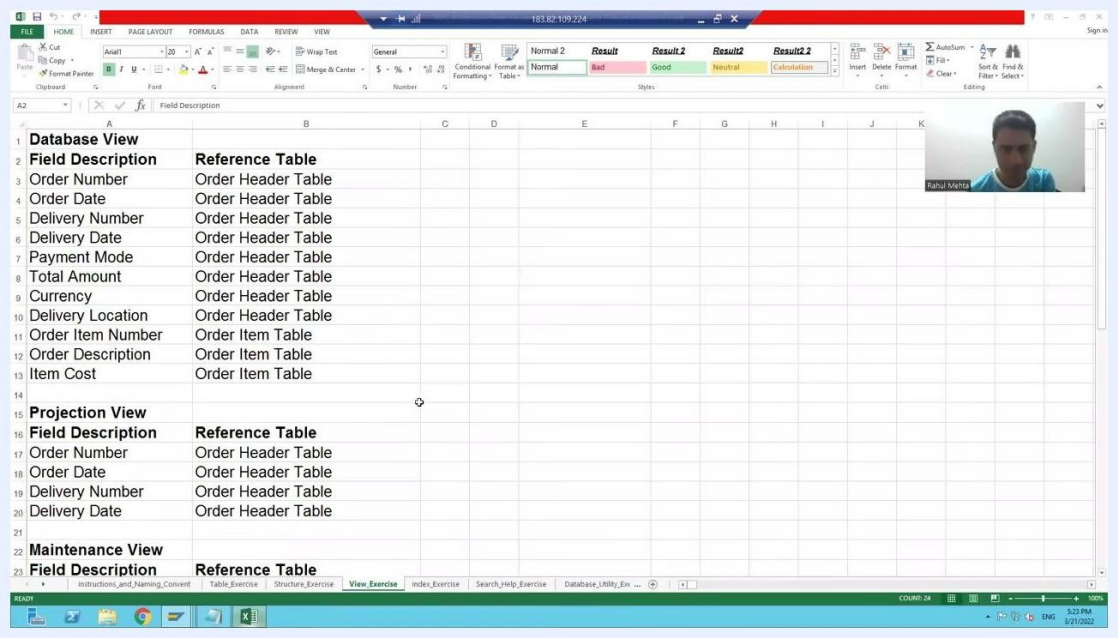
The Create button highlighted with the View radio button selected and ZDV_ORDER_28 entered

Step 4: Choose the view type

A dialog lists four view types. Select **Database View**.

Step 5: Enter a short description and review the required fields

In the **Short Description** field, enter Database View for Order Details. The screen now shows these tabs:



	A	B
1	**Database View**	
2	**Field Description**	**Reference Table**
3	Order Number	Order Header Table
4	Order Date	Order Header Table
5	Delivery Number	Order Header Table
6	Delivery Date	Order Header Table
7	Payment Mode	Order Header Table
8	Total Amount	Order Header Table
9	Currency	Order Header Table
10	Delivery Location	Order Header Table
11	Order Item Number	Order Item Table
12	Order Description	Order Item Table
13	Item Cost	Order Item Table
14		
15	**Projection View**	
16	**Field Description**	**Reference Table**
17	Order Number	Order Header Table
18	Order Date	Order Header Table
19	Delivery Number	Order Header Table
20	Delivery Date	Order Header Table
21		
22	**Maintenance View**	
23	**Field Description**	**Reference Table**

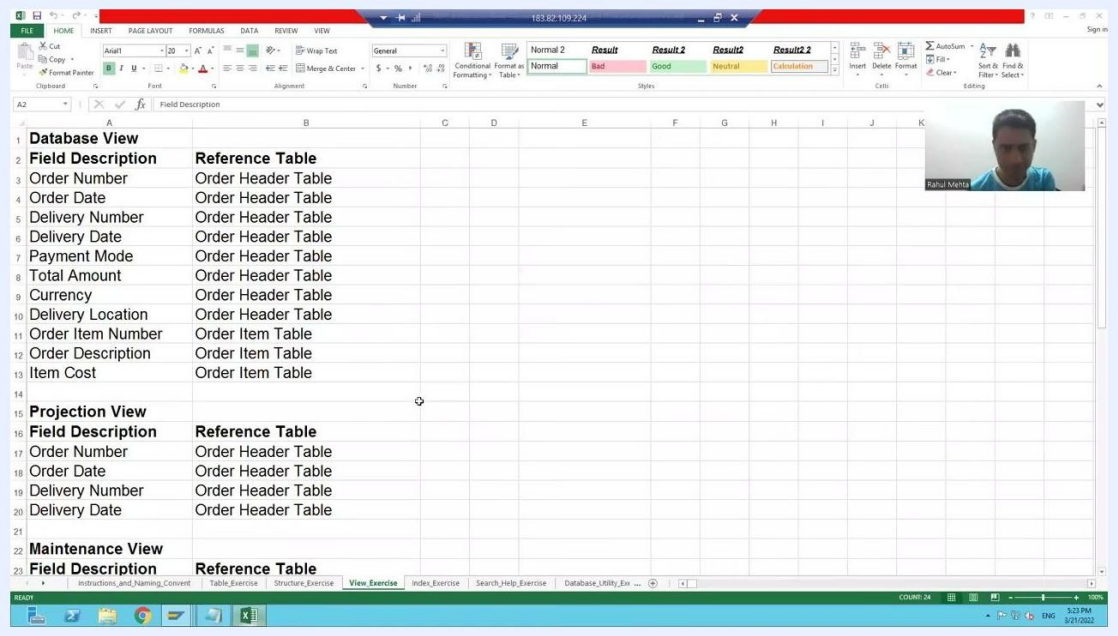
The Dictionary: Change View screen with the short description entered

- **Attributes**
- **Table/Join Conditions**
- **View Fields**
- **Selection Conditions**
- **Maint. Status**

Then open the exercise spreadsheet to see which fields the view needs:

- **Order header table fields:** Order Number, Order Date, Delivery Number, Delivery Date, Payment Mode, Total Amount, Currency, Delivery Location.

- **Order item table fields:** Order Item Number, Order Description, Item Cost.

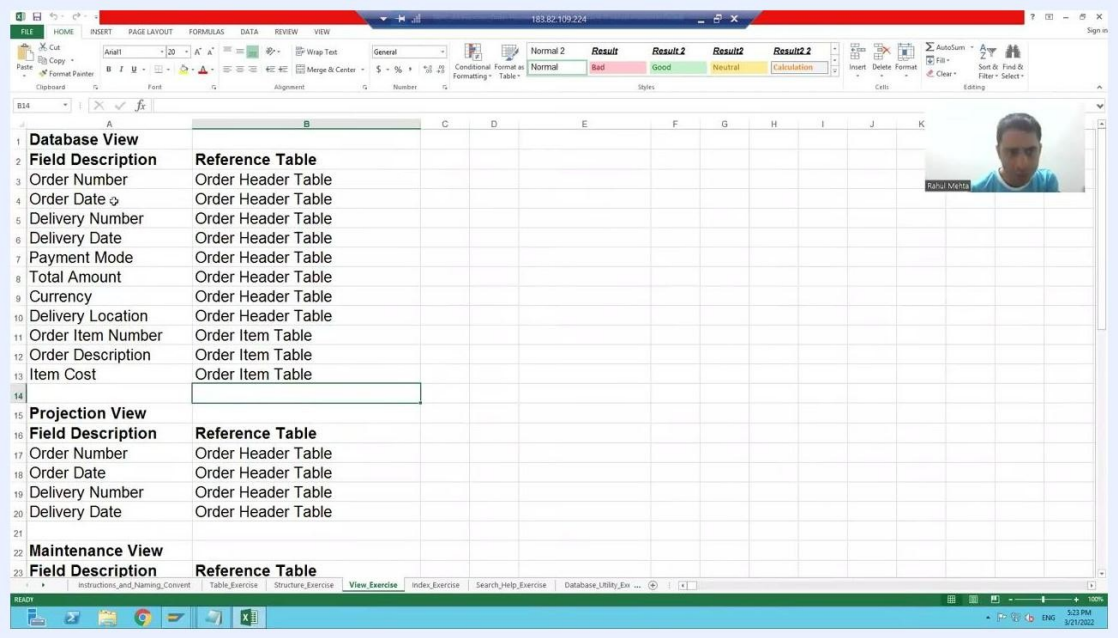


	A	B
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3	Order Number	Order Header Table
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22	**Maintenance View**	
23	**Field Description**	**Reference Table**

A spreadsheet listing the field descriptions and reference tables for the database view

Step 6: Enter the order header table

In the **Tables** section on the left of the **Dictionary: Change View** screen, enter the name of your order header table, for example ZORDH_28. This table is the primary source for the view.



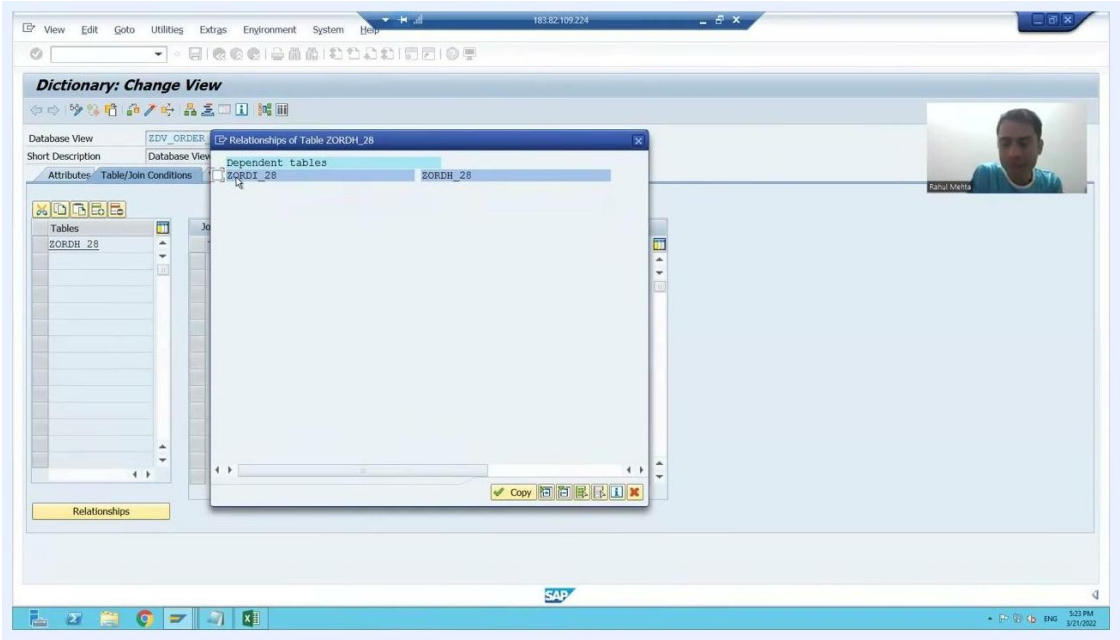
	A	B
1	**Database View**	
2	**Field Description**	**Reference Table**
3	Order Number	Order Header Table
4	Order Date	Order Header Table
5	Delivery Number	Order Header Table
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22	**Maintenance View**	
23	**Field Description**	**Reference Table**

The order header table ZORDH_28 entered in the Tables section

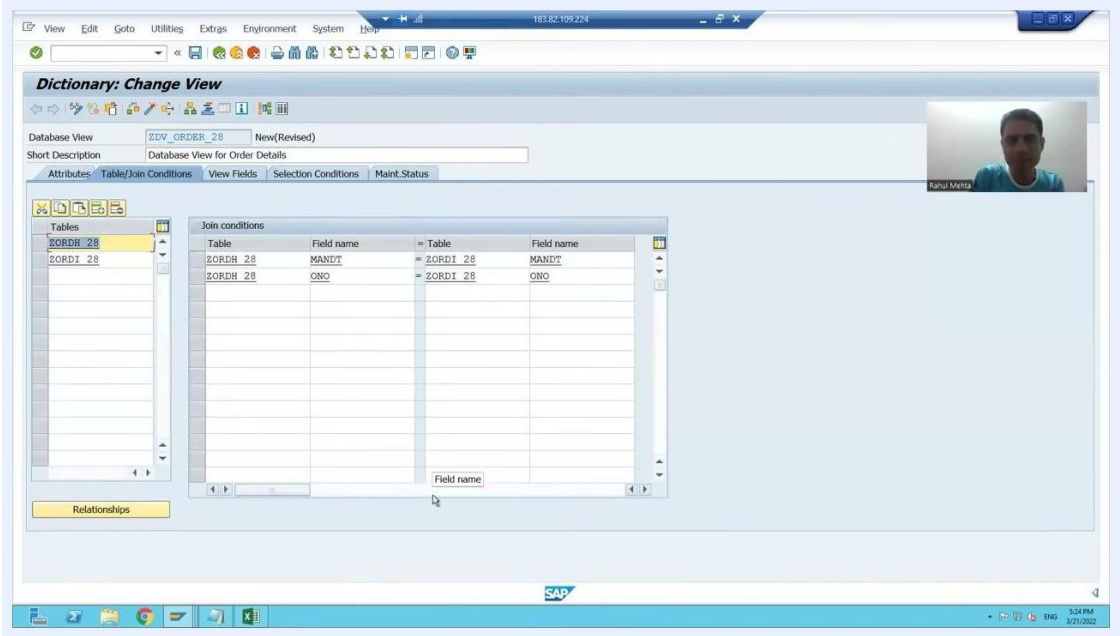
Step 7: Open the relationships dialog

Click the **Relationships** button below the **Tables** section to define the join between your tables.

The **Relationships of Table ZORDH_28** dialog appears. It lists ZORDI_28, the order item table, under **Dependent tables**. SAP shows it automatically because a primary-foreign key relationship exists between the two tables. The header table is the independent (primary key) table, and the item table is the dependent table.



The Relationships dialog showing ZORDI_28 as the dependent table of ZORDH_28



The dependent table ZORDI_28 selected in the Relationships dialog

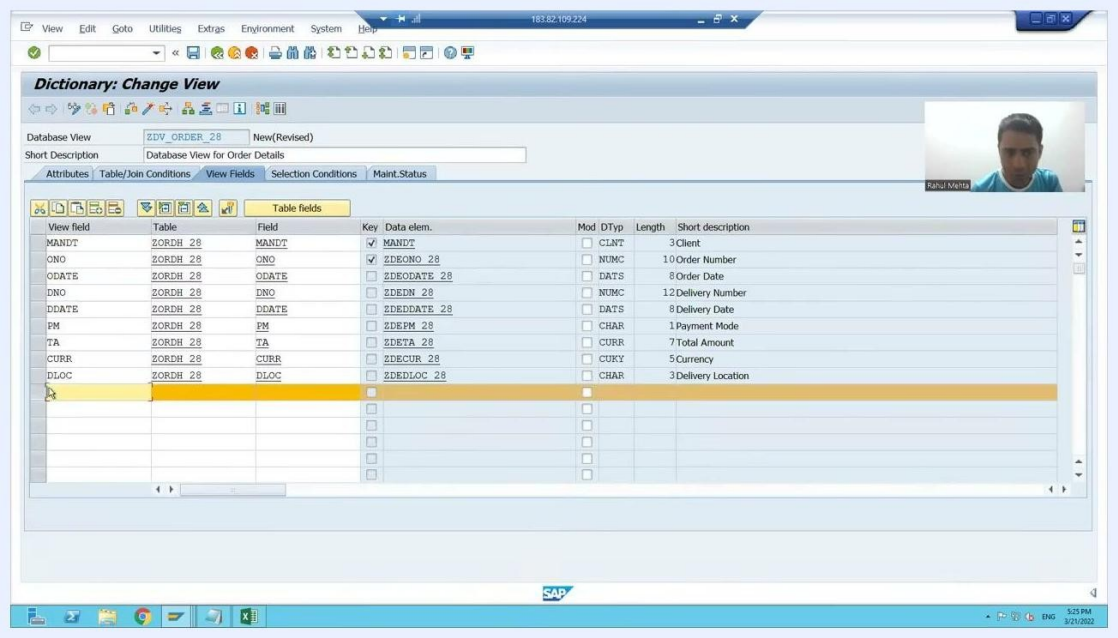
Step 8: Select the dependent table

In the dialog, click the row for the dependent table ZORDI_28 to select it.

Step 9: Copy the relationship and review the join conditions

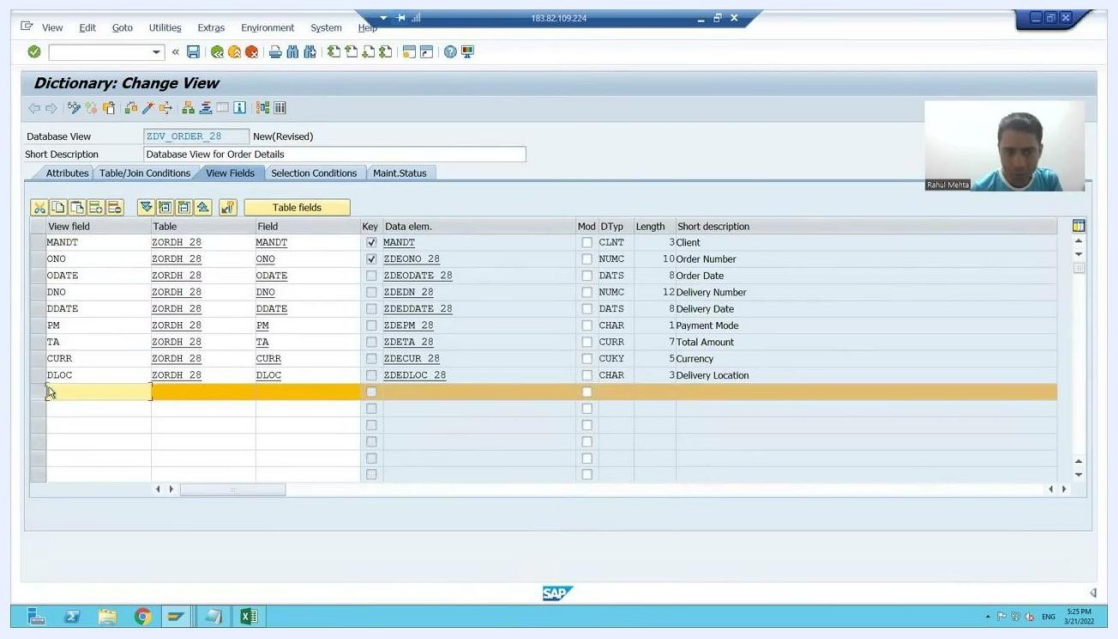
Click the yellow **Copy** button at the bottom of the dialog. SAP generates the join conditions automatically:

- ZORDH_28.MANDT = ZORDI_28.MANDT
- ZORDH_28.ONO = ZORDI_28.ONO



The Copy button in the Relationships dialog, with the generated join conditions

The conditions now appear in the **Join conditions** section of the **Dictionary: Change View** screen. Confirm that the join uses the client (MANDT) and order number (ONO) fields.



The join conditions between ZORDH_28 and ZORDI_28 on the Change View screen

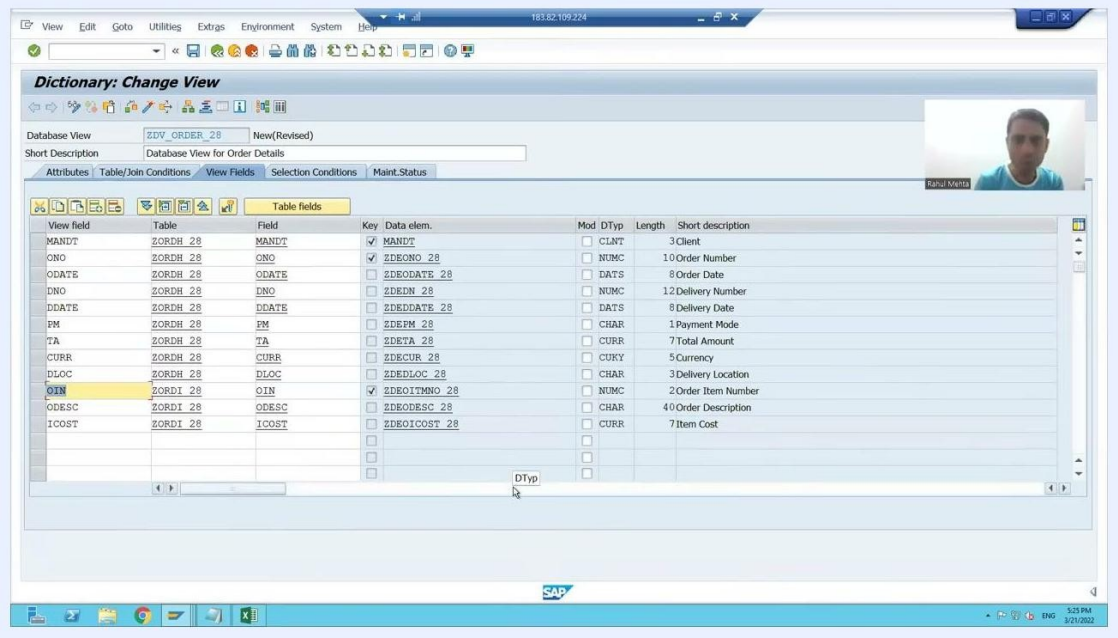
Select fields for the database view

Step 10: Select fields from the header and item tables

Click the **View Fields** tab. In the **Table fields** section, select all required columns from the header table (ZORDH_28):

- MANDT (Client)
- ONO (Order Number)
- ODATE (Order Date)
- DNO (Delivery Number)
- DDATE (Delivery Date)
- PM (Payment Mode)
- TA (Total Amount)
- CURR (Currency)

- DLOC (Delivery Location)



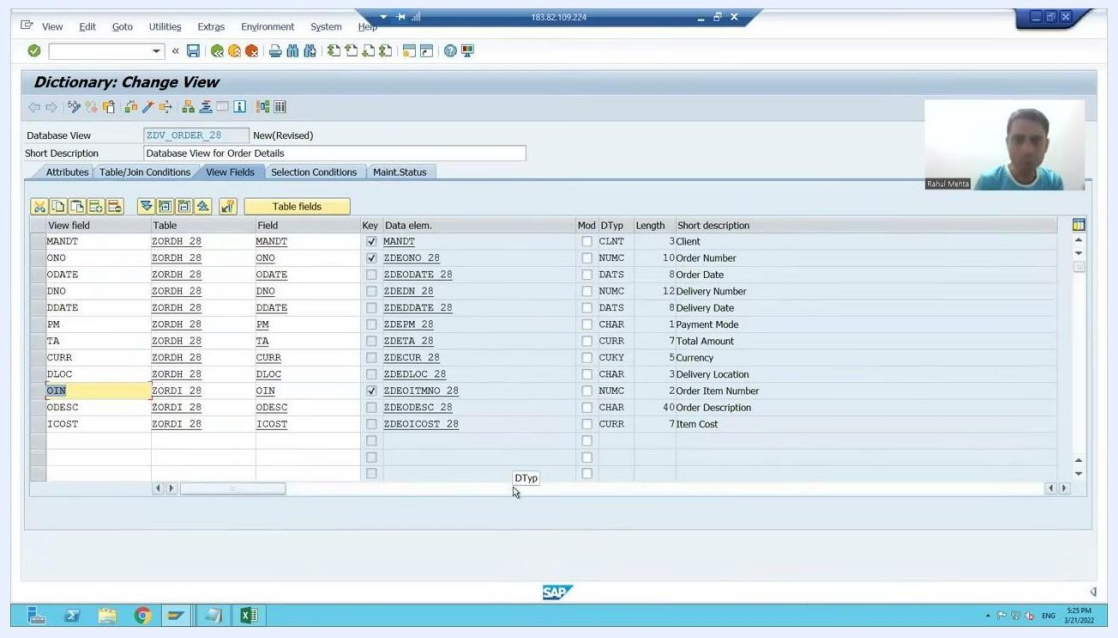
All required fields from ZORDH_28 selected in the Table fields section

These fields are now listed in the view field table.

Next, open the field selection dialog for the item table (ZORDI_28) and select these fields:

- OIN (Order Item Number)
- ODESC (Order Description)

- ICOST (Item Cost)



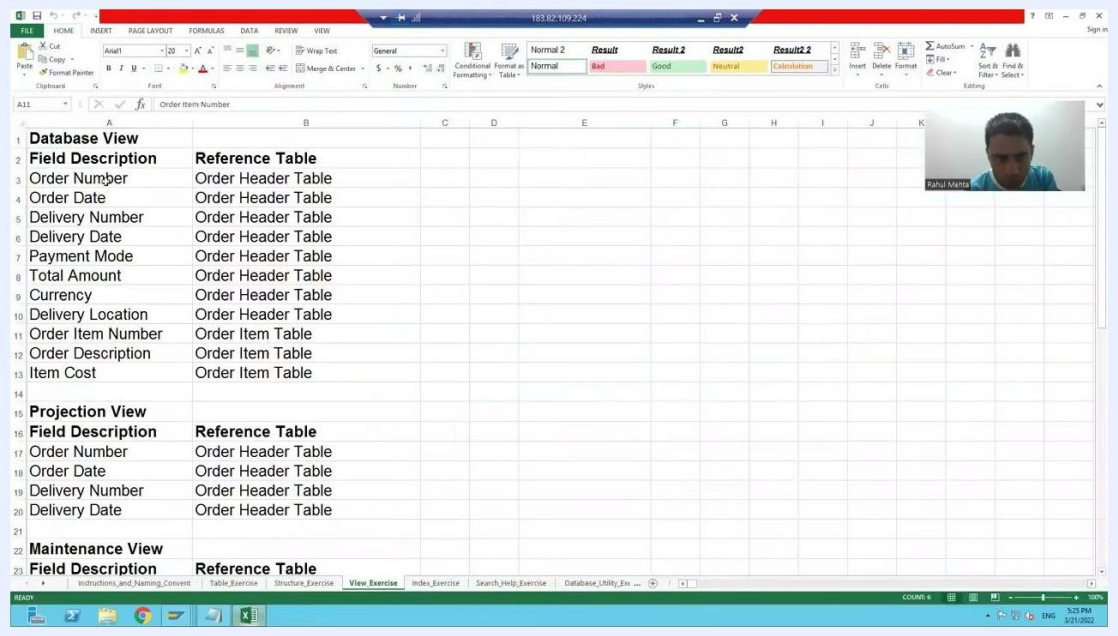
The field selection dialog for ZORDI_28 with OIN, ODESC, and ICOST selected

Do not select ONO again, because the header table already provides it. Click **Copy** to add the fields to your view.

Step 11: Review the fields, then save, check, and activate the view

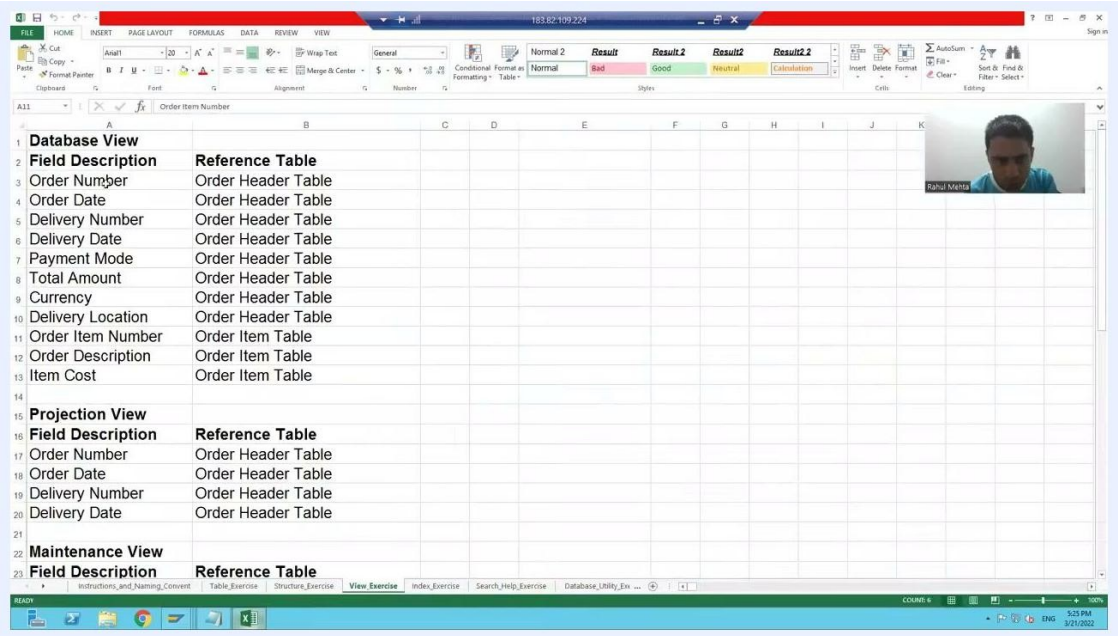
Confirm that the view contains the nine header table fields and the three item table fields, and that no field is duplicated. Verify that MANDT (Client) is included. Do not add "MA" and "DT" separately, because MANDT already represents the client number.

Click the **Save** icon. When prompted, save the view as a local object if you are not transporting it to another system.



The Change View screen with the fields ready to be saved as a local object

Click the **Check** button to run the syntax check, and make sure there are no errors or warnings. Then click **Activate** (or press Ctrl+F3) and wait for confirmation that activation succeeded.

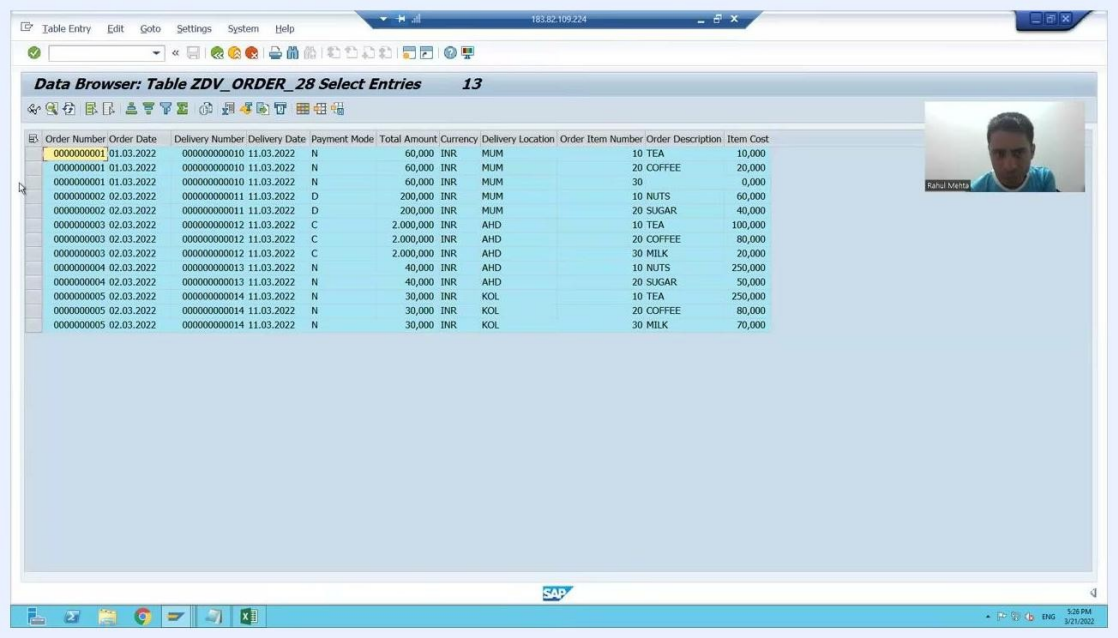


The Change View screen with the Activate button highlighted

Step 12: Display the contents of the view

Click the **Contents** button to open the Data Browser for your view, and execute the view. The output combines data from both tables:

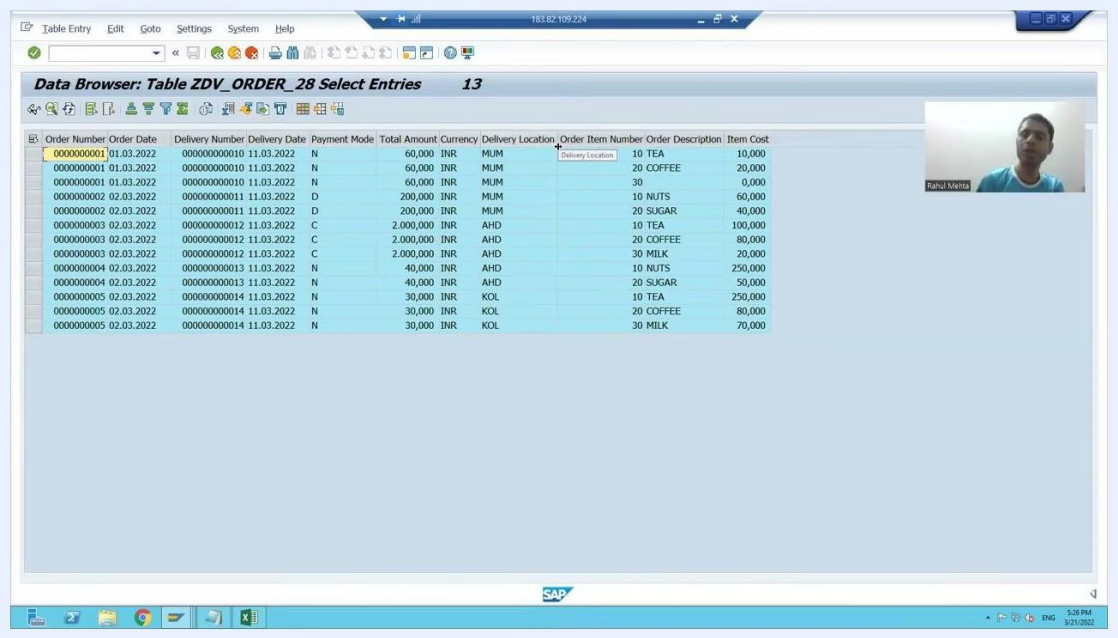
- Columns up to "Delivery Location" come from the order header table.
- The last three columns ("Order Item Number," "Order Description," and "Item Cost") come from the order item table.



The Data Browser showing the combined results from both tables in the database view

Step 13: Verify the combined data

Confirm that the view shows data from both tables in one result set, and that each row has the correct values for all selected fields. Without the view, you would have to check each table individually.

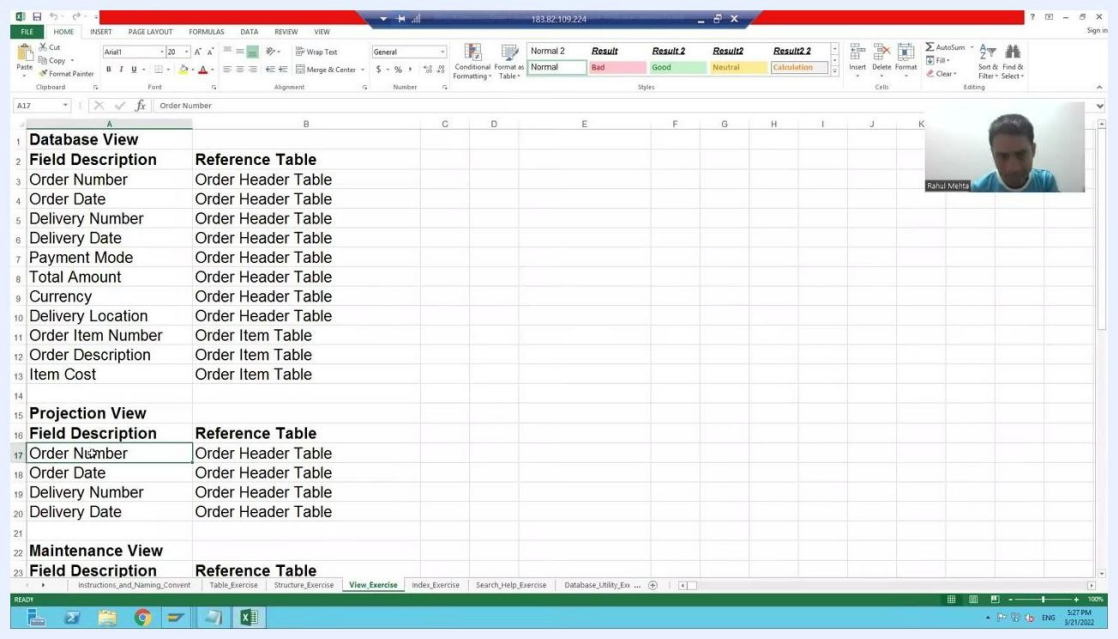


The Data Browser showing the unified order header and item data

Create a projection view

Step 14: Review the requirements and inspect the table entries

Open the Excel sheet that describes the database view, projection view, and maintenance view, and note the fields and reference tables for each. For the projection view, include only these fields:

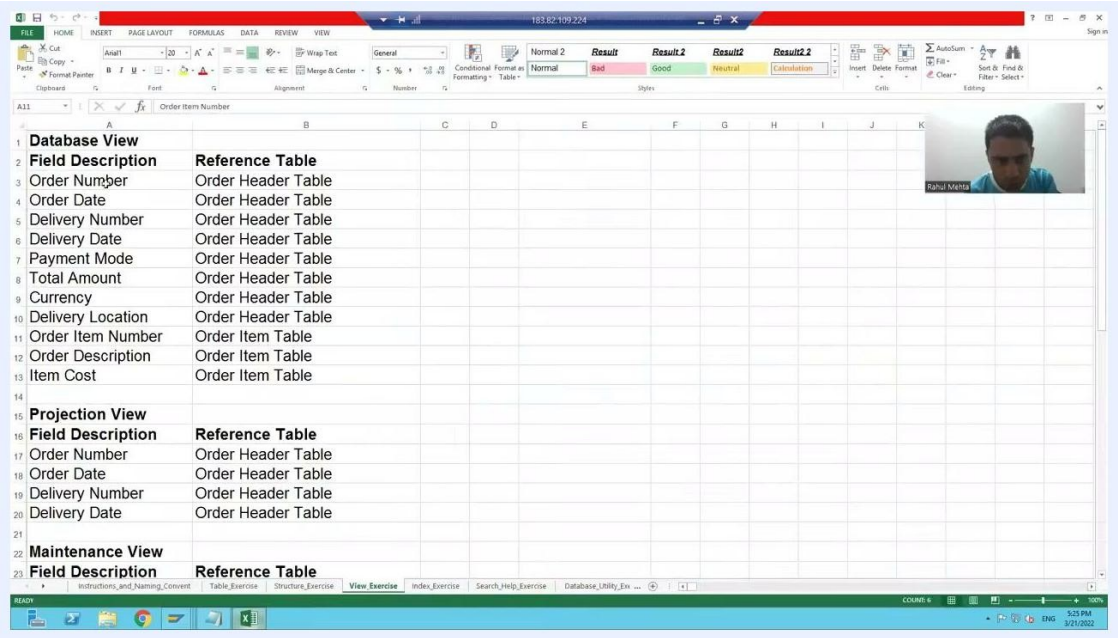


	A	B
1	**Database View**	
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16	**Field Description**	**Reference Table**
17	Order Number	Order Header Table
18	Order Date	Order Header Table
19	Delivery Number	Order Header Table
20	Delivery Date	Order Header Table
21		
22	**Maintenance View**	
23	**Field Description**	**Reference Table**

An Excel sheet showing the field mappings for the database, projection, and maintenance views

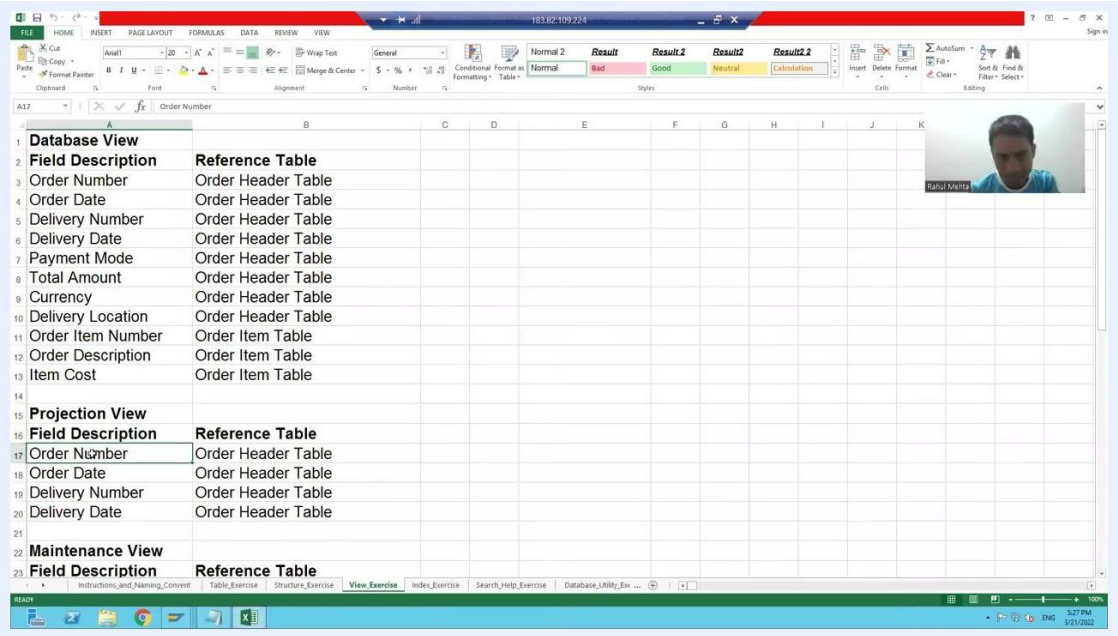
- Order Number
- Order Date
- Delivery Number
- Delivery Date

Then open the Data Browser for the relevant table (for example, ZDV_ORDER_28) and review the entries. The columns are Order Number, Order Date, Delivery Number, Delivery Date, Payment Mode, Total Amount, Currency, Delivery Location, Order Item Number, Order Description, and Item Cost.



	A	B
1	**Database View**	
2	**Field Description**	**Reference Table**
3	Order Number	Order Header Table
4	Order Date	Order Header Table
5	Delivery Number	Order Header Table
6	Delivery Date	Order Header Table
7	Payment Mode	Order Header Table
8	Total Amount	Order Header Table
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11	Order Item Number	Order Item Table
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21		
22	**Maintenance View**	
23	**Field Description**	**Reference Table**

The Change View screen showing all selected fields from both tables with their data elements, types, and descriptions

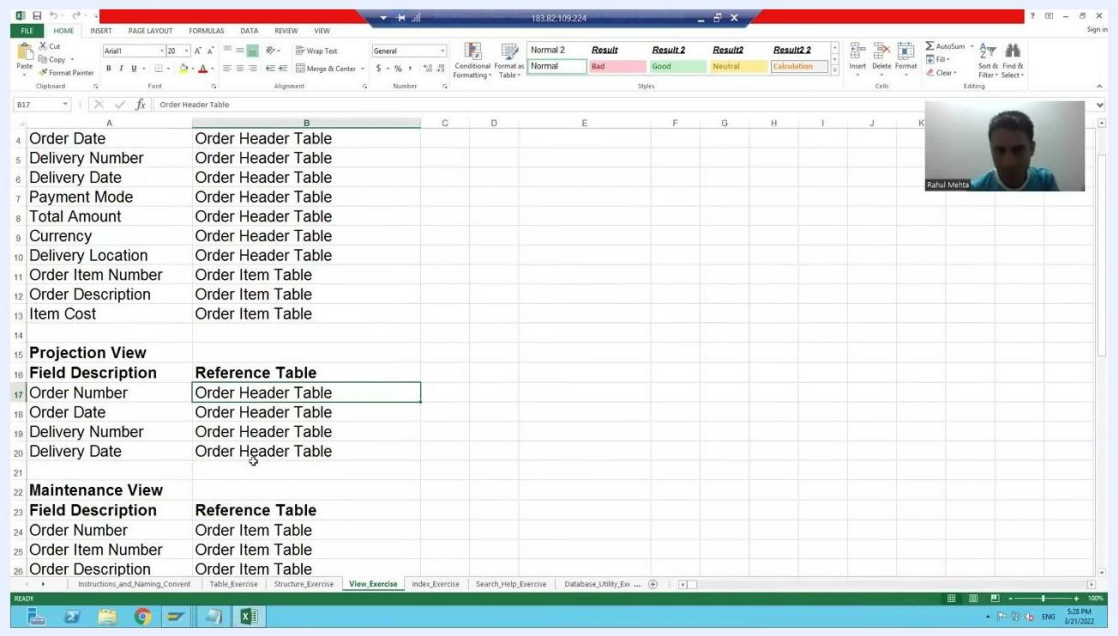


	A	B
1	**Database View**	
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20	Delivery Date	Order Header Table
21		
22	**Maintenance View**	
23	**Field Description**	**Reference Table**

The SAP Data Browser displaying table ZDV_ORDER_28 with sample order data

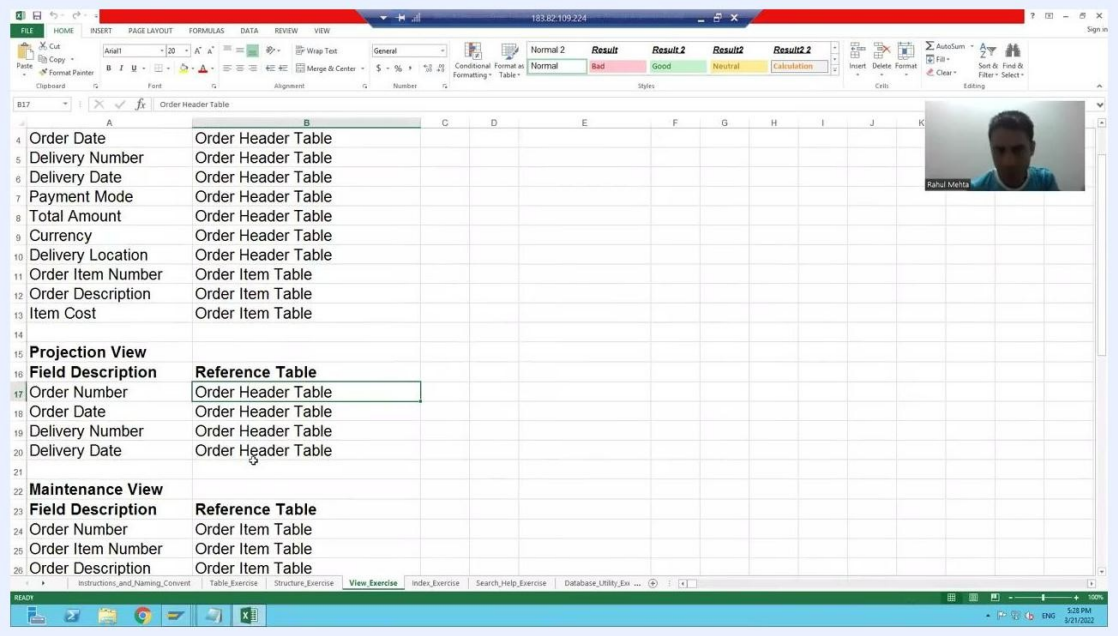
Step 15: Name the projection view, set the basis table, and select fields

Open the **Dictionary: Change View** screen and enter a name for the projection view, for example ZPV_ORDER_28. Enter a short description such as Projection View for Order Details. Make sure the **Basis Table** field is checked, which means a single table is the source.



The Change View screen with the projection view name and description entered

In the **Basis Table** field, enter your order header table, for example ZORDH_28.

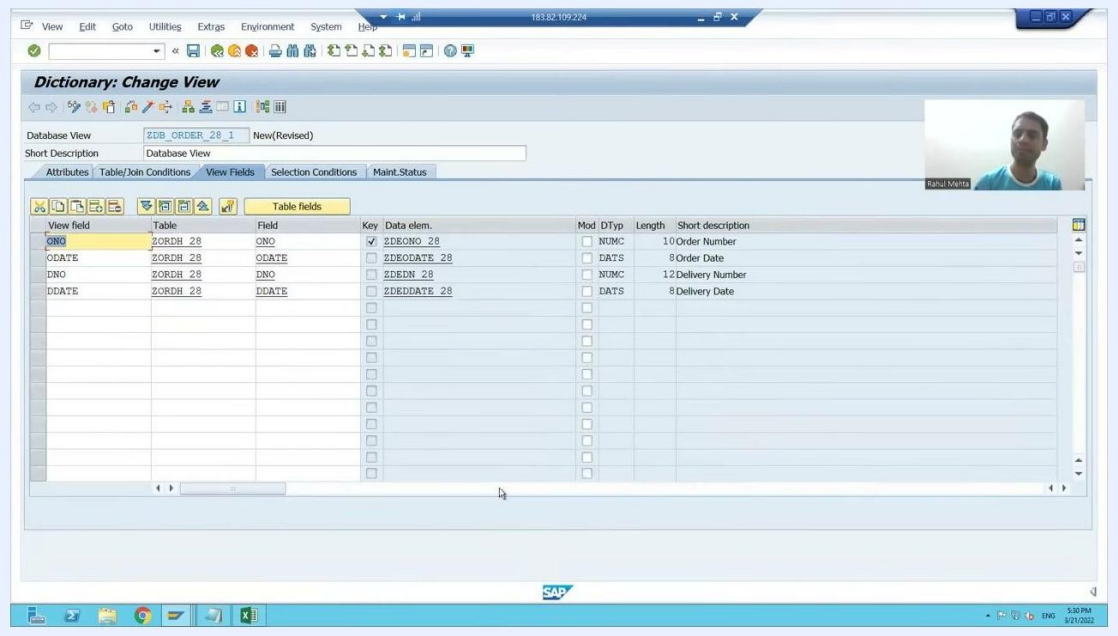


The Change View screen with the basis table specified and ready for field selection

Click the **Table fields** button. In the **Field Selection from Table** window, select only these columns:

- Order Number (ONO)
- Order Date (ODATE)
- Delivery Number (DNO)

- Delivery Date (DDATE)

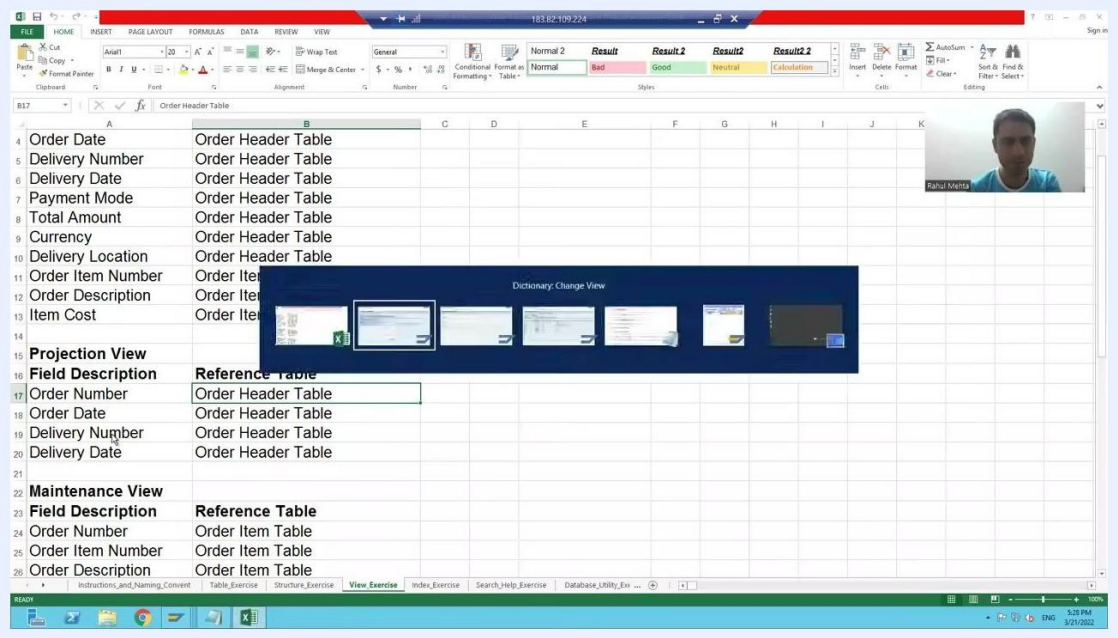


The Change View screen with the Table fields button highlighted and an empty view fields list

Click **Copy** to confirm.

Step 16: Verify and activate the projection view

Check that the **View fields** section contains only ONO, ODATE, DNO, and DDATE, and that their data elements, types, and descriptions are correct. Then activate the projection view.



The Change View screen showing the finalized projection view fields

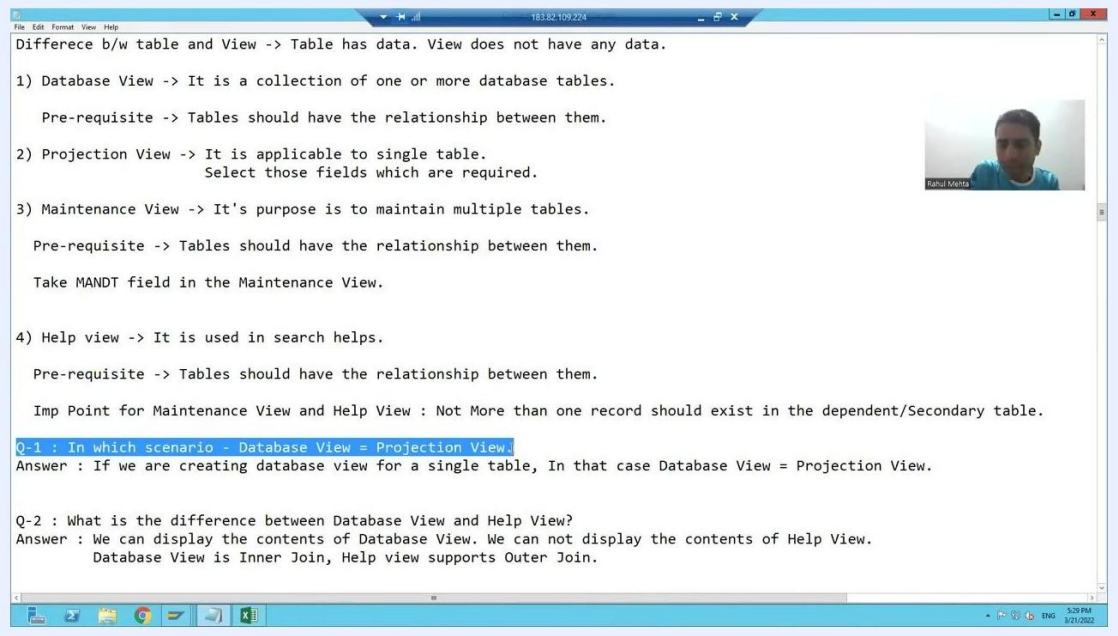
Compare view types and create a database view for a single table

Step 17: Review the differences between SAP views and start a single-table database view

Review the reference notes on the differences between SAP views:

- **Database View:** A collection of one or more database tables. The tables must have relationships.
- **Projection View:** Applies to a single table. You select only the fields you need.
- **Maintenance View:** Maintains multiple tables. The tables must have relationships.

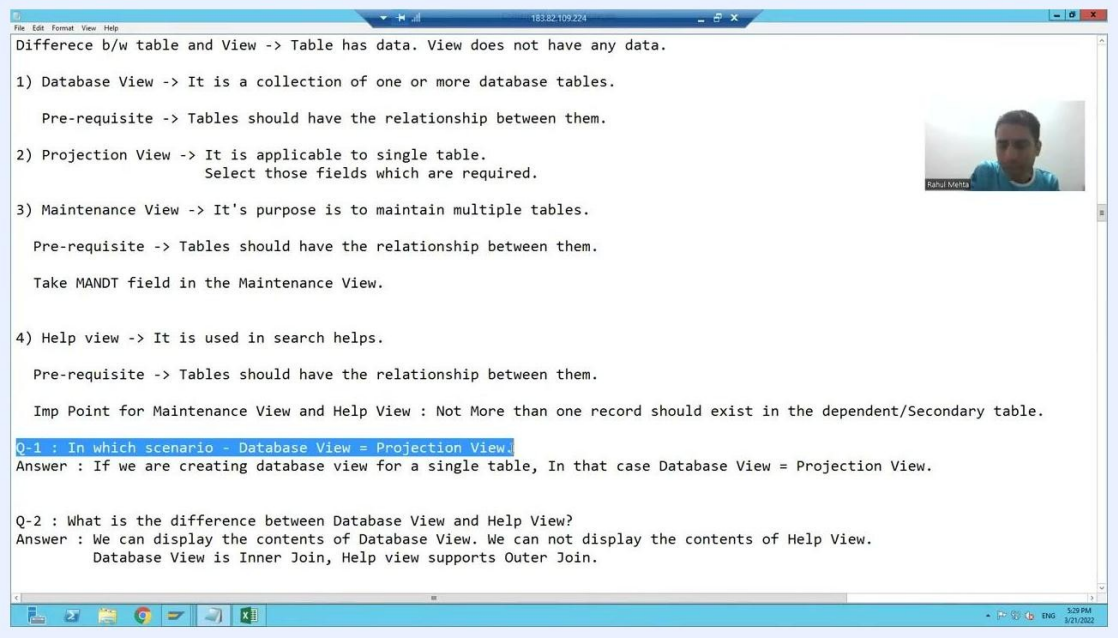
- **Help View:** Used in search helps. The tables must have relationships.



A text window showing the SAP view definitions, prerequisites, and a Q&A about when a database view equals a projection view

If you create a database view for a single table, it is functionally equivalent to a projection view.

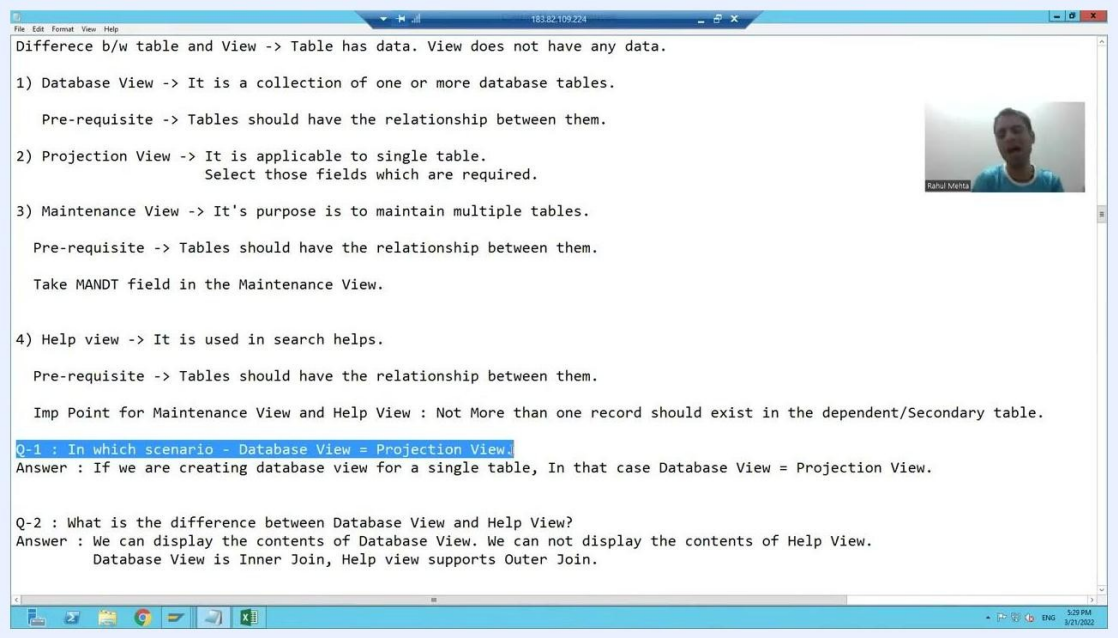
To test this, go to the **ABAP Dictionary: Initial Screen**. Enter your header table (for example, ZORDH_28) in the **Database table** field and a new view name (for example, ZDB_ORDER_28_1) in the **View** field. Click **Create** to begin.



The ABAP Dictionary initial screen with the database table and view name entered, ready to create a new view

Step 18: Configure the view without relationships

On the **Dictionary: Change View** screen, enter a short description such as Database View. In the **Tables** section, add only your header table (for example, ZORDH_28).



The Change View screen with only one table added and no join conditions

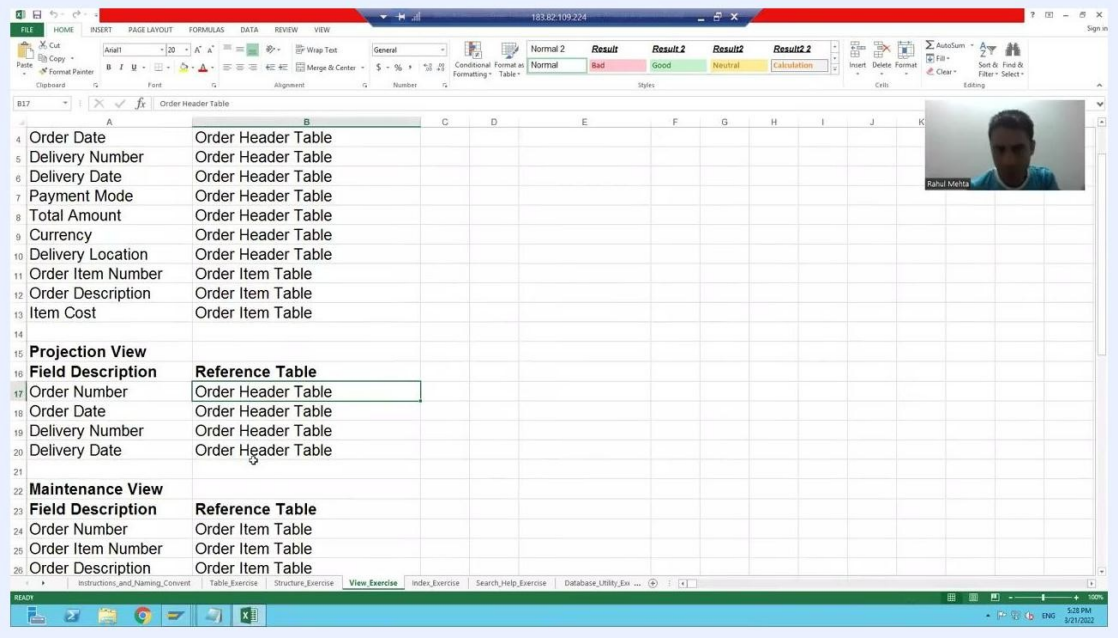
Do not click **Relationships** or add any other tables. Leave the **Join conditions** section empty, because only one table is involved.

Step 19: Select the fields

Switch to the **View Fields** tab and click **Table fields**. Select these columns from the header table, then confirm to add them:

- ONO (Order Number)
- ODATE (Order Date)
- DNO (Delivery Number)

- DDATE (Delivery Date)



4	Order Date	Order Header Table
5	Delivery Number	Order Header Table
6	Delivery Date	Order Header Table
7	Payment Mode	Order Header Table
8	Total Amount	Order Header Table
9	Currency	Order Header Table
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22	**Maintenance View**	
23	**Field Description**	**Reference Table**
24	Order Number	Order Item Table
25	Order Item Number	Order Item Table
26	Order Description	Order Item Table

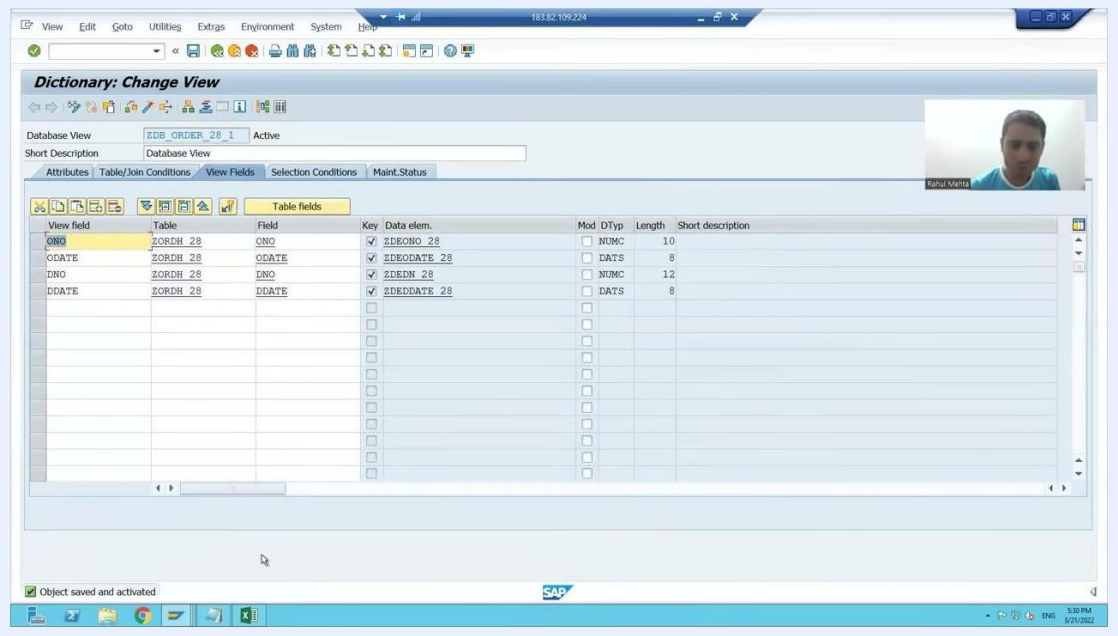
The field selection dialog showing the selected fields for the projection view

Step 20: Activate the single-table database view

Make sure the **View Fields** section lists the selected fields with the correct data elements and types:

- ONO (ZDEONO_28, NUMC, length 10)
- ODATE (ZDEODATE_28, DATS, length 8)
- DNO (ZDEDN_28, NUMC, length 12)

- DDATE (ZDEDDATE_28, DATS, length 8)



The Change View screen showing the activated database view with four selected fields

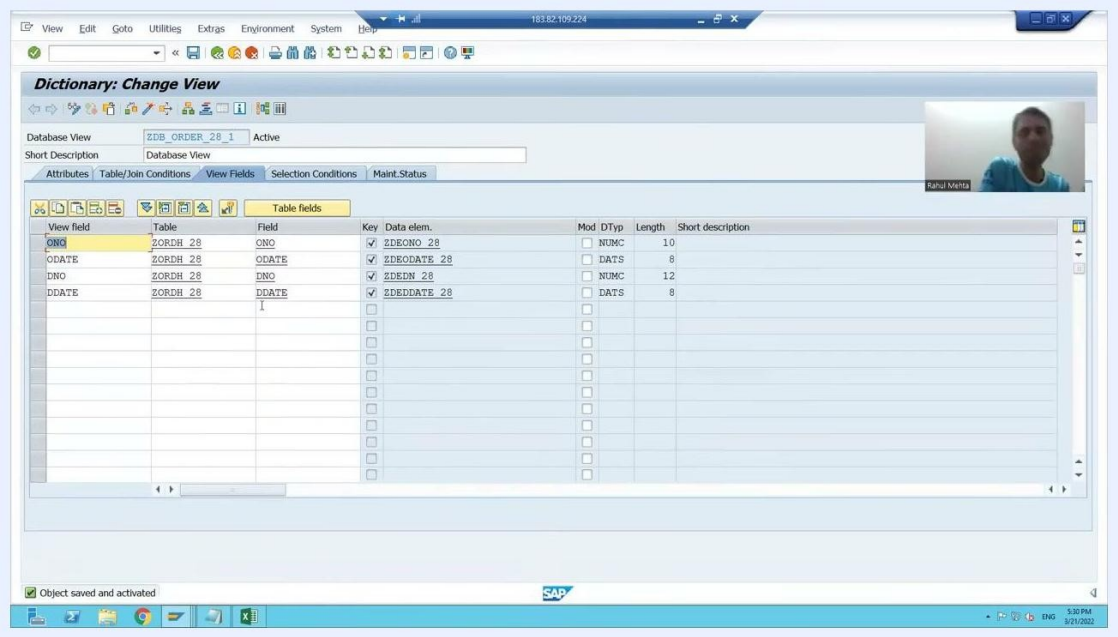
Activate the view and check the message at the bottom of the screen to confirm it is saved and activated.

Step 21: Apply the best practice

When you need specific columns from a single table, create a projection view. A database view normally combines multiple tables. Used with one table, it behaves the same as a projection view.

Summary

You created a database view in SAP ABAP that joins an order header table and an order item table. You defined the join conditions, selected fields from both tables, then saved, checked, activated, and displayed the view. You also created a projection view for a single table and saw that a single-table database view works the same way. For selecting specific columns from one table, use a projection view.



The Change View screen with the four selected fields, illustrating the best practice