

# Natural Joins Make for Easy Data Models



Mike Reagan


[www.FortuneCookieBI.com](http://www.FortuneCookieBI.com)

# Data Model Goals

Excel

QVDs

Defaults

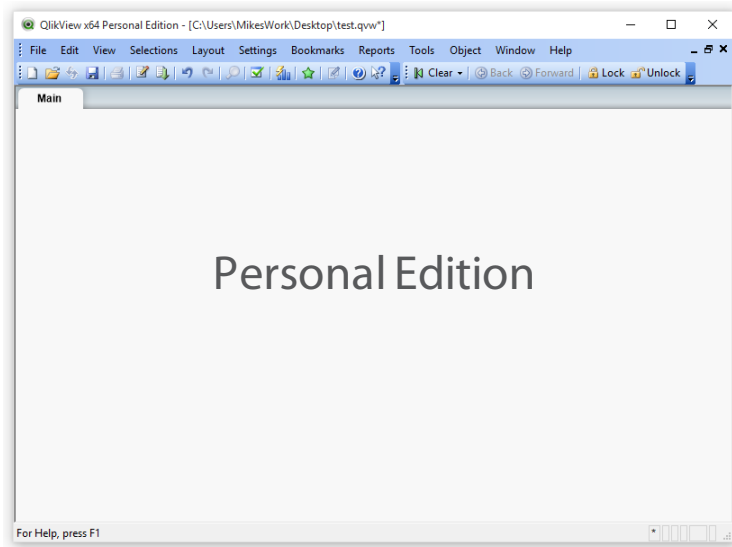


To err is human. But to really foul things up, you need Excel.

— <http://spreadsheetpage.com>



# QlikView Personal Edition

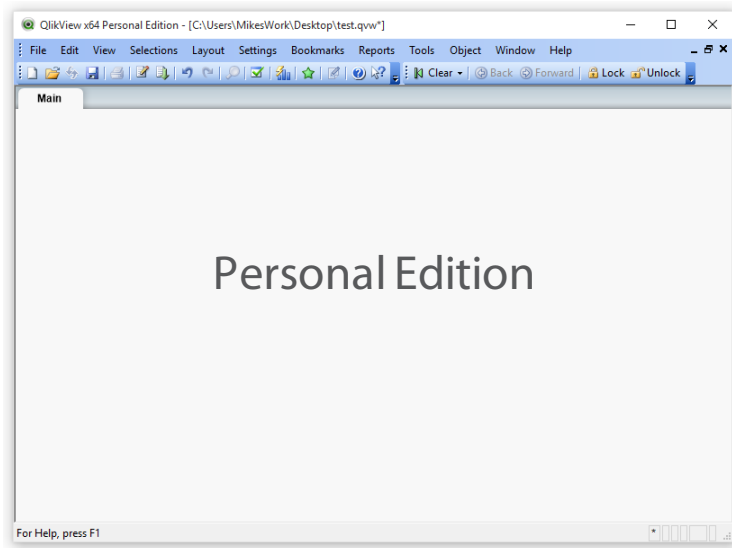


It's FREE!

– Nada, Ничего, Ingenting, Nothing

Swedish, just like QlikView

# QlikView Personal Edition



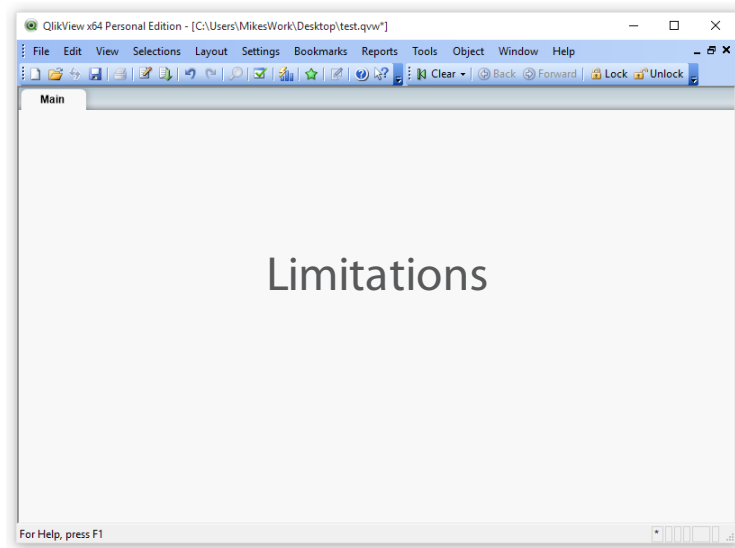
It's FREE!

- Nada, Ничего, Ingenting, Nothing

Create anything you like

- No limitations on creation

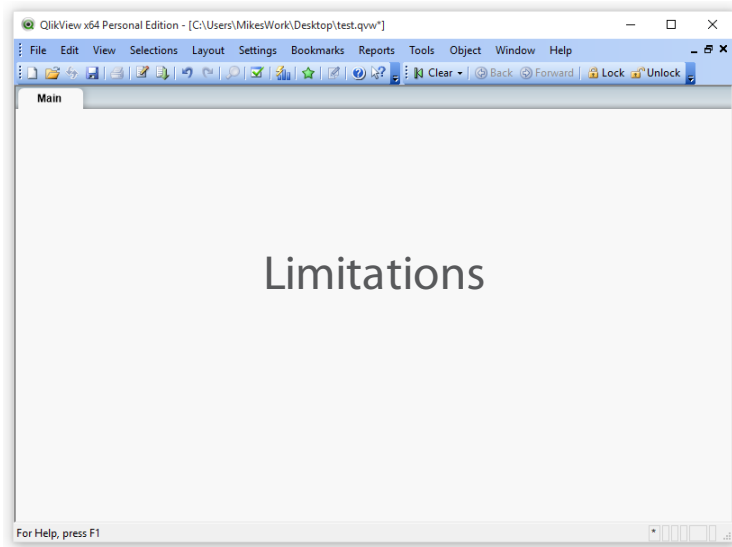
# QlikView Personal Edition



Works with local files only

- You can't open someone else's app

# QlikView Personal Edition



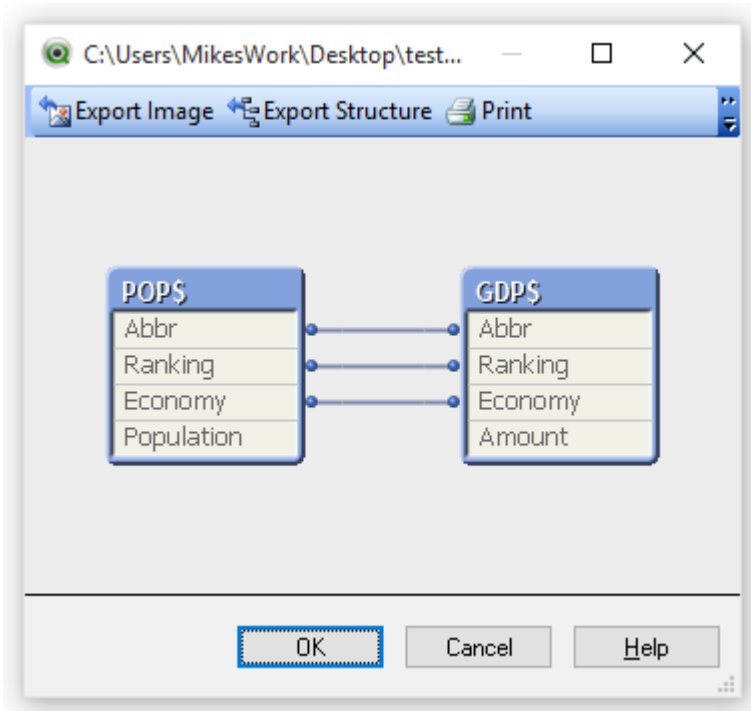
Works with local files only

- You can't open someone else's app

Can't import a document layout

- Sheets/objects/security settings

# QlikView Natural Joins

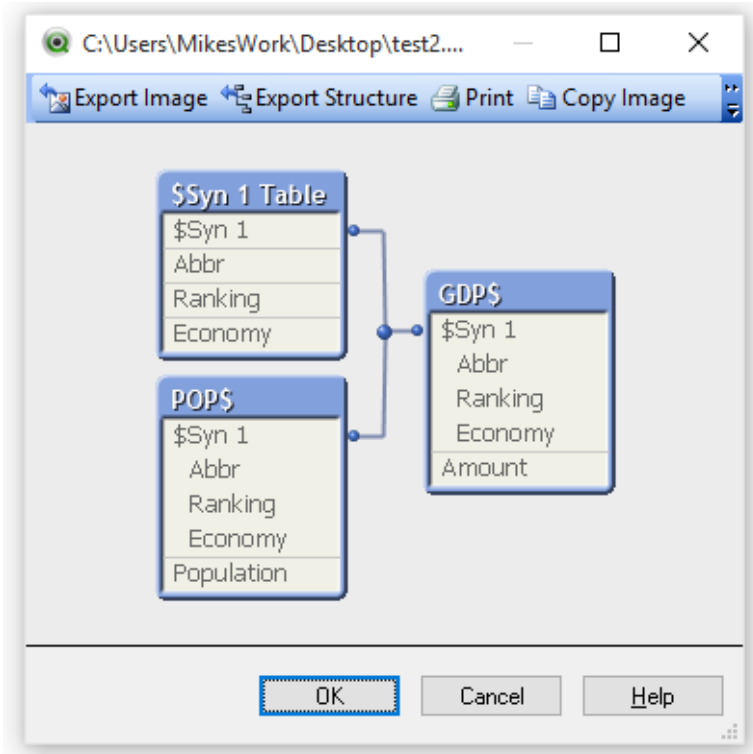


## Joins on like field names

- Even if there are more than one



# QlikView Natural Joins



Joins on like field names

- Even if there are more than one

Synthetic Keys are created

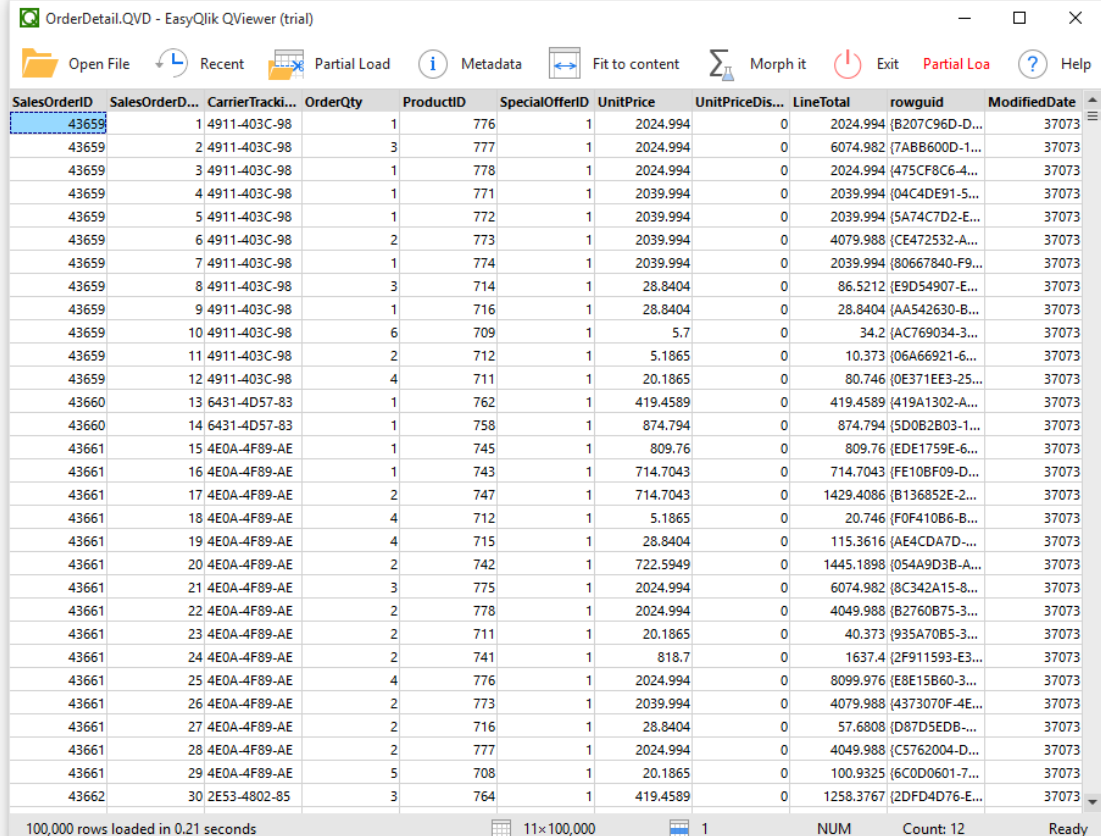
- Not necessarily bad, but fix them

# QVDs Script



# QVDs

QlikView's optimized data table



OrderDetail.QVD - EasyQlik QViewer (trial)

Open File Recent Partial Load Metadata Fit to content Morph it Exit Partial Loa Help

| SalesOrderID | SalesOrderD... | CarrierTracki... | OrderQty | ProductID | SpecialOfferID | UnitPrice | UnitPriceDis... | LineTotal | rowguid         | ModifiedDate |
|--------------|----------------|------------------|----------|-----------|----------------|-----------|-----------------|-----------|-----------------|--------------|
| 43659        | 1              | 4911-403C-98     | 1        | 776       | 1              | 2024.994  | 0               | 2024.994  | (B207C96D-D...  | 37073        |
| 43659        | 2              | 4911-403C-98     | 3        | 777       | 1              | 2024.994  | 0               | 6074.982  | (7AB8600D-1...  | 37073        |
| 43659        | 3              | 4911-403C-98     | 1        | 778       | 1              | 2024.994  | 0               | 2024.994  | (475CF8C6-4...  | 37073        |
| 43659        | 4              | 4911-403C-98     | 1        | 771       | 1              | 2039.994  | 0               | 2039.994  | (04C4DE91-5...  | 37073        |
| 43659        | 5              | 4911-403C-98     | 1        | 772       | 1              | 2039.994  | 0               | 2039.994  | (5A74C7D2-E...  | 37073        |
| 43659        | 6              | 4911-403C-98     | 2        | 773       | 1              | 2039.994  | 0               | 4079.988  | (CE472532-A...  | 37073        |
| 43659        | 7              | 4911-403C-98     | 1        | 774       | 1              | 2039.994  | 0               | 2039.994  | (80667840-F9... | 37073        |
| 43659        | 8              | 4911-403C-98     | 3        | 714       | 1              | 28.8404   | 0               | 86.5212   | (E9D54907-E...  | 37073        |
| 43659        | 9              | 4911-403C-98     | 1        | 716       | 1              | 28.8404   | 0               | 28.8404   | (AA542630-B...  | 37073        |
| 43659        | 10             | 4911-403C-98     | 6        | 709       | 1              | 5.7       | 0               | 34.2      | (AC769034-3...  | 37073        |
| 43659        | 11             | 4911-403C-98     | 2        | 712       | 1              | 5.1865    | 0               | 10.373    | (06A66921-6...  | 37073        |
| 43659        | 12             | 4911-403C-98     | 4        | 711       | 1              | 20.1865   | 0               | 80.746    | (0E371EE3-25... | 37073        |
| 43660        | 13             | 6431-4D57-83     | 1        | 762       | 1              | 419.4589  | 0               | 419.4589  | (419A1302-A...  | 37073        |
| 43660        | 14             | 6431-4D57-83     | 1        | 758       | 1              | 874.794   | 0               | 874.794   | (5D0B2B03-1...  | 37073        |
| 43661        | 15             | 4E0A-4F89-AE     | 1        | 745       | 1              | 809.76    | 0               | 809.76    | (EDE1759E-6...  | 37073        |
| 43661        | 16             | 4E0A-4F89-AE     | 1        | 743       | 1              | 714.7043  | 0               | 714.7043  | (FE10BF09-D...  | 37073        |
| 43661        | 17             | 4E0A-4F89-AE     | 2        | 747       | 1              | 714.7043  | 0               | 1429.4086 | (B136852E-2...  | 37073        |
| 43661        | 18             | 4E0A-4F89-AE     | 4        | 712       | 1              | 5.1865    | 0               | 20.746    | (F0F410B6-B...  | 37073        |
| 43661        | 19             | 4E0A-4F89-AE     | 4        | 715       | 1              | 28.8404   | 0               | 115.3616  | (AE4CDA7D-...   | 37073        |
| 43661        | 20             | 4E0A-4F89-AE     | 2        | 742       | 1              | 722.5949  | 0               | 1445.1898 | (054A9D3B-A...  | 37073        |
| 43661        | 21             | 4E0A-4F89-AE     | 3        | 775       | 1              | 2024.994  | 0               | 6074.982  | (8C342A15-8...  | 37073        |
| 43661        | 22             | 4E0A-4F89-AE     | 2        | 778       | 1              | 2024.994  | 0               | 4049.988  | (B2760B75-3...  | 37073        |
| 43661        | 23             | 4E0A-4F89-AE     | 2        | 711       | 1              | 20.1865   | 0               | 40.373    | (935A70B5-3...  | 37073        |
| 43661        | 24             | 4E0A-4F89-AE     | 2        | 741       | 1              | 818.7     | 0               | 1637.4    | (2F911593-E3... | 37073        |
| 43661        | 25             | 4E0A-4F89-AE     | 4        | 776       | 1              | 2024.994  | 0               | 8099.976  | (E8E15B60-3...  | 37073        |
| 43661        | 26             | 4E0A-4F89-AE     | 2        | 773       | 1              | 2039.994  | 0               | 4079.988  | (4373070F-4E... | 37073        |
| 43661        | 27             | 4E0A-4F89-AE     | 2        | 716       | 1              | 28.8404   | 0               | 57.6808   | (D87D5EDB-...   | 37073        |
| 43661        | 28             | 4E0A-4F89-AE     | 2        | 777       | 1              | 2024.994  | 0               | 4049.988  | (C5762004-D...  | 37073        |
| 43661        | 29             | 4E0A-4F89-AE     | 5        | 708       | 1              | 20.1865   | 0               | 100.9325  | (6C0D0601-7...  | 37073        |
| 43662        | 30             | 2E53-4802-85     | 3        | 764       | 1              | 419.4589  | 0               | 1258.3767 | (2DFD4D76-E...  | 37073        |

100,000 rows loaded in 0.21 seconds 11x100,000 1 NUM Count: 12 Ready

QVD viewer available at <http://easyqlik.com/>

# QVDs

QlikView's optimized data table  
Fast, small and reusable

OrderDetail.QVD - EasyQlik QViewer (trial)

Open File Recent Partial Load Metadata Fit to content Morph it Exit Partial Loa Help

| SalesOrderID | SalesOrder... | CarrierTrack... | OrderQty | ProductID | SpecialOfferID | UnitPrice | UnitPriceDis... | LineTotal | rowguid         | ModifiedDate |
|--------------|---------------|-----------------|----------|-----------|----------------|-----------|-----------------|-----------|-----------------|--------------|
| 43659        | 1             | 4911-403C-98    | 1        | 776       | 1              | 2024.994  | 0               | 2024.994  | (B207C96D-D...  | 37073        |
| 43659        | 2             | 4911-403C-98    | 3        | 777       | 1              | 2024.994  | 0               | 6074.982  | (7ABB600D-1...  | 37073        |
| 43659        | 3             | 4911-403C-98    | 1        | 778       | 1              | 2024.994  | 0               | 2024.994  | (475CF8C6-4...  | 37073        |
| 43659        | 4             | 4911-403C-98    | 1        | 771       | 1              | 2039.994  | 0               | 2039.994  | (04C4DE91-5...  | 37073        |
| 43659        | 5             | 4911-403C-98    | 1        | 772       | 1              | 2039.994  | 0               | 2039.994  | (5A74CTD2-E...  | 37073        |
| 43659        | 6             | 4911-403C-98    | 2        | 773       | 1              | 2039.994  | 0               | 4079.988  | (CE472532-A...  | 37073        |
| 43659        | 7             | 4911-403C-98    | 1        | 774       | 1              | 2039.994  | 0               | 2039.994  | (80667840-F9... | 37073        |
| 43659        | 8             | 4911-403C-98    | 3        | 714       | 1              | 28.8404   | 0               | 86.5212   | (E9D54907-E...  | 37073        |
| 43659        | 9             | 4911-403C-98    | 1        | 716       | 1              | 28.8404   | 0               | 28.8404   | (AA542630-B...  | 37073        |
| 43659        | 10            | 4911-403C-98    | 6        | 709       | 1              | 5.7       | 0               | 34.2      | (AC769034-3...  | 37073        |
| 43659        | 11            | 4911-403C-98    | 2        | 712       | 1              | 5.1865    | 0               | 10.373    | (06A66921-6...  | 37073        |
| 43659        | 12            | 4911-403C-98    | 4        | 711       | 1              | 20.1865   | 0               | 80.746    | (0E371EE3-25... | 37073        |
| 43660        | 13            | 6431-4D57-83    | 1        | 762       | 1              | 419.4589  | 0               | 419.4589  | (419A1302-A...  | 37073        |
| 43660        | 14            | 6431-4D57-83    | 1        | 758       | 1              | 874.794   | 0               | 874.794   | (5D0B2B03-1...  | 37073        |
| 43661        | 15            | 4E0A-4F89-AE    | 1        | 745       | 1              | 809.76    | 0               | 809.76    | (EDE1759E-6...  | 37073        |
| 43661        | 16            | 4E0A-4F89-AE    | 1        | 743       | 1              | 714.7043  | 0               | 714.7043  | (FE10BF09-D...  | 37073        |
| 43661        | 17            | 4E0A-4F89-AE    | 2        | 747       | 1              | 714.7043  | 0               | 1429.4086 | (B136852E-2...  | 37073        |
| 43661        | 18            | 4E0A-4F89-AE    | 4        | 712       | 1              | 5.1865    | 0               | 20.746    | (F0F410B6-B...  | 37073        |
| 43661        | 19            | 4E0A-4F89-AE    | 4        | 715       | 1              | 28.8404   | 0               | 115.3616  | (AE4CDA7D-...   | 37073        |
| 43661        | 20            | 4E0A-4F89-AE    | 2        | 742       | 1              | 722.5949  | 0               | 1445.1898 | (054A9D3B-A...  | 37073        |
| 43661        | 21            | 4E0A-4F89-AE    | 3        | 775       | 1              | 2024.994  | 0               | 6074.982  | (8C342A15-8...  | 37073        |
| 43661        | 22            | 4E0A-4F89-AE    | 2        | 778       | 1              | 2024.994  | 0               | 4049.988  | (B2760B75-3...  | 37073        |
| 43661        | 23            | 4E0A-4F89-AE    | 2        | 711       | 1              | 20.1865   | 0               | 40.373    | (935A70B5-3...  | 37073        |
| 43661        | 24            | 4E0A-4F89-AE    | 2        | 741       | 1              | 818.7     | 0               | 1637.4    | (2F911593-E3... | 37073        |
| 43661        | 25            | 4E0A-4F89-AE    | 4        | 776       | 1              | 2024.994  | 0               | 8099.976  | (E8E15B60-3...  | 37073        |
| 43661        | 26            | 4E0A-4F89-AE    | 2        | 773       | 1              | 2039.994  | 0               | 4079.988  | (4373070F-4E... | 37073        |
| 43661        | 27            | 4E0A-4F89-AE    | 2        | 716       | 1              | 28.8404   | 0               | 57.6808   | (D87D5EDB-...   | 37073        |
| 43661        | 28            | 4E0A-4F89-AE    | 2        | 777       | 1              | 2024.994  | 0               | 4049.988  | (C5762004-D...  | 37073        |
| 43661        | 29            | 4E0A-4F89-AE    | 5        | 708       | 1              | 20.1865   | 0               | 100.9325  | (6C0D0601-7...  | 37073        |
| 43662        | 30            | 2E53-4802-85    | 3        | 764       | 1              | 419.4589  | 0               | 1258.3767 | (2DFD4D76-E...  | 37073        |

100,000 rows loaded in 0.21 seconds 11x100,000 1 NUM Count: 12 Ready

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# QVDs

QlikView's optimized data table

Fast, small and reusable

Built with a QlikView app

OrderDetail.QVD - EasyQlik QViewer (trial)

Open File Recent Partial Load Metadata Fit to content Morph it Exit Partial Loa Help

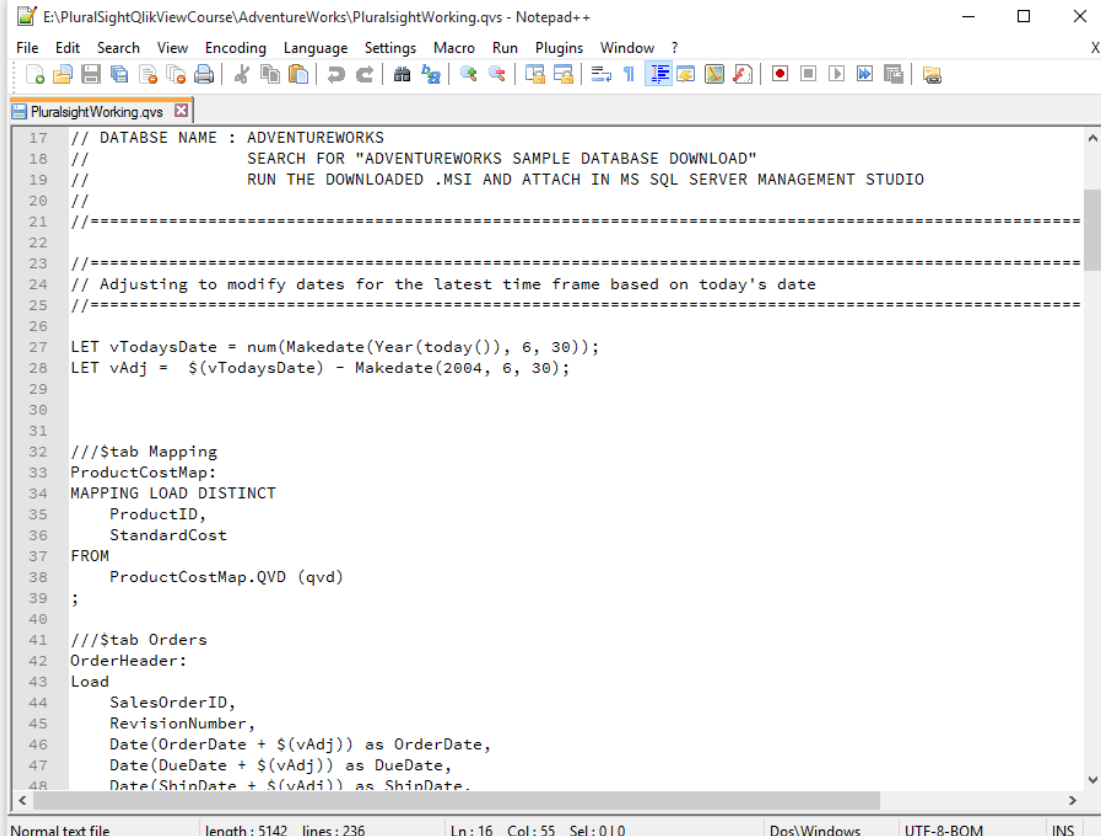
| SalesOrderID | SalesOrderD... | CarrierTrack... | OrderQty | ProductID | SpecialOfferID | UnitPrice | UnitPriceDis... | LineTotal | rowguid         | ModifiedDate |
|--------------|----------------|-----------------|----------|-----------|----------------|-----------|-----------------|-----------|-----------------|--------------|
| 43659        | 1              | 4911-403C-98    | 1        | 776       | 1              | 2024.994  | 0               | 2024.994  | (B207C96D-D...  | 37073        |
| 43659        | 2              | 4911-403C-98    | 3        | 777       | 1              | 2024.994  | 0               | 6074.982  | (7ABB600D-1...  | 37073        |
| 43659        | 3              | 4911-403C-98    | 1        | 778       | 1              | 2024.994  | 0               | 2024.994  | (475CF8C6-4...  | 37073        |
| 43659        | 4              | 4911-403C-98    | 1        | 771       | 1              | 2039.994  | 0               | 2039.994  | (04C4DE91-5...  | 37073        |
| 43659        | 5              | 4911-403C-98    | 1        | 772       | 1              | 2039.994  | 0               | 2039.994  | (5A74CTD2-E...  | 37073        |
| 43659        | 6              | 4911-403C-98    | 2        | 773       | 1              | 2039.994  | 0               | 4079.988  | (CE472532-A...  | 37073        |
| 43659        | 7              | 4911-403C-98    | 1        | 774       | 1              | 2039.994  | 0               | 2039.994  | (80667840-F9... | 37073        |
| 43659        | 8              | 4911-403C-98    | 3        | 714       | 1              | 28.8404   | 0               | 86.5212   | (E9D54907-E...  | 37073        |
| 43659        | 9              | 4911-403C-98    | 1        | 716       | 1              | 28.8404   | 0               | 28.8404   | (AA542630-B...  | 37073        |
| 43659        | 10             | 4911-403C-98    | 6        | 709       | 1              | 5.7       | 0               | 34.2      | (AC769034-3...  | 37073        |
| 43659        | 11             | 4911-403C-98    | 2        | 712       | 1              | 5.1865    | 0               | 10.373    | (06A66921-6...  | 37073        |
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| 43660        | 13             | 6431-4D57-83    | 1        | 762       | 1              | 419.4589  | 0               | 419.4589  | (419A1302-A...  | 37073        |
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| 43661        | 15             | 4E0A-4F89-AE    | 1        | 745       | 1              | 809.76    | 0               | 809.76    | (EDE1759E-6...  | 37073        |
| 43661        | 16             | 4E0A-4F89-AE    | 1        | 743       | 1              | 714.7043  | 0               | 714.7043  | (FE10BF09-D...  | 37073        |
| 43661        | 17             | 4E0A-4F89-AE    | 2        | 747       | 1              | 714.7043  | 0               | 1429.4086 | (B136852E-2...  | 37073        |
| 43661        | 18             | 4E0A-4F89-AE    | 4        | 712       | 1              | 5.1865    | 0               | 20.746    | (F0F410B6-B...  | 37073        |
| 43661        | 19             | 4E0A-4F89-AE    | 4        | 715       | 1              | 28.8404   | 0               | 115.3616  | (AE4CDA7D-...   | 37073        |
| 43661        | 20             | 4E0A-4F89-AE    | 2        | 742       | 1              | 722.5949  | 0               | 1445.1898 | (054A9D3B-A...  | 37073        |
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| 43661        | 24             | 4E0A-4F89-AE    | 2        | 741       | 1              | 818.7     | 0               | 1637.4    | (2F911593-E3... | 37073        |
| 43661        | 25             | 4E0A-4F89-AE    | 4        | 776       | 1              | 2024.994  | 0               | 8099.976  | (E8E15B60-3...  | 37073        |
| 43661        | 26             | 4E0A-4F89-AE    | 2        | 773       | 1              | 2039.994  | 0               | 4079.988  | (4373070F-4E... | 37073        |
| 43661        | 27             | 4E0A-4F89-AE    | 2        | 716       | 1              | 28.8404   | 0               | 57.6808   | (D87D5EDB-...   | 37073        |
| 43661        | 28             | 4E0A-4F89-AE    | 2        | 777       | 1              | 2024.994  | 0               | 4049.988  | (C5762004-D...  | 37073        |
| 43661        | 29             | 4E0A-4F89-AE    | 5        | 708       | 1              | 20.1865   | 0               | 100.9325  | (6C0D0601-7...  | 37073        |
| 43662        | 30             | 2E53-4802-85    | 3        | 764       | 1              | 419.4589  | 0               | 1258.3767 | (2DFD4D76-E...  | 37073        |

100,000 rows loaded in 0.21 seconds 11x100,000 1 NUM Count: 12 Ready

QVD viewer available at <http://easyqlik.com/>

# QlikView Script

The code that loads the data

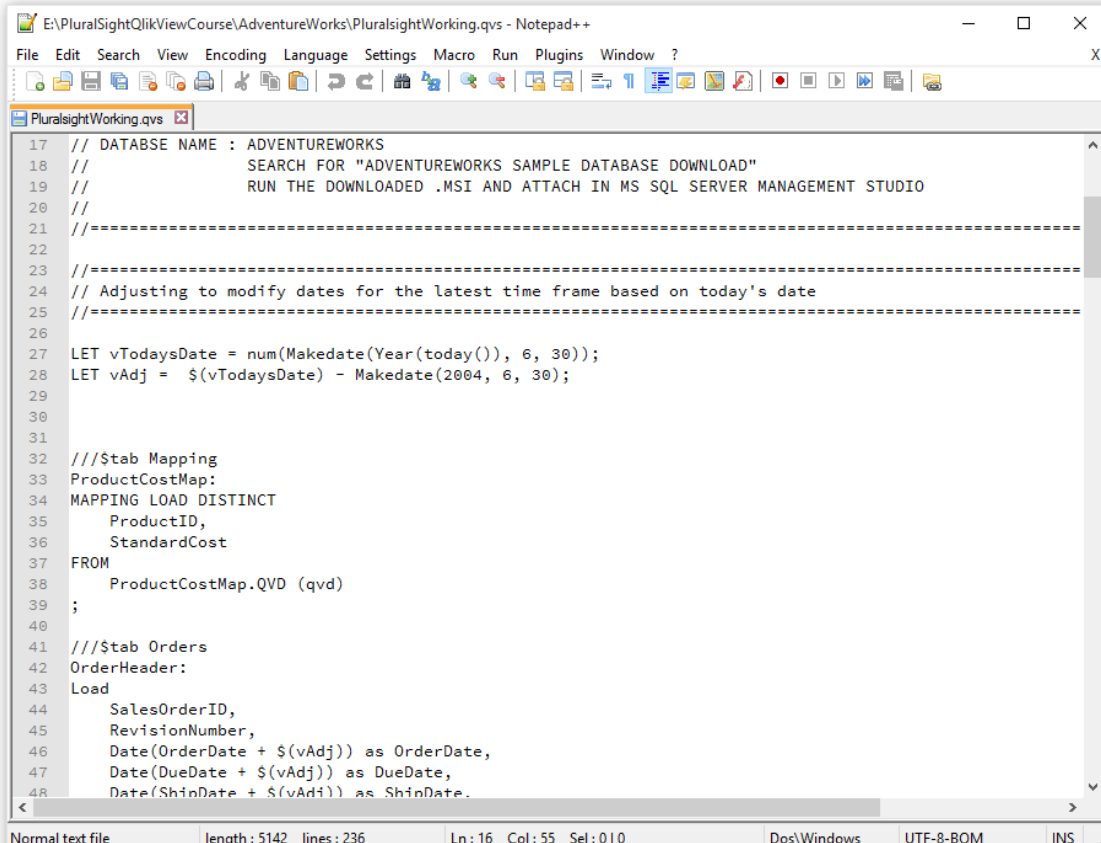


```
17 // DATABASE NAME : ADVENTUREWORKS
18 //      SEARCH FOR "ADVENTUREWORKS SAMPLE DATABASE DOWNLOAD"
19 //      RUN THE DOWNLOADED .MSI AND ATTACH IN MS SQL SERVER MANAGEMENT STUDIO
20 //
21 //=====
22
23 //=====
24 // Adjusting to modify dates for the latest time frame based on today's date
25 //=====
26
27 LET vTodaysDate = num(Makedate(Year(today()), 6, 30));
28 LET vAdj = $(vTodaysDate) - Makedate(2004, 6, 30);
29
30
31
32 ///$tab Mapping
33 ProductCostMap:
34 MAPPING LOAD DISTINCT
35     ProductID,
36     StandardCost
37 FROM
38     ProductCostMap.QVD (qvd)
39 ;
40
41 ///$tab Orders
42 OrderHeader:
43 Load
44     SalesOrderID,
45     RevisionNumber,
46     Date(OrderDate + $(vAdj)) as OrderDate,
47     Date(DueDate + $(vAdj)) as DueDate,
48     Date(ShipDate + $(vAdj)) as ShipDate;
```

Normal text file | length: 5142 | lines: 236 | Ln: 16 Col: 55 Sel: 0 | 0 | Dos/Windows | UTF-8-BOM | INS

# QlikView Script

The code that loads the data  
Loads top to bottom, left to right



```
E:\PluralSightQlikViewCourse\AdventureWorks\PluralSightWorking.qvs - Notepad++
File Edit Search View Encoding Language Settings Macro Run Plugins Window ?
PluralSightWorking.qvs
17 // DATABASE NAME : ADVENTUREWORKS
18 // SEARCH FOR "ADVENTUREWORKS SAMPLE DATABASE DOWNLOAD"
19 // RUN THE DOWNLOADED .MSI AND ATTACH IN MS SQL SERVER MANAGEMENT STUDIO
20 //
21 //=====
22
23 //=====
24 // Adjusting to modify dates for the latest time frame based on today's date
25 //=====
26
27 LET vTodaysDate = num(Makedate(Year(today()), 6, 30));
28 LET vAdj = $(vTodaysDate) - Makedate(2004, 6, 30);
29
30
31
32 ///$tab Mapping
33 ProductCostMap:
34 MAPPING LOAD DISTINCT
35 ProductID,
36 StandardCost
37 FROM
38 ProductCostMap.QVD (qvd)
39 ;
40
41 ///$tab Orders
42 OrderHeader:
43 Load
44 SalesOrderID,
45 RevisionNumber,
46 Date(OrderDate + $(vAdj)) as OrderDate,
47 Date(DueDate + $(vAdj)) as DueDate,
48 Date(ShipDate + $(vAdj)) as ShipDate.
```

Normal text file length: 5142 lines: 236 Ln: 16 Col: 55 Sel: 0 | 0 Dos\Windows UTF-8-BOM INS

# Three to Get Ready

Unzip the QVDs  
and script

Copy the script into  
the editor

Set up your  
defaults



# Wrap It Up

Import Excel Data

AdventureWorks Data  
Model w/ QVDs

Set Up Defaults