

Walk-in Slide: AU 2014 Social Media Feed

1. Click on the link below, this will open your web browser

<http://aucache.autodesk.com/social/visualization.html>

2. Use “Extended Display” to project the website on screen if you plan to work on your computer. Use “Duplicate” to display same image on screen and computer.

PD5740 – AutoCAD® P&ID and AutoCAD® Plant 3D: Hidden Treasures in Your Databases

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Class summary

You will learn:

- how AutoCAD® P&ID/Plant 3D uses databases
- what the difference between Table and View is
- what are relationship tables for
- how you create your own views
- how you get the result of a view into your drawing

Key learning objectives

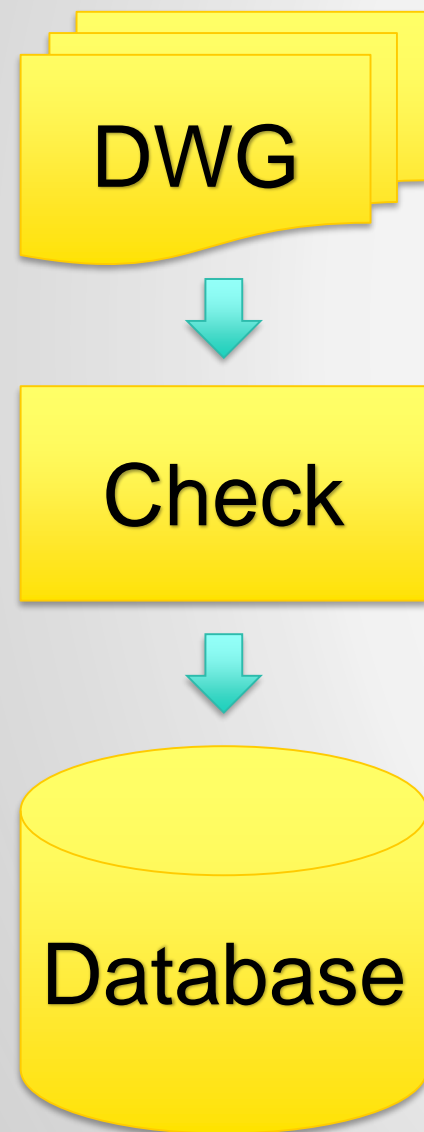
At the end of this class, you will be able to:

- Understand how AutoCAD P&ID software and AutoCAD Plant 3D software handle databases
- Learn where and how the data is stored in the database
- Learn how to create database views
- Discover ways to use the view's result for your work

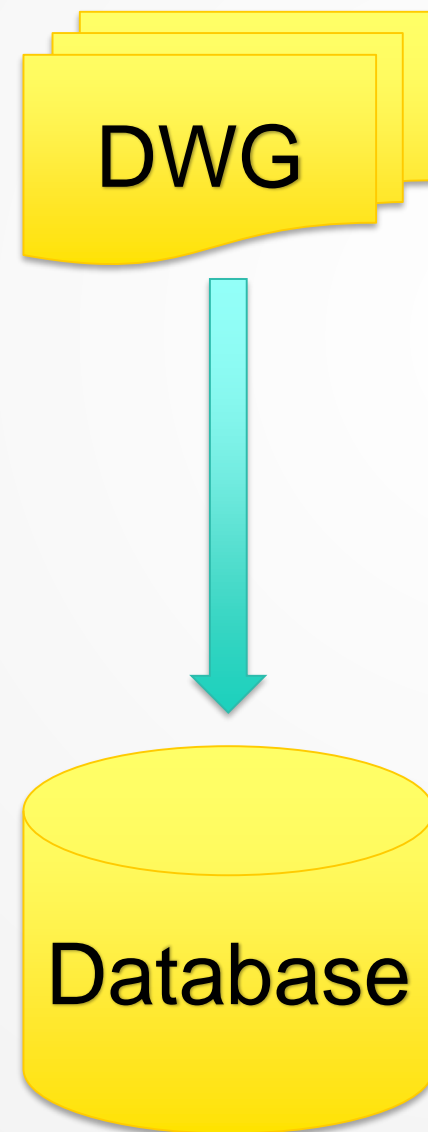
How AutoCAD® P&ID/Plant 3D uses databases

How AutoCAD® P&ID/Plant 3D uses databases

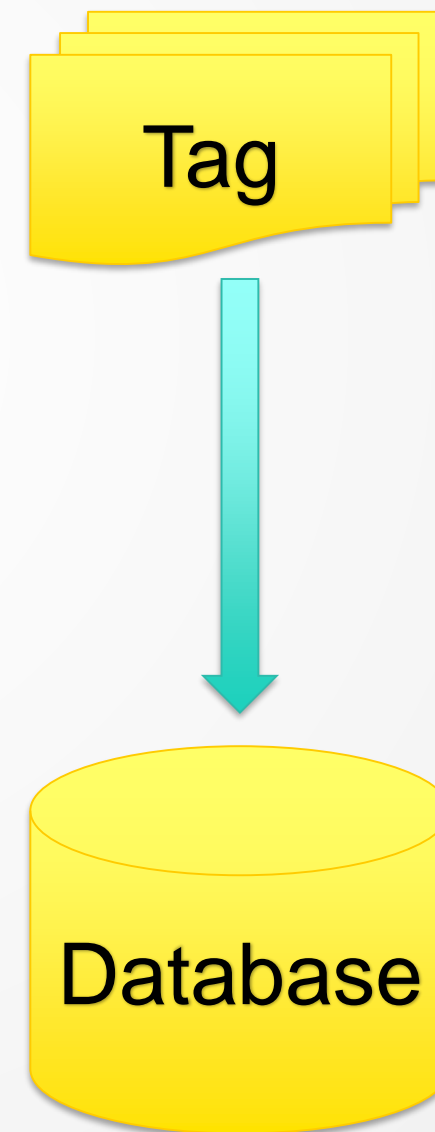
Open DWG



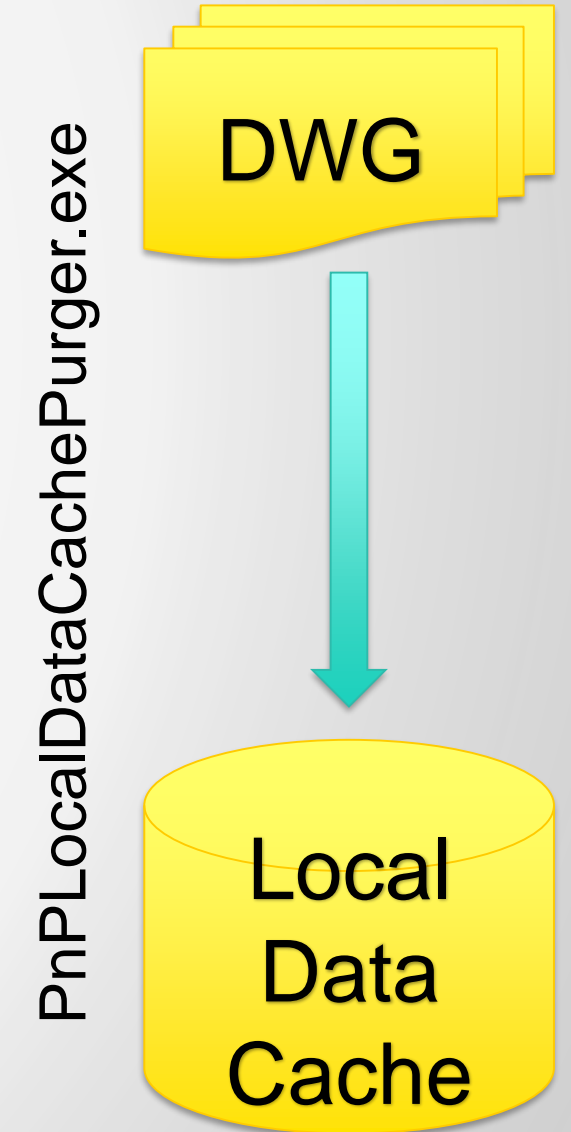
Save DWG



New Tag



Local Data Cache



PnPLocalDataCachePurger.exe

What is the difference between Table and View

What is the difference between Table and View

Equipment
Table

Database: ProcessPower Table: main.Equipment File: C:\Projects\PD5740\ProcessPower.dcf

Database Extensions Schema SQL Builder SQL Data Design DDL Scripting

Refresh

RecNo	PnPID	Tag	Type	EquipmentSpec	Weight	MaterialOfConstruction	Number	Area
1	452	P-001	P				001	(null)

EngineeringItems
Table

Database: ProcessPower Table: main.EngineeringItems File: C:\Projects\PD5740\ProcessPower.dcf

Database Extensions Schema SQL Builder SQL Data Design DDL Scripting

Refresh

RecNo	PnPID	ClassName	Description	Manufacturer	ModelNumber	Supplier	Comment	FlagValue	AcquisitionProperties
1	452	General Pump	GENERAL PUMP					0	

Equipment_PNP
View

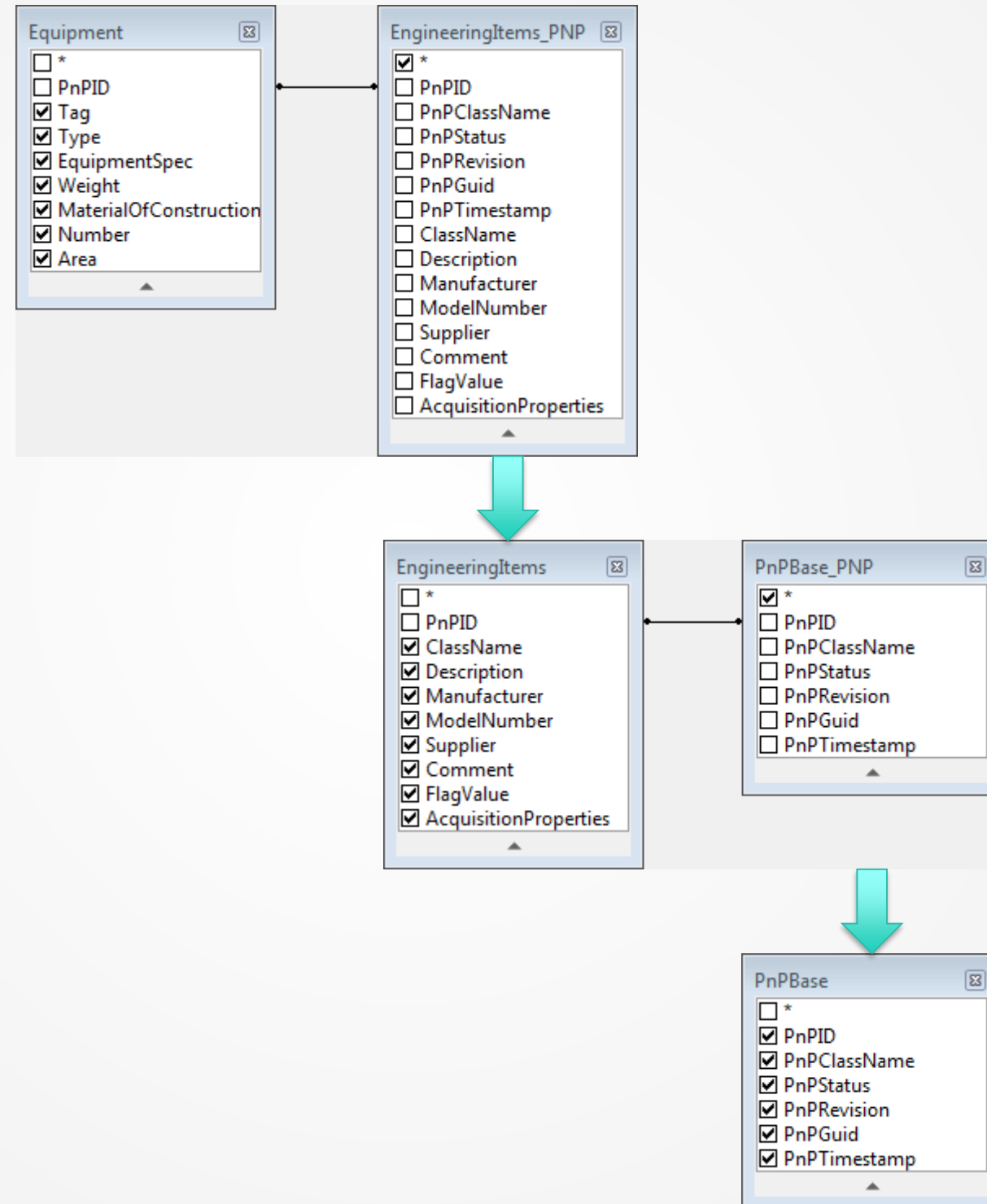
RecNo	PnPID	PnPClassNa...	PnPStatus	PnPRevision	PnPGuid	PnPTime...	ClassName	Description	Manufacturer	ModelNumber	Supplier	Comment	FlagValue	Acqui...	Tag	Type	Equip...	Weight	Material...	Number	Area
1	452	GeneralPump	0	0	{A7C3FD0B-D53C-4AD6-B014-FCC40A4922AA}	635515613495616859	General Pump	GENERAL PUMP					0		P-001	P				001	(null)

What is the difference between Table and View

Equipment_PNP
View

EngineeringItems_PnP
View

PnPBase_PNP
View



What are relationship tables for

What are relationship tables for

Off-Page
Connector

PipeLineGroup &
PipeLineSegements

LineStartAsset &
LeinEndAsset

ConnectorsRelationship

RecNo	PnPID	PnPGuid	PnPTimeStamp	Connector1	Connector2
1	29	{6E3813A2-7A42-4A7B-8780-E01A1752D295}	635515626089217496	488	508

Connectors

RecNo	PnPID	ConnectorNumber
1		488
2		508

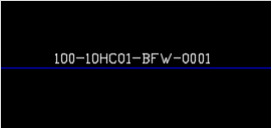


PipeLineGroupRelationship

RecNo	PnPID	PnPGuid	PnPTimeStamp	PipeLineGroup	PipeLine
1	5	{836F240F-54FD-450A-851D-0C16E55BA7A7}	635515624691559254	468	462
2	23	{54839448-D5CF-435A-87D4-38C2EA19B914}	635515625763453034	504	497
3	28				

RecNo	PnPID	Tag	Size	Spec	Tracing	InsulationType	Insulation	PaintCode	To	From	Op
1	462	100-10HC01-BFW-0001	100	10HC01					W-001	P-001	
2	478	100-10HC01-BFW-0002	100	10HC01						W-001	
3	497	100-10HC01-BFW-0003	100	10HC01							

PipeLines



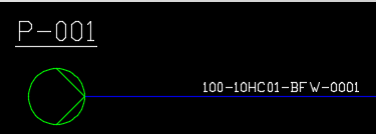
PipeLineGroup

LineStartAsset

RecNo	PnPID	PnPGuid	PnPTimeStamp	Line	Asset
1	6	{D40051A9-3533-49A1-9E9B-93282E2EB5A3}	635515624691862000	462	452
2	16	{406194BD-CDB9-48AE-BD8F-4A7B8780E01A}	635515624691862000	504	497

Equipment

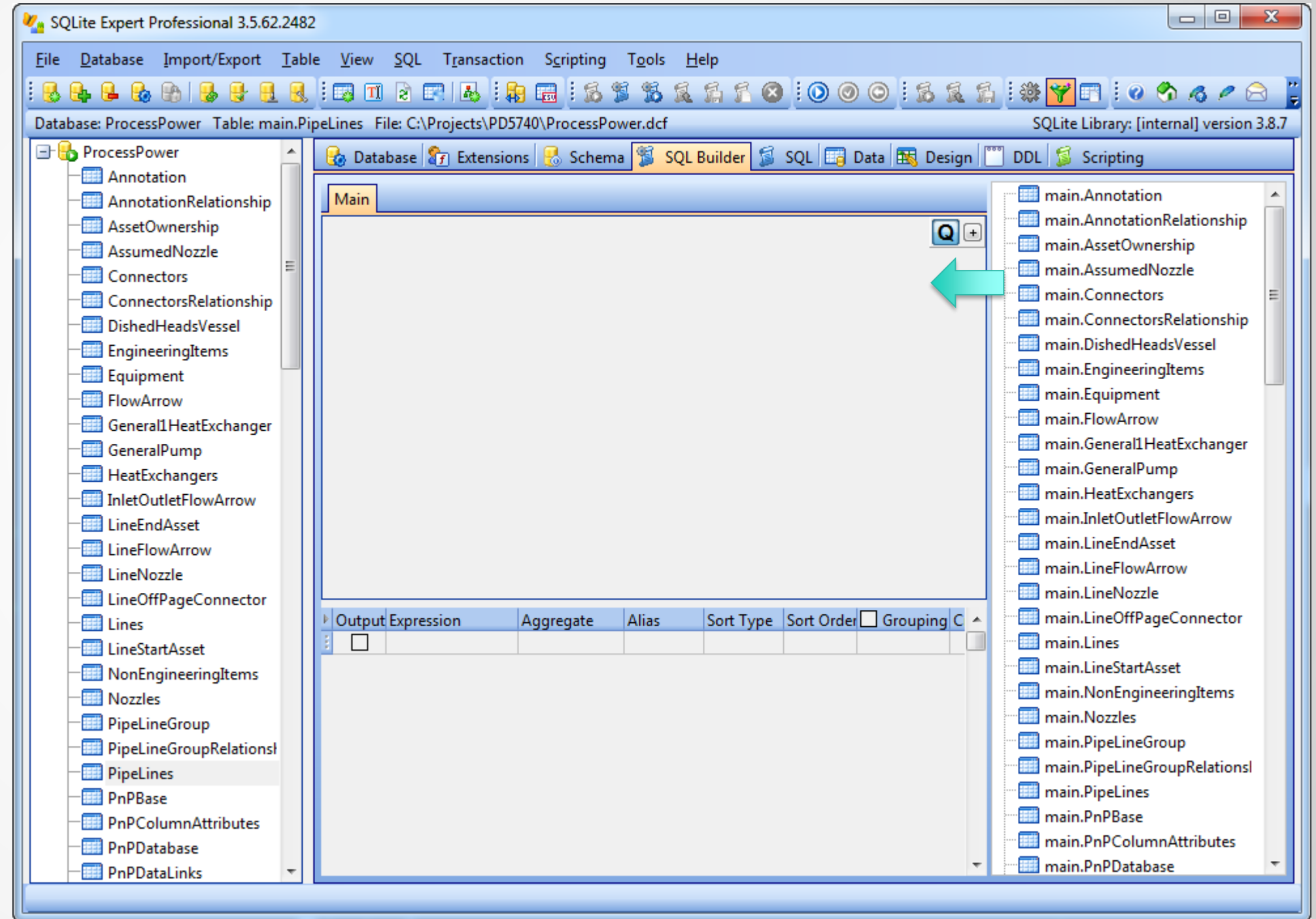
RecNo	PnPID	Tag	Type	EquipmentSpec	Weight	MaterialOfConstruction	Number	Area
1	452	P-001	P				001	(null)
2	457	W-001	W				001	(null)
3	492	K-001	K				001	(null)



How to create your own Views

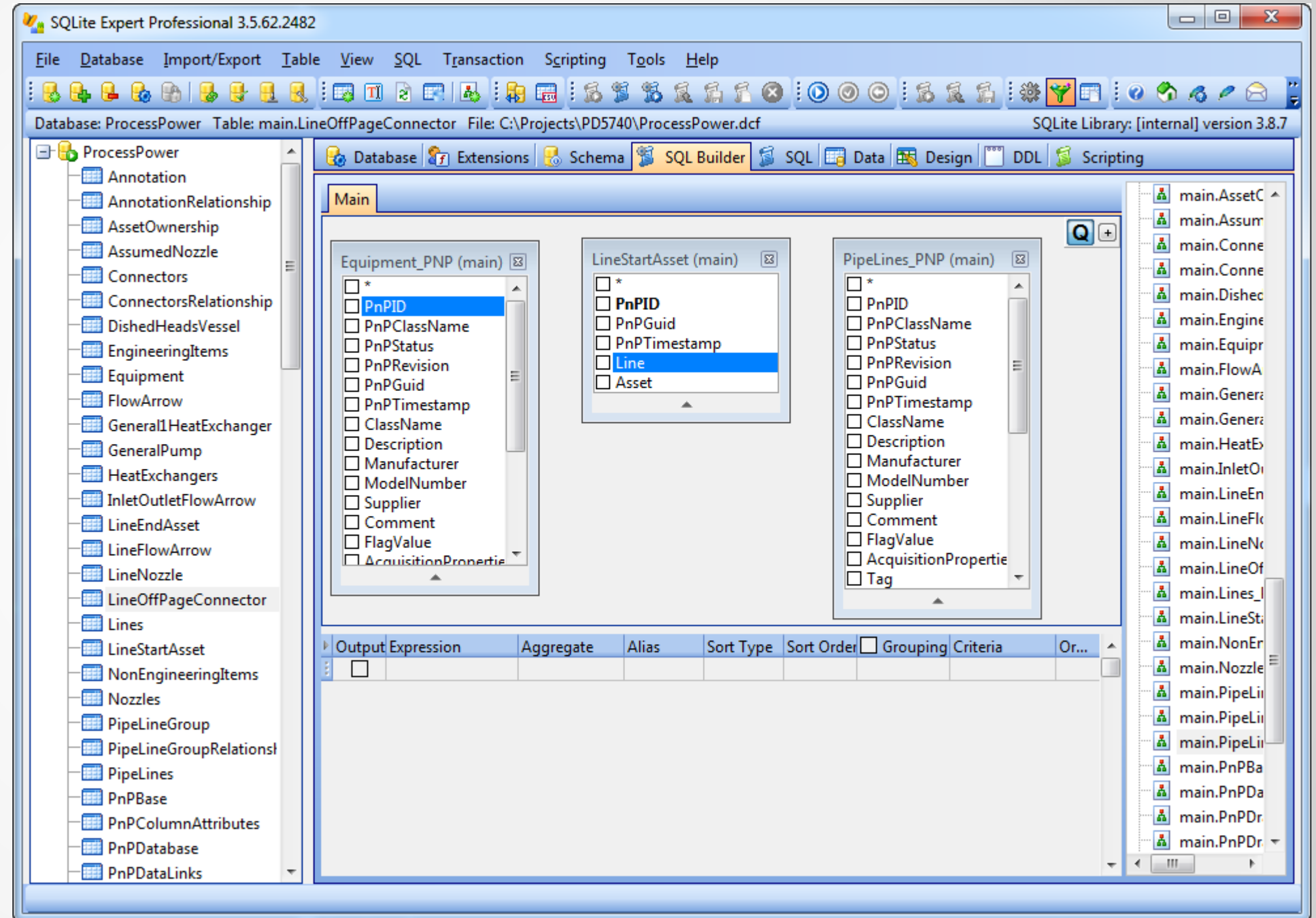
How to create your own Views

SQL Builder



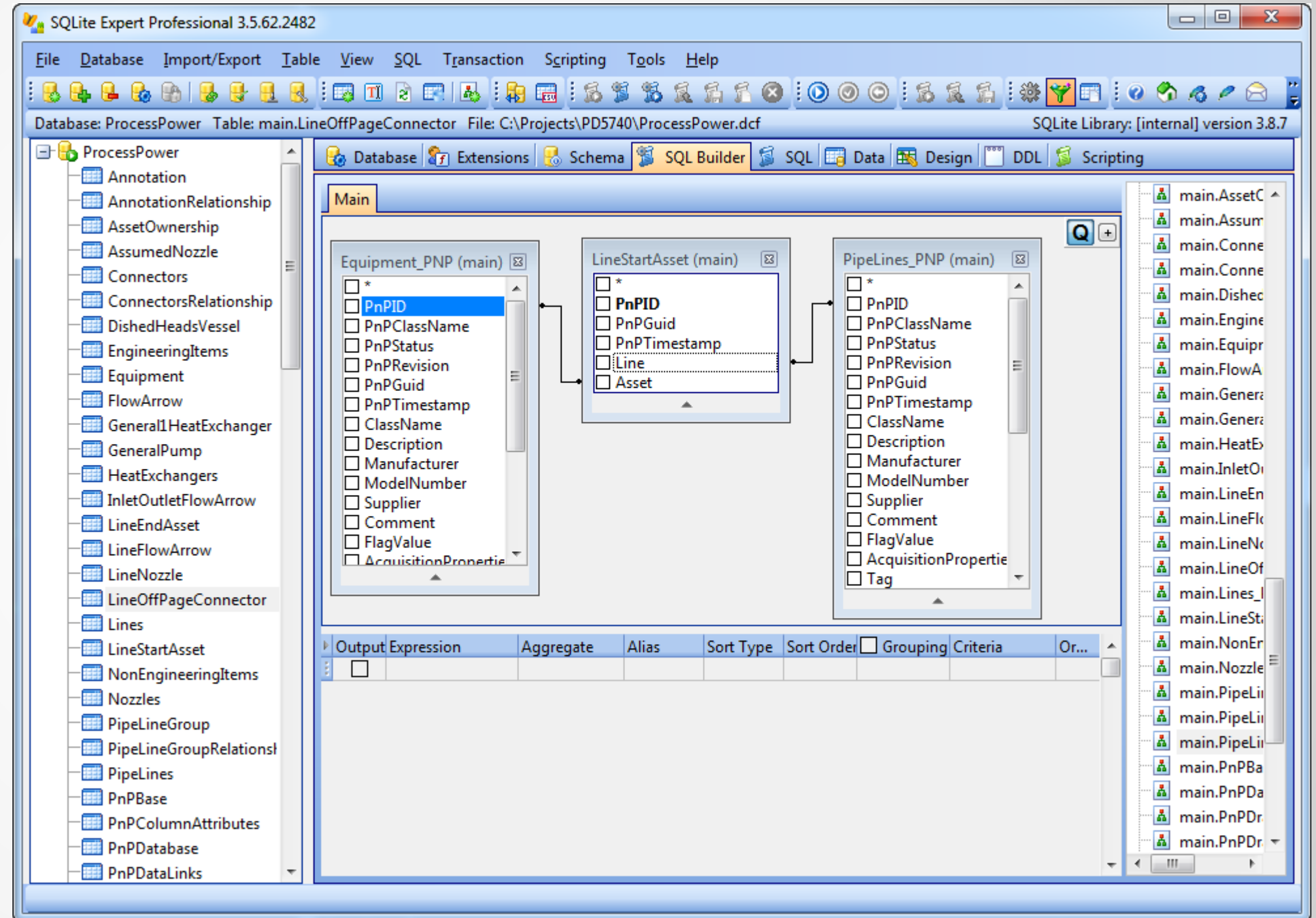
How to create your own Views

Select Tables or Views



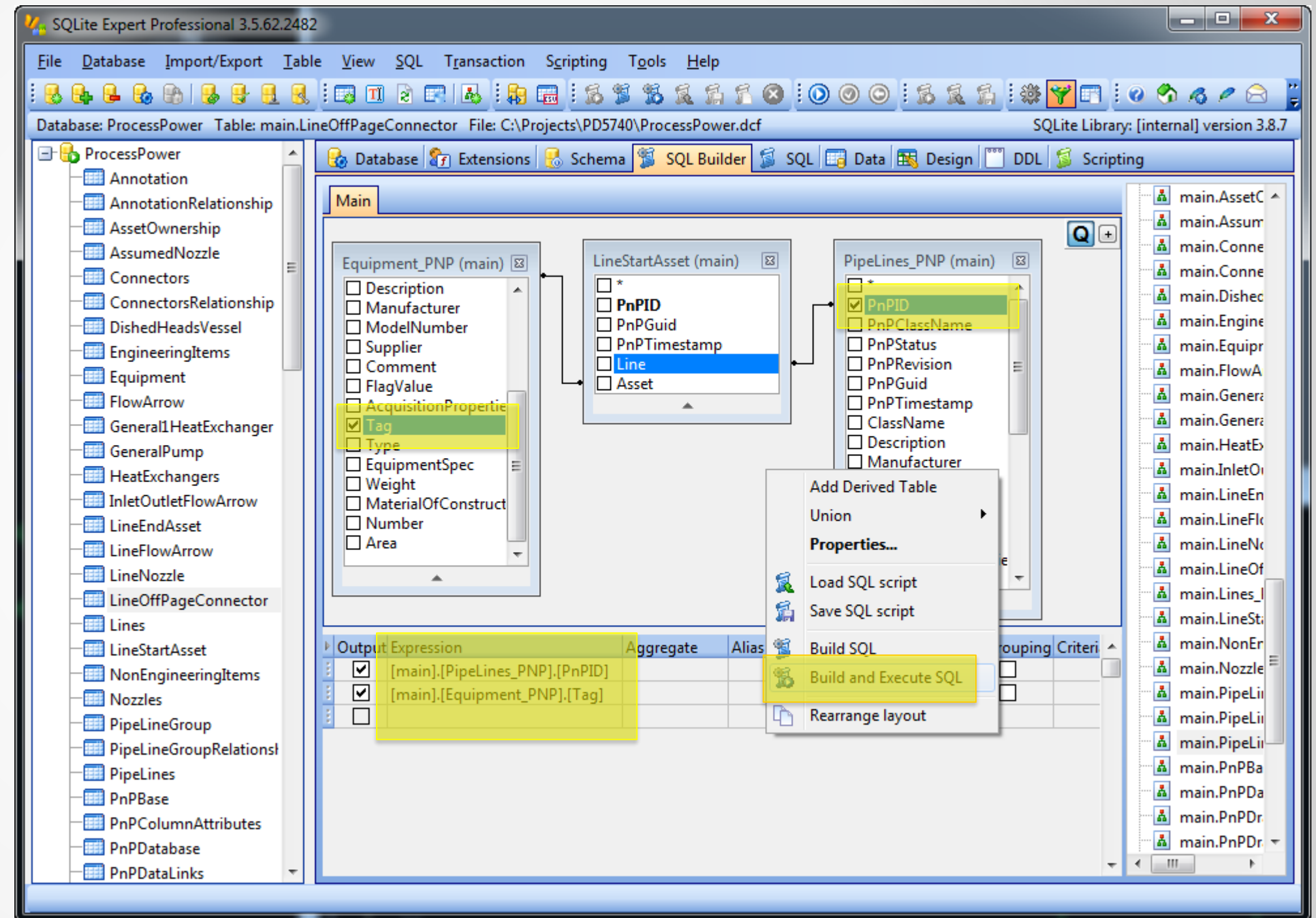
How to create your own Views

Set relationships



How to create your own Views

Set fields and
execute



How to create your own Views

Check result

The screenshot displays the SQLite Expert Professional 3.5.62.2482 interface. The left sidebar shows a tree view of the database structure, with 'ProcessPower' selected. The main window shows a SQL query in the 'SQL 5' tab. The query is as follows:

```
1 SELECT [main].[PipeLines_PNP].[PnPID],  
2 [main].[Equipment_PNP].[Tag]  
3 FROM [main].[Equipment_PNP]  
4 INNER JOIN [main].[LineStartAsset] ON [main].[Equipment_PNP].[PnPID] =  
5 [main].[LineStartAsset].[Asset]  
6 INNER JOIN [main].[PipeLines_PNP] ON [main].[LineStartAsset].[Line] =  
7 [main].[PipeLines_PNP].[PnPID]
```

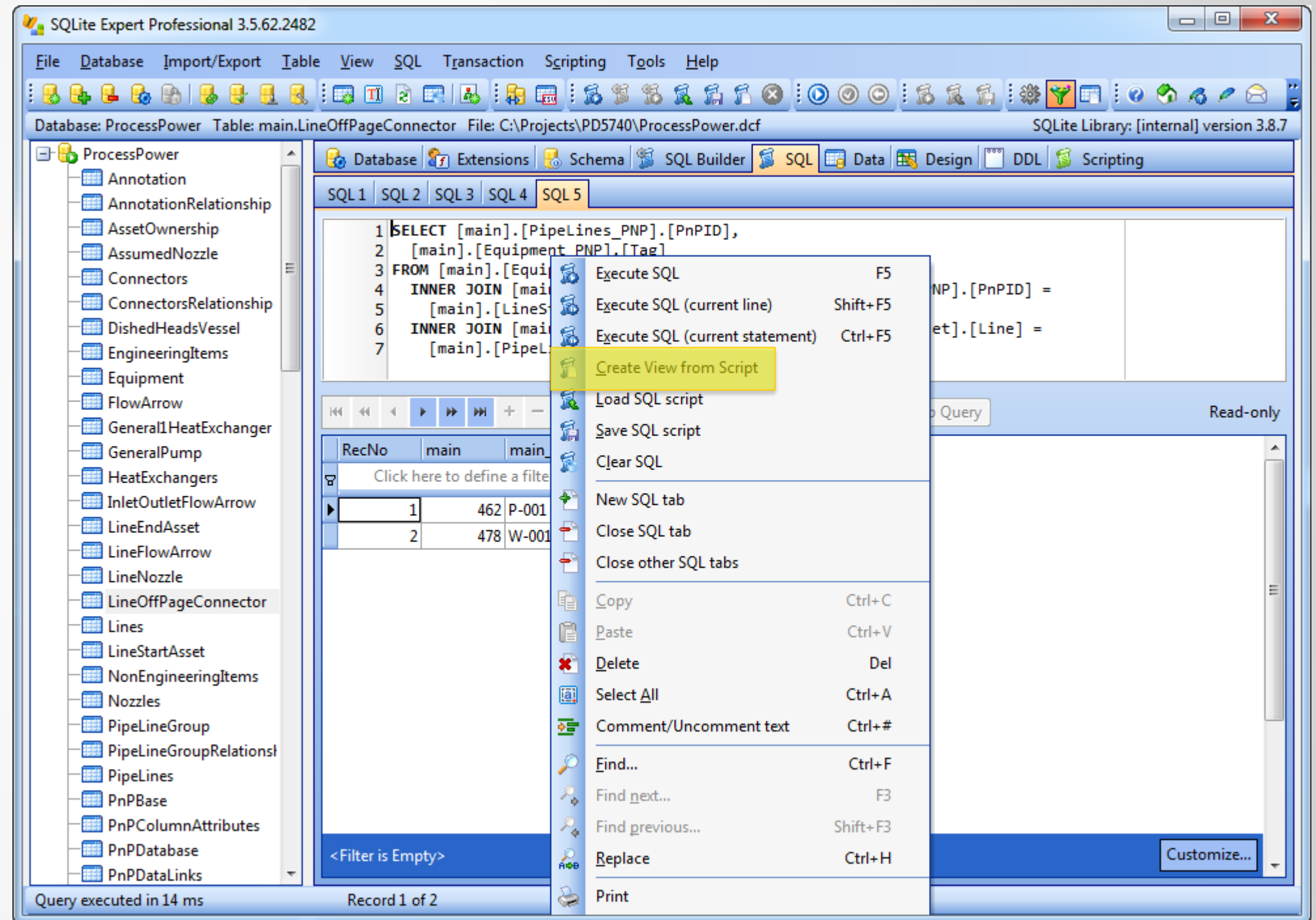
Below the query editor, the results are displayed in a table with columns 'RecNo', 'main', and 'main_1'. The table contains two rows of data:

RecNo	main	main_1
1	462	P-001
2	478	W-001

The status bar at the bottom indicates 'Query executed in 14 ms', 'Record 1 of 2', and '0 rows affected, 0 total'.

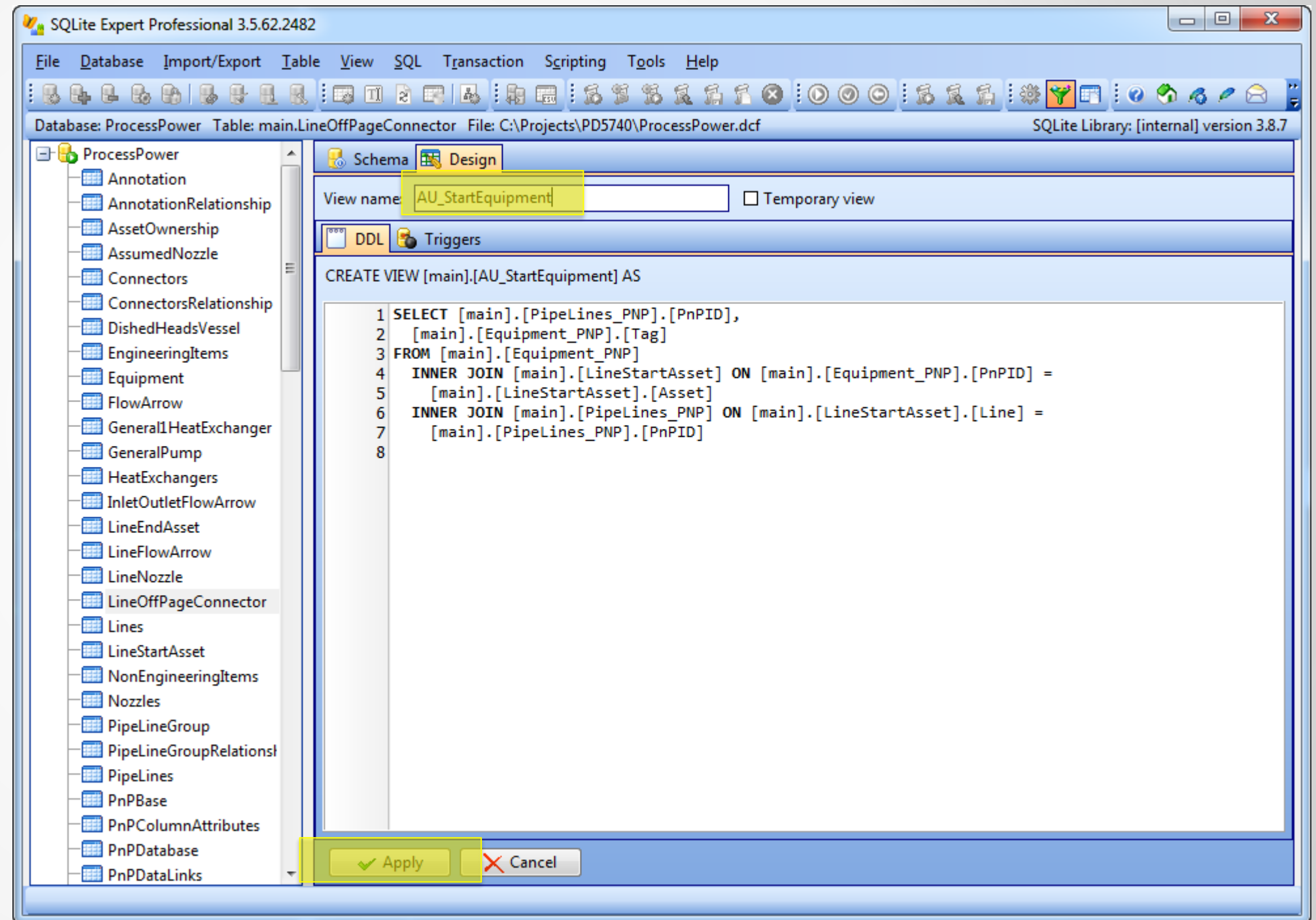
How to create your own Views

Check result



How to create your own Views

Save View

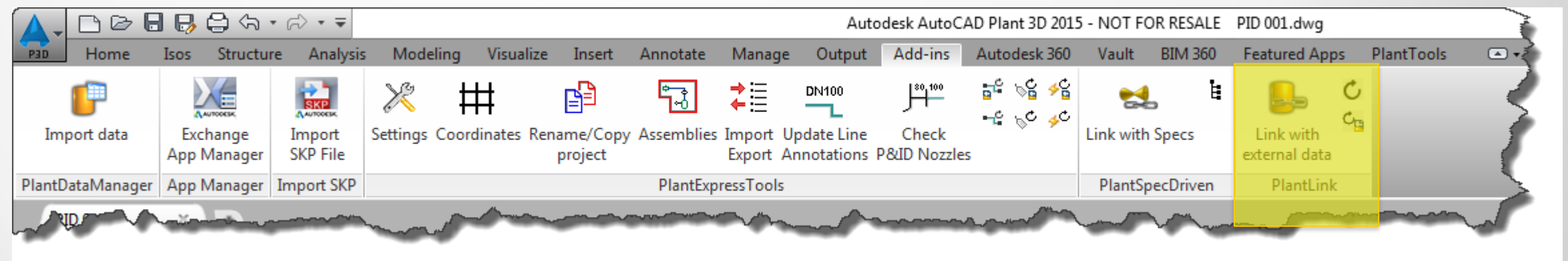
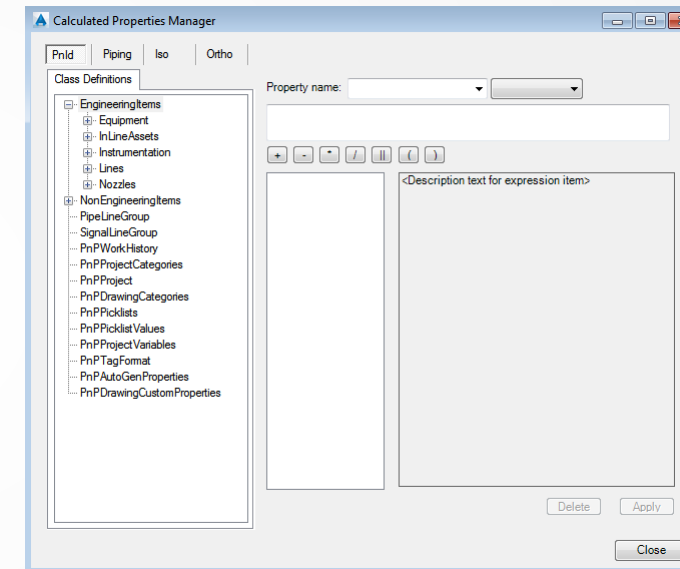


How to get the result of your view into your drawing

How to get the result of your view into your drawing

- Excel Ex-/Import + Copy & Paste
- PLANTXDBMANAGER
- PlantLink

	A	B	C	D	E	F	G	
1	Tag	Size	Spec	To	From	Design Press	Design Temp	Opera
2	100-10HC01-	100	10HC01	W-001	P-001			
3	100-10HC01-	100	10HC01		W-001			
4								



How to get the result of your view into your drawing

Plant Link

File Help

Project
C:\Projects\PD5740\Project.xml

Link Configurations

+ New... Edit... Delete

Name
AU StartAssets

Details
Datasource:
Link type:
Class:

No new version is available.

Link Configuration Wizard

External data source selection

Select the external data source by providing the udl file.

☐ OleDb data source (UDL):
Browse New Edit

☒ SQLite data source:
Browse
C:\Projects\PD5740\ProcessPower.dcf
Variables
[PP] = Project Path
[PN] = Project Name
Example: [PP]\ProcessPower.dcf

Link Configuration Wizard

Link type selection

Select the desired link type.

☐ Extend AutoCAD P&ID/Plant 3D
Data from an external data source. The data from P&ID/Plant 3D. Also data in P&ID/Plant 3D properties.

☒ Update AutoCAD P&ID/Plant 3D
Data from an external data source. Also data in external 3D properties.

☐ AutoCAD Properties
Data from the external data source.

Link Configuration Wizard

Class selection

Select the class for which you want to

☒ P&ID Classes ☐ P3D Classes

Engineering Items
Equipment
Inline Assets
Instrumentation
Lines
Nozzles
Non Engineering Items
Pipe Line Group
Signal Line Group

Selected class: Lines

Link Configuration Wizard

External data table selection

Select external table that will be linked with the class.

☐ Tables ☒ Views

Annotation_PNP
AnnotationRelationship_PNP
AssetOwnership_PNP
AssumedNozzle_PNP
AU_StartEquipment
Connectors_PNP
ConnectorsRelationship_PNP
DishedHeadsVessel_PNP
EngineeringItems_PNP
Equipment_PNP
FlowArrow_PNP
GeneralHeatExchanger_PNP
GeneralPump_PNP
HeatExchangers_PNP
InletOutletFlowArrow_PNP
LineEndAsset_PNP

Selected view: AU_StartEquipment

Link Configuration Wizard

Linked fields selection

Select fields that will define the data link

Linked fields:

External table column	Class property
PnPID	PnPID
**	

Link Configuration Wizard

Mapped fields selection

Select fields that will be mapped

Mapped fields:

External table column	Class property	Write back	Clear value	Sync mode
Tag	Comment	<input type="checkbox"/>	<input checked="" type="checkbox"/>	On drawing save
*		<input type="checkbox"/>	<input type="checkbox"/>	

Link Configuration Wizard

Link configuration naming

Provide a name for the link configuration.

Name:
AU StartAssets

Synchronization interval: 60 sec

Previous

Plant Link

File Help

Project
C:\Projects\PD5740\Project.xml

Link Configurations

+ New... Edit... Delete Refresh

Name	Status	Disabled
AU StartAssets	Active	<input type="checkbox"/>

Details
Datasource:
Link type:
Class:

No new version is available.



Session Feedback

- Via the Survey Stations, email or mobile device
- AU 2015 passes given out each day!
- Best to do it right after the session
- Instructors see results in real-time





A group of four diverse young adults are jumping joyfully in a modern, industrial-style office space. They are all smiling and have their arms outstretched. The background shows a brick wall, string lights, and a desk with a computer monitor displaying a design application. A large blue banner on the left side of the image has the text 'DESIGN ENGINEERING' and a logo with the letter 'B'.

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