

# **ARMDD**

# **EXERCISE 9 TUTORIAL**

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DEI-ISEP

File Edit View Git Debug Analyze Tools Extensions Window Help Search (Ctrl+Q) PO

Create a new project

Recent project templates

- Integration Services Project
- Analysis Services Multidimensional Project
- Integration Services Import Project Wizard

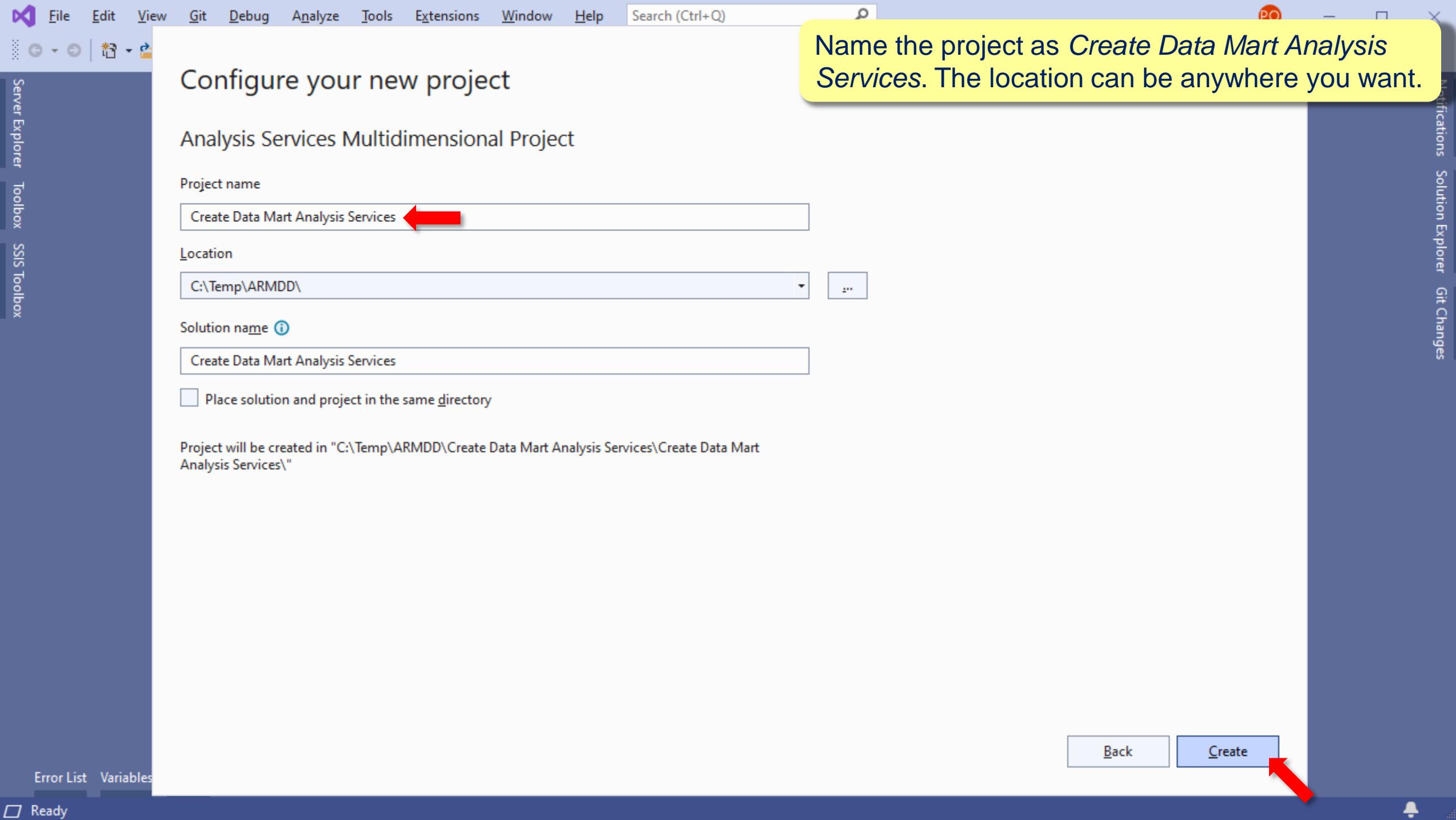
Search for templates All languages All platforms All project types

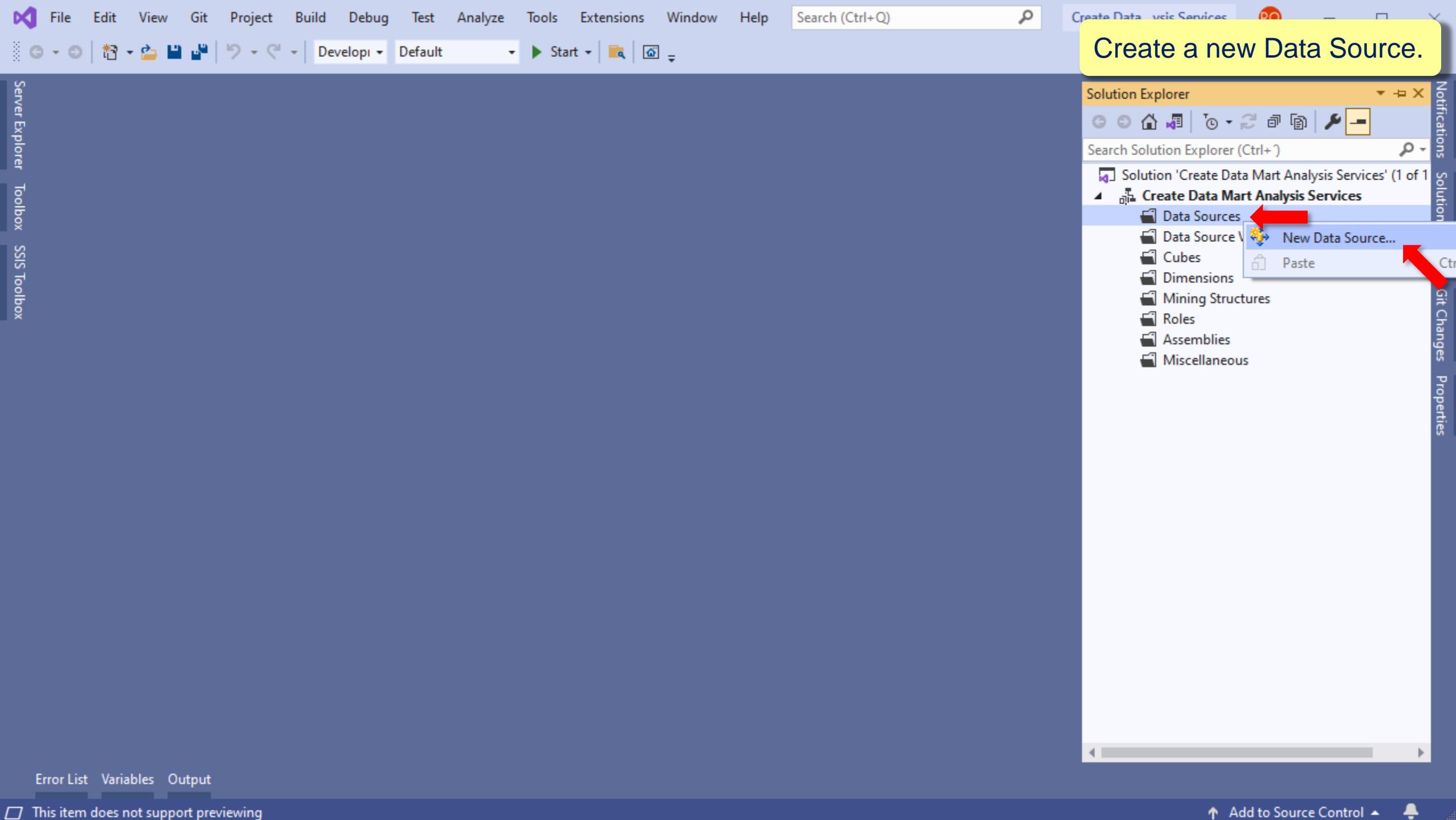
- Analysis Services Multidimensional Project** An Analysis Services project for creating multidimensional models.
- Import from Server (Multidimensional)  
Creates a multidimensional project by extracting the metadata from an existing multidimensional on an Analysis Services server.
- Integration Services Project (Azure-Enabled)  
This project may be used for building high performance data integration and workflow solutions that can also be run/debugged on SSIS Platform-as-a-Service (PaaS) in Azure Data Factory.
- Integration Services Project  
This project may be used for building high performance data integration and workflow solutions that can be run on SSIS catalog, including extraction, transformation, and loading (ETL) operations for data warehousing.
- Integration Services Import Project Wizard  
A wizard that assists you in creating a new Integration Services (SSIS) project that is based on an existing one. Import from a project deployment file (.ispac extension) or from an Integration Services catalog on an instance of SQL Server.
- Analysis Services Tabular Project  
An Analysis Services project for creating tabular models.

Back Next

Start Visual Studio and then start by creating a new project for this tutorial. Select **Analysis Services Multidimensional Project** as the template.

Error List Variables Ready





Server Explorer Toolbox SSIS Toolbox

Develop Default Start

Solution Explorer

Search Solution Explorer (Ctrl+F)

Solution 'Create Data Mart Analysis Services' (1 of 1)

Create Data Mart Analysis Services

- Data Sources
- Data Source Views
- Cubes
- Dimensions
- Mining Structures
- Roles
- Assemblies
- Miscellaneous

Data Source Wizard

## Welcome to the Data Source Wizard

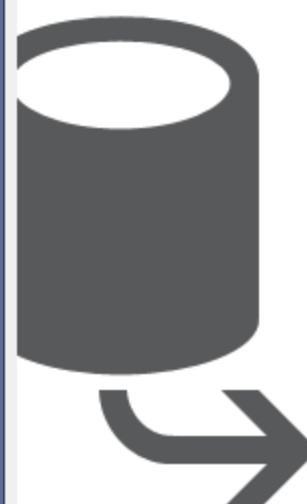
Use this wizard to create a new data source.

A data source represents a connection to your data.

A data source does not provide features such as caching metadata, adding relationships, adding calculations, and adding annotations. To apply these features to a data source, use this wizard to create the data source, and then use Data Source View Wizard to create a view that includes the appropriate features.

Don't show this page again

< Back **Next >** Finish >> Cancel



Server Explorer Toolbox SSIS Toolbox

Solution Explorer

Search Solution Explorer (Ctrl+F)

Solution 'Create Data Mart Analysis Services' (1 of 1)

Create Data Mart Analysis Services

- Data Sources
- Data Source Views
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- Roles
- Assemblies
- Miscellaneous

Data Source Wizard

Select how to define the connection

You can select from a number of ways in which your data source will define its connection

Create a data source based on another object

Create a data source based on an existing or new connection

Data connections:

- (local).AdventureWorksDW2022
- (local).ARMDD\_StagingArea

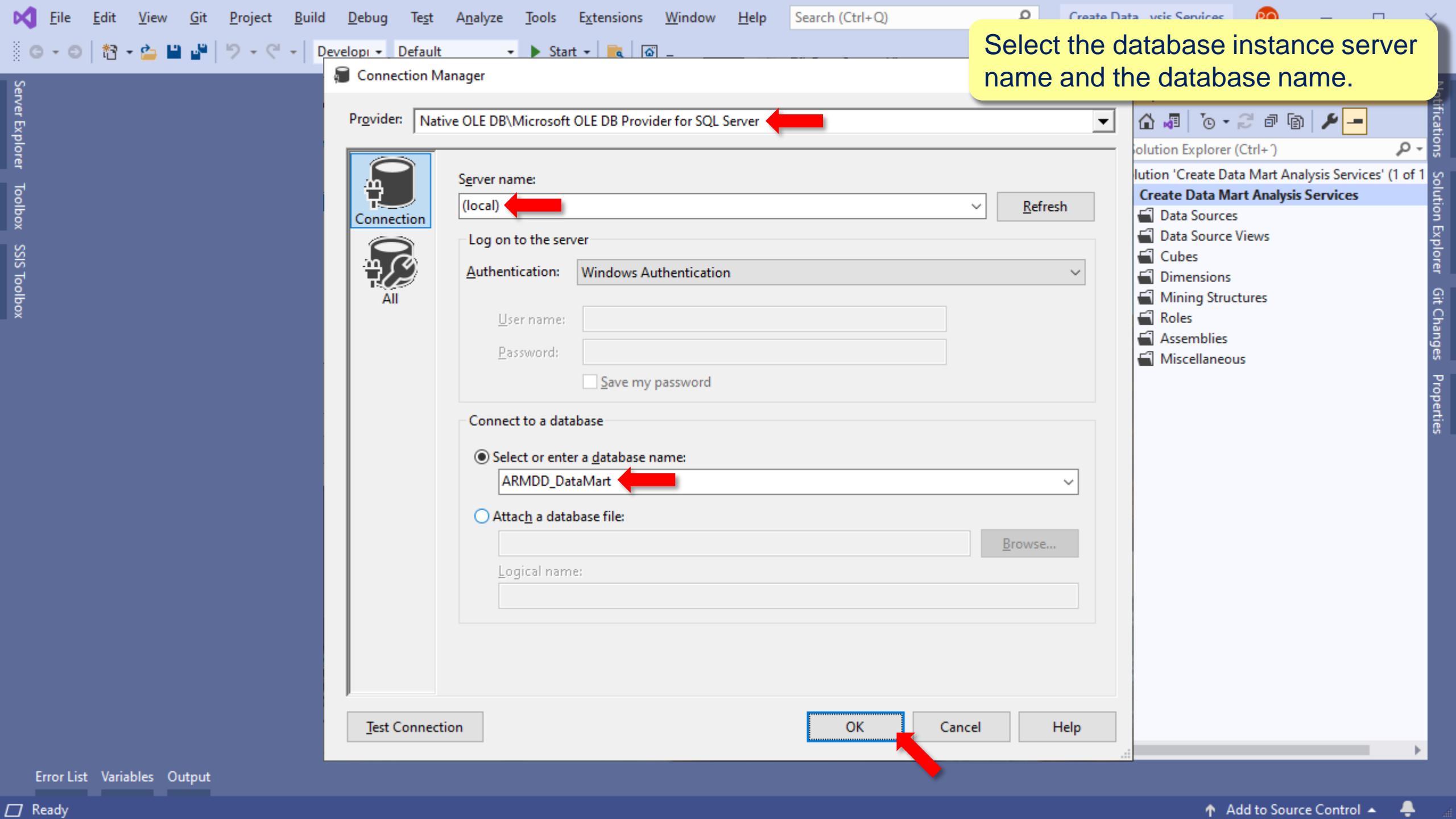
Data connection properties:

Property	Value
Data Source	(local)
Initial Catalog	AdventureWorksDW20...
Integrated Se...	SSPI
Provider	SQLOLEDB.1

New... Delete

< Back Next >| Finish >> Cancel

Error List Variables Output



Server Explorer Toolbox SSIS Toolbox

Solution Explorer

Search Solution Explorer (Ctrl+F)

Solution 'Create Data Mart Analysis Services' (1 of 1)

Create Data Mart Analysis Services

- Data Sources
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Data Source Wizard

Select how to define the connection

You can select from a number of ways in which your data source will define its connection

Create a data source based on another object

Create a data source based on an existing or new connection

Data connections:

- (local).AdventureWorksDW2022
- (local).ARMDD\_DataMart
- (local).ARMDD\_StagingArea

Data connection properties:

Property	Value
Data Source	(local)
Initial Catalog	ARMDD_DataMart
Integrated Se...	SSPI
Provider	SQLOLEDB.1

New... Delete

< Back Next >| Finish >> Cancel



Server Explorer Toolbox SSIS Toolbox

Solution Explorer

Search Solution Explorer (Ctrl+F)

Solution 'Create Data Mart Analysis Services' (1 of 1)

Create Data Mart Analysis Services

- Data Sources
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- Miscellaneous

Data Source Wizard

Impersonation Information

You can define what Windows credentials Analysis Services will use to connect to the data source.

Use a specific Windows user name and password

User name:

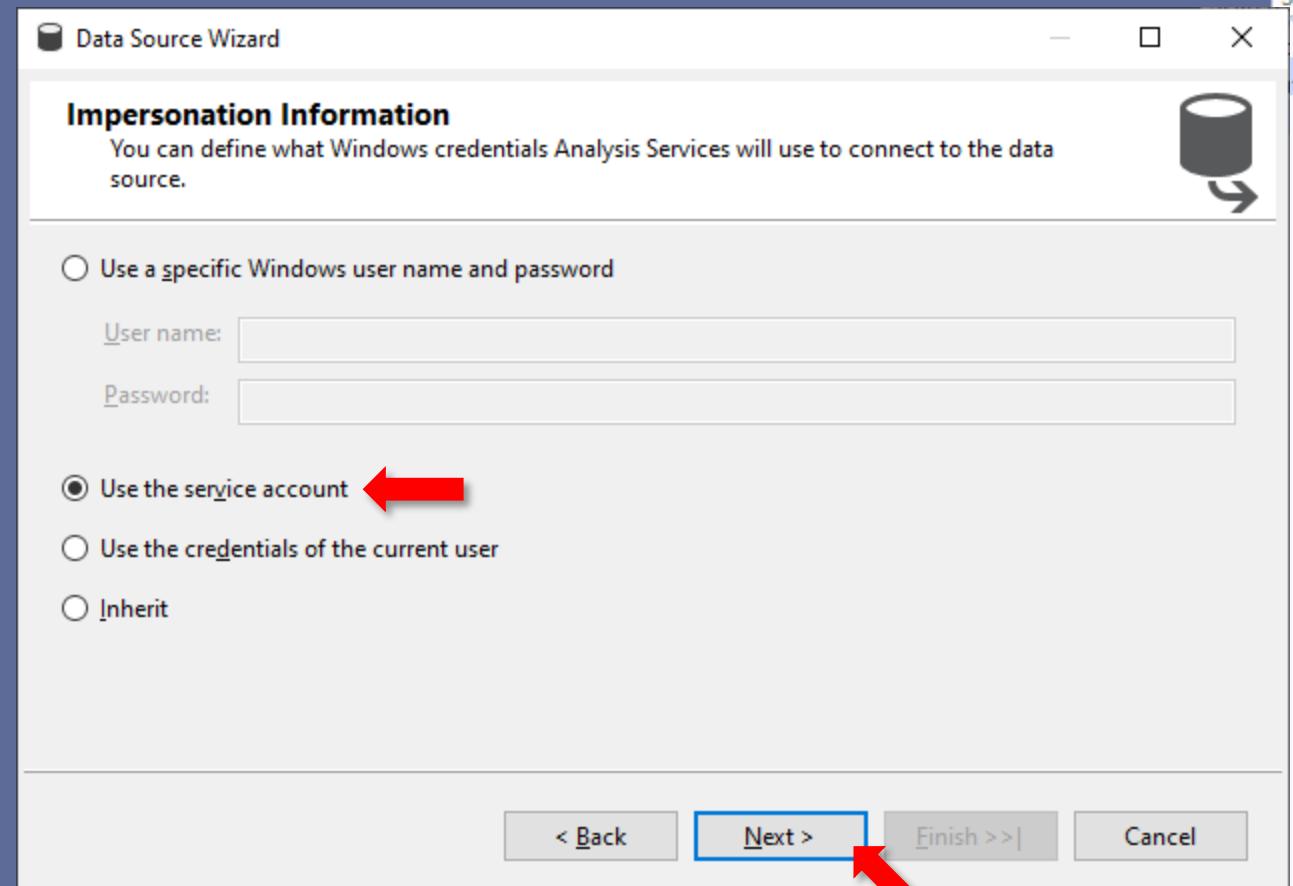
Password:

Use the service account

Use the credentials of the current user

Inherit

< Back Next > Finish >> Cancel



Server Explorer Toolbox SSIS Toolbox

Solution Explorer

Search Solution Explorer (Ctrl+F)

Solution 'Create Data Mart Analysis Services' (1 of 1)

>Create Data Mart Analysis Services

- Data Sources
- Data Source Views
- Cubes
- Dimensions
- Mining Structures
- Roles
- Assemblies
- Miscellaneous

Data Source Wizard

Completing the Wizard

Provide a name and then click Finish to create the new data source.

Data source name:

ARMDD Data Mart

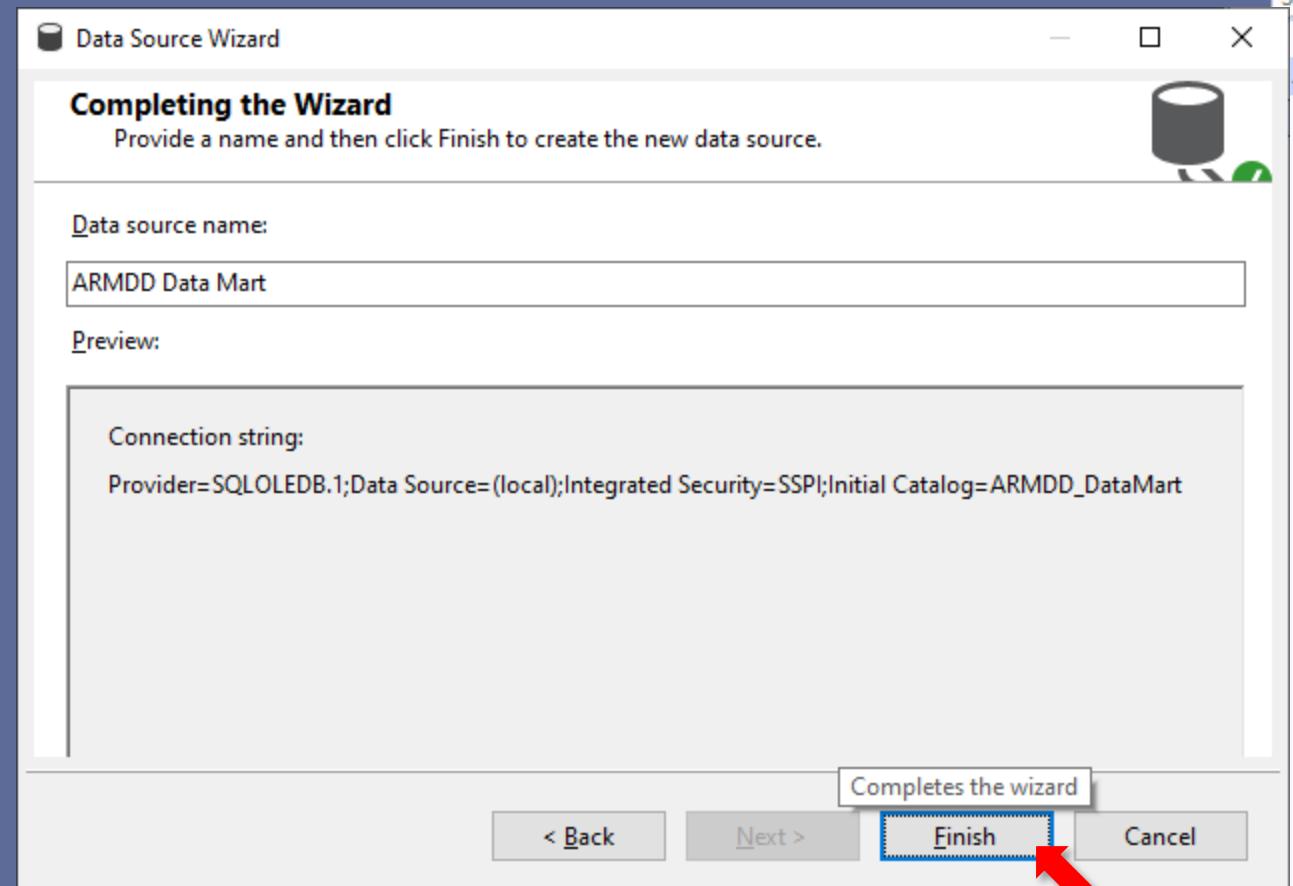
Preview:

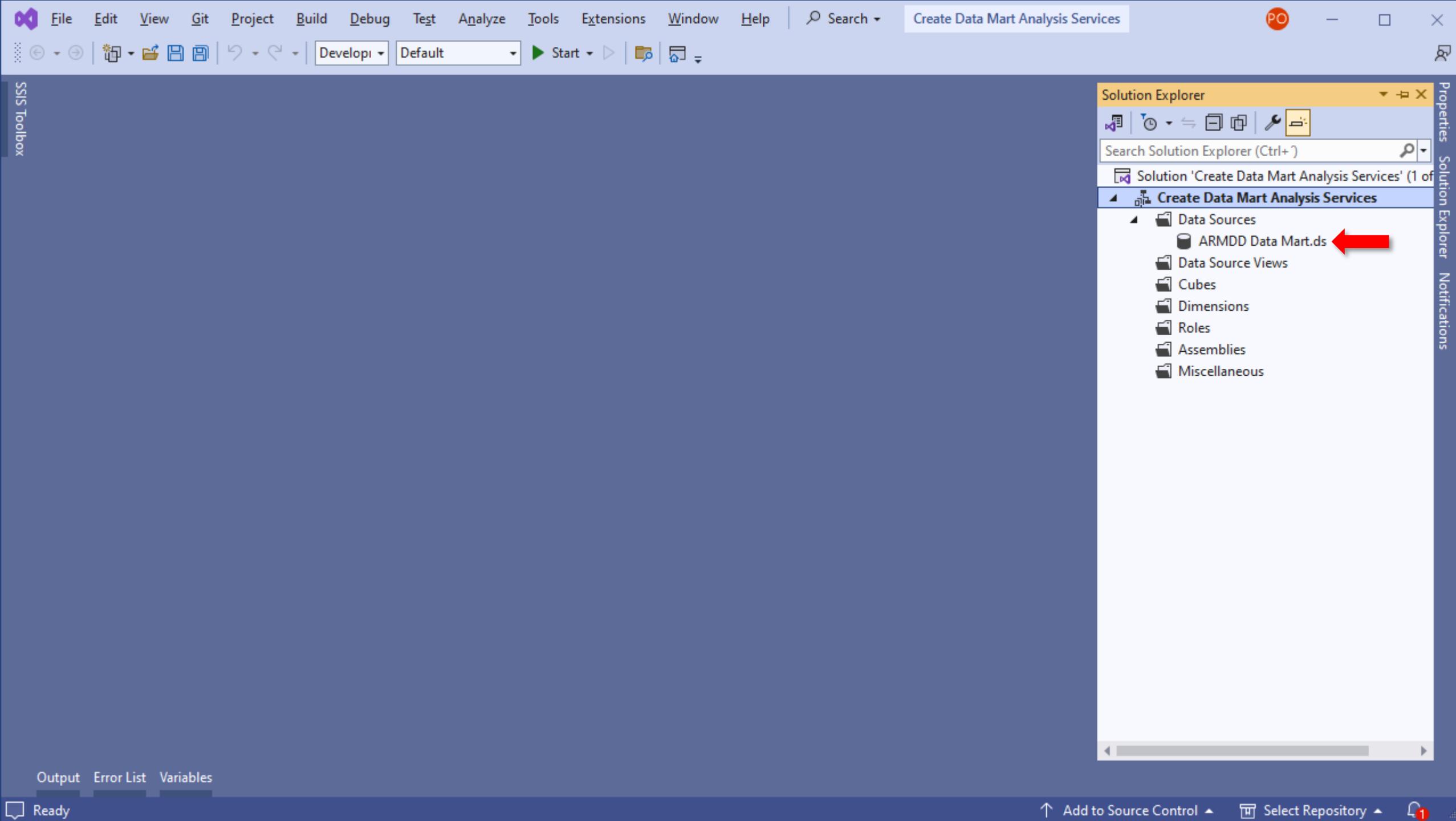
Connection string:

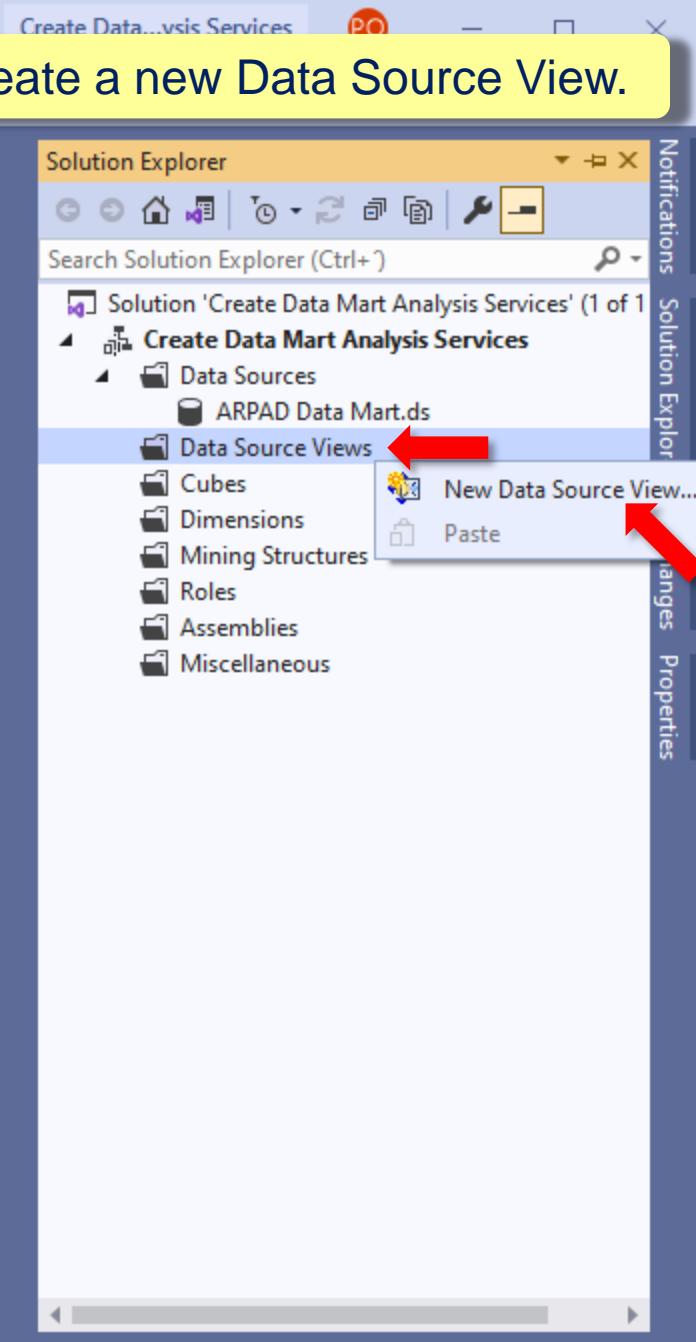
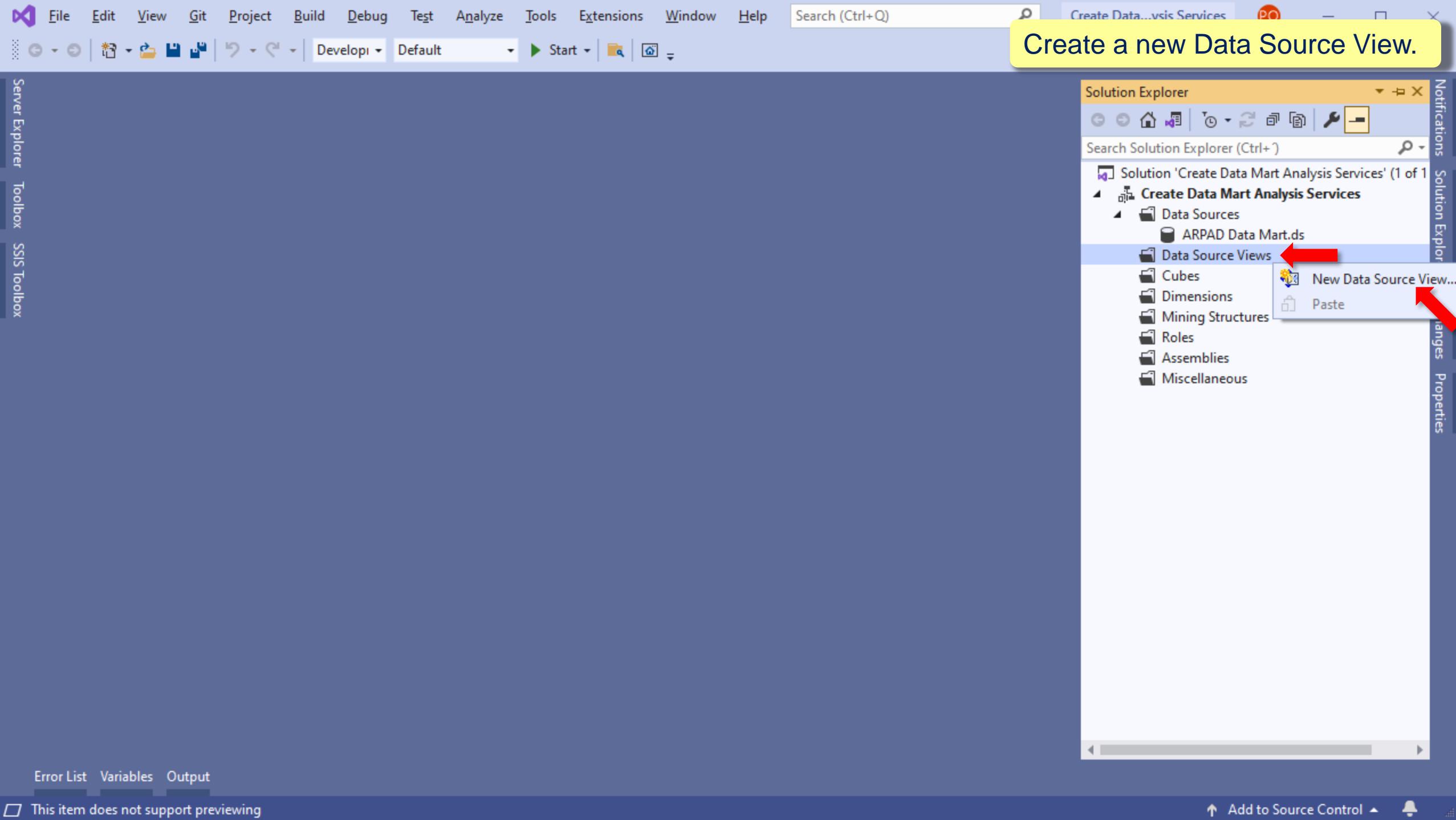
```
Provider=SQLOLEDB.1;Data Source=(local);Integrated Security=SSPI;Initial Catalog=ARMDD_DataMart
```

Completes the wizard

< Back Next > Finish Cancel







Error List Variables Output

This item does not support previewing

Add to Source Control



Server Explorer Toolbox SSIS Toolbox

Develop Default Start

Solution Explorer

Search Solution Explorer (Ctrl+F)

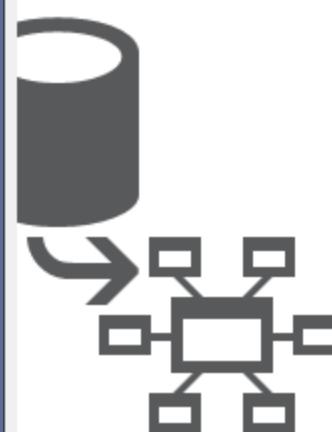
Solution 'Create Data Mart Analysis Services' (1 of 1)

- Create Data Mart Analysis Services
  - Data Sources
    - ARPAD Data Mart.ds
  - Data Source Views
  - Cubes
  - Dimensions
  - Mining Structures
  - Roles
  - Assemblies
  - Miscellaneous

Notifications Solution Explorer Git Changes Properties

**Data Source View Wizard**

## Welcome to the Data Source View Wizard



Use this wizard to create a new data source view.

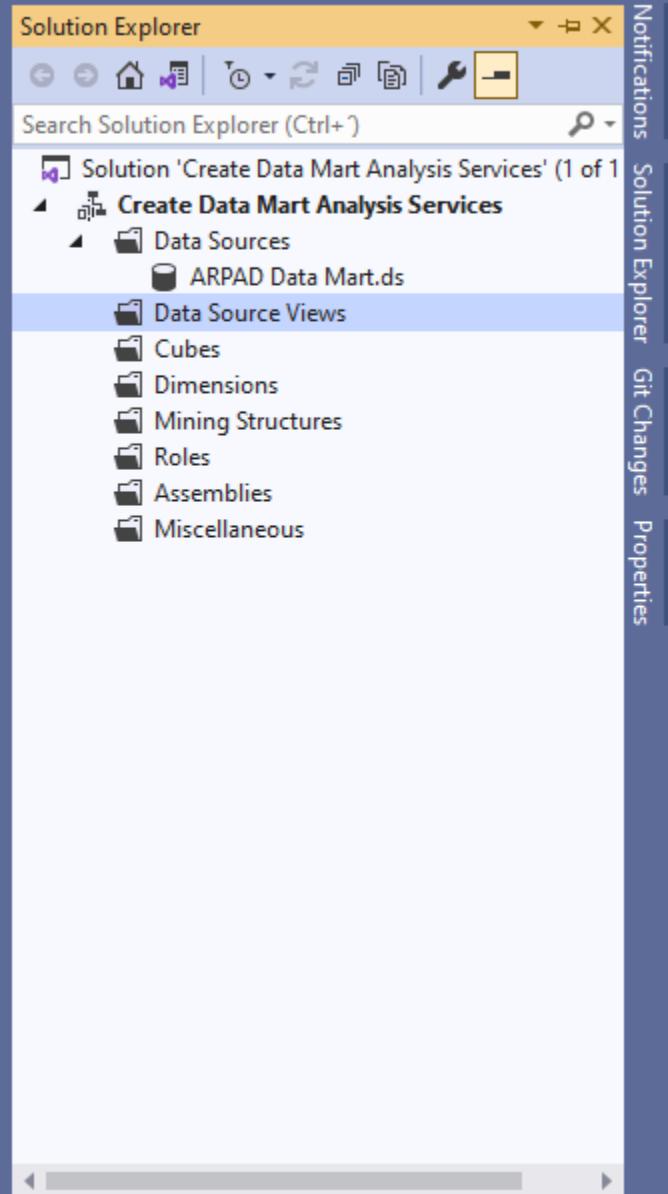
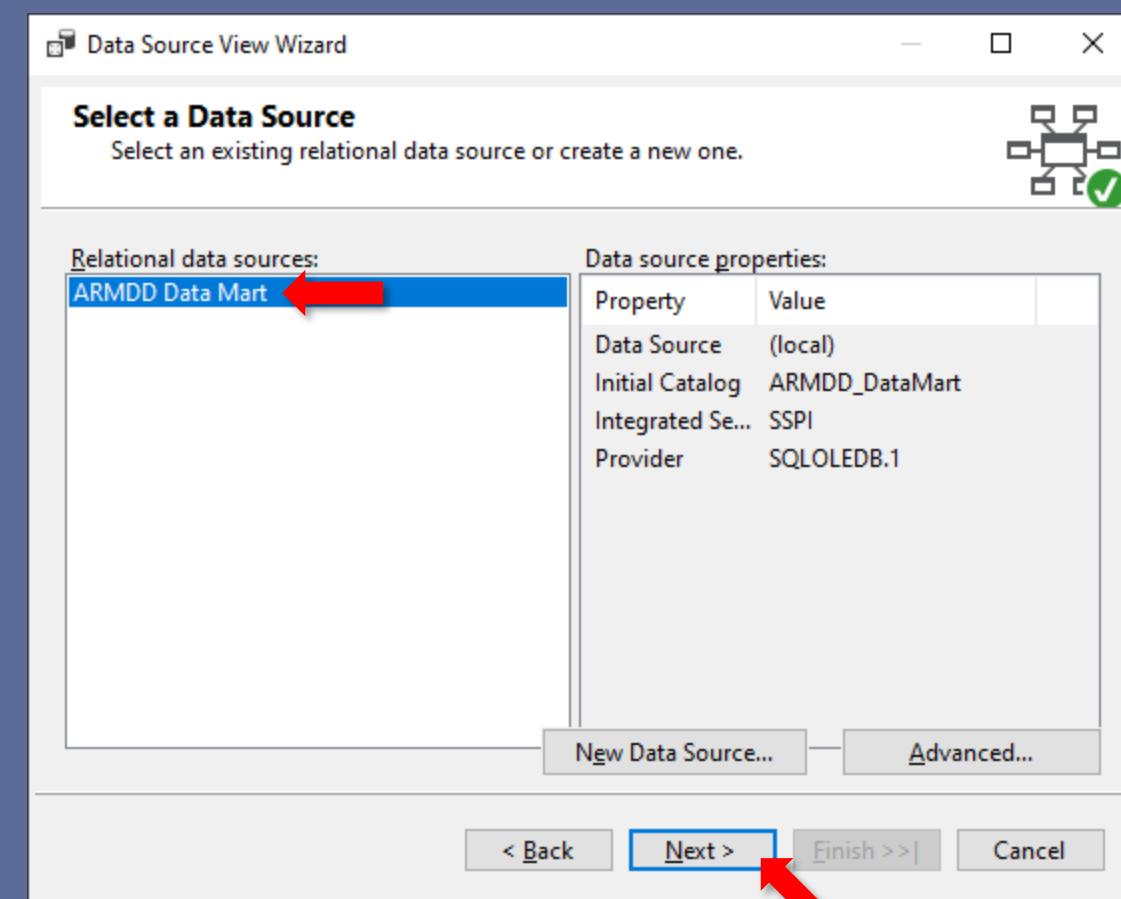
You create a data source view from tables and views in a relational database.

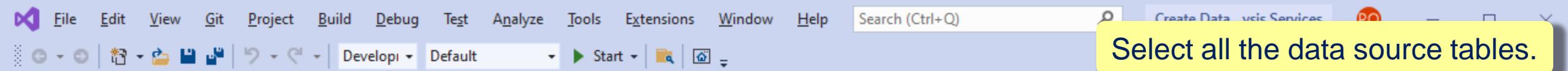
A data source provides a simple connection to a relational database. Use a data source view for more advanced features, such as caching metadata, adding relationships, creating calculations, and setting logical keys.

Don't show this page again

< Back **Next >** Finish >> Cancel

Select the data source previously created.





Select all the data source tables.

Solution Explorer

Search Solution Explorer (Ctrl+F)

Solution 'Create Data Mart Analysis Services' (1 of 1)

- Create Data Mart Analysis Services
  - Data Sources
    - ARPAD Data Mart.ds
  - Data Source Views
  - Cubes
  - Dimensions
  - Mining Structures
  - Roles
  - Assemblies
  - Miscellaneous

Notifications Solution Explorer Git Changes Properties

Server Explorer Toolbox SSIS Toolbox

Solution Explorer Notifications Solution Explorer Git Changes Properties

**Data Source View Wizard**

**Select Tables and Views**  
Select objects from the relational database to be included in the data source view.

**Available objects:**

Name	Type

**Included objects:**

Name	Type
DimCard (dbo)	Table
DimDate (dbo)	Table
DimItem (dbo)	Table
DimPaymentMethod (dbo)	Table
DimStore (dbo)	Table
DimTime (dbo)	Table
FactSales (dbo)	Table

Show system objects

A red arrow points to the "Next >" button at the bottom of the wizard window.

Server Explorer Toolbox SSIS Toolbox

Develop Default Start

Data Source View Wizard

**Completing the Wizard**  
Provide a name, and then click Finish to create the new data source view.

Name: ARMDD Data Mart

Preview:

- ARMDD Data Mart
  - DimCard (dbo)
  - DimDate (dbo)
  - DimItem (dbo)
  - DimPaymentMethod (dbo)
  - DimStore (dbo)
  - DimTime (dbo)
  - FactSales (dbo)

Completes the wizard

< Back Next > **Finish** Cancel

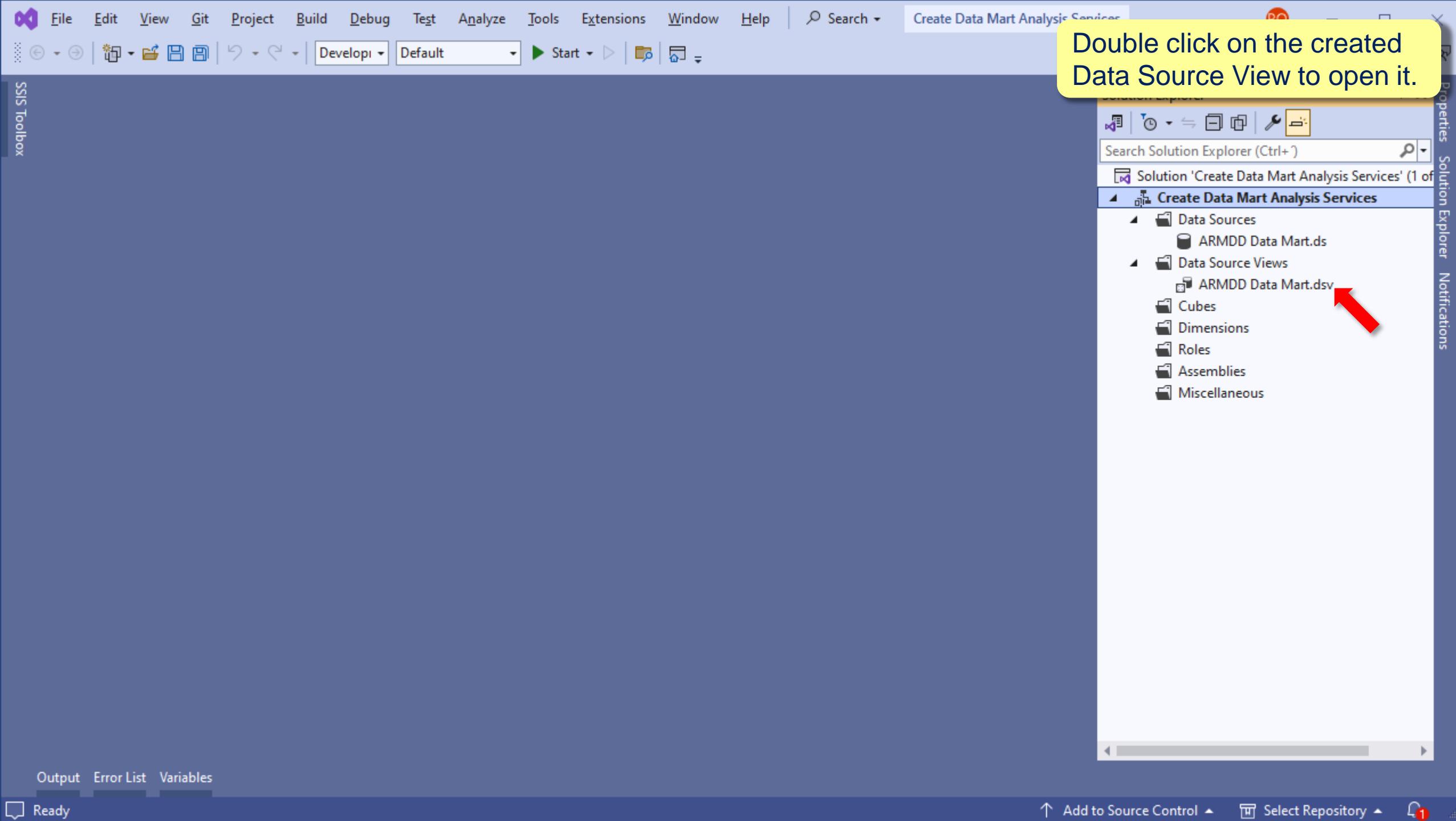
Solution Explorer

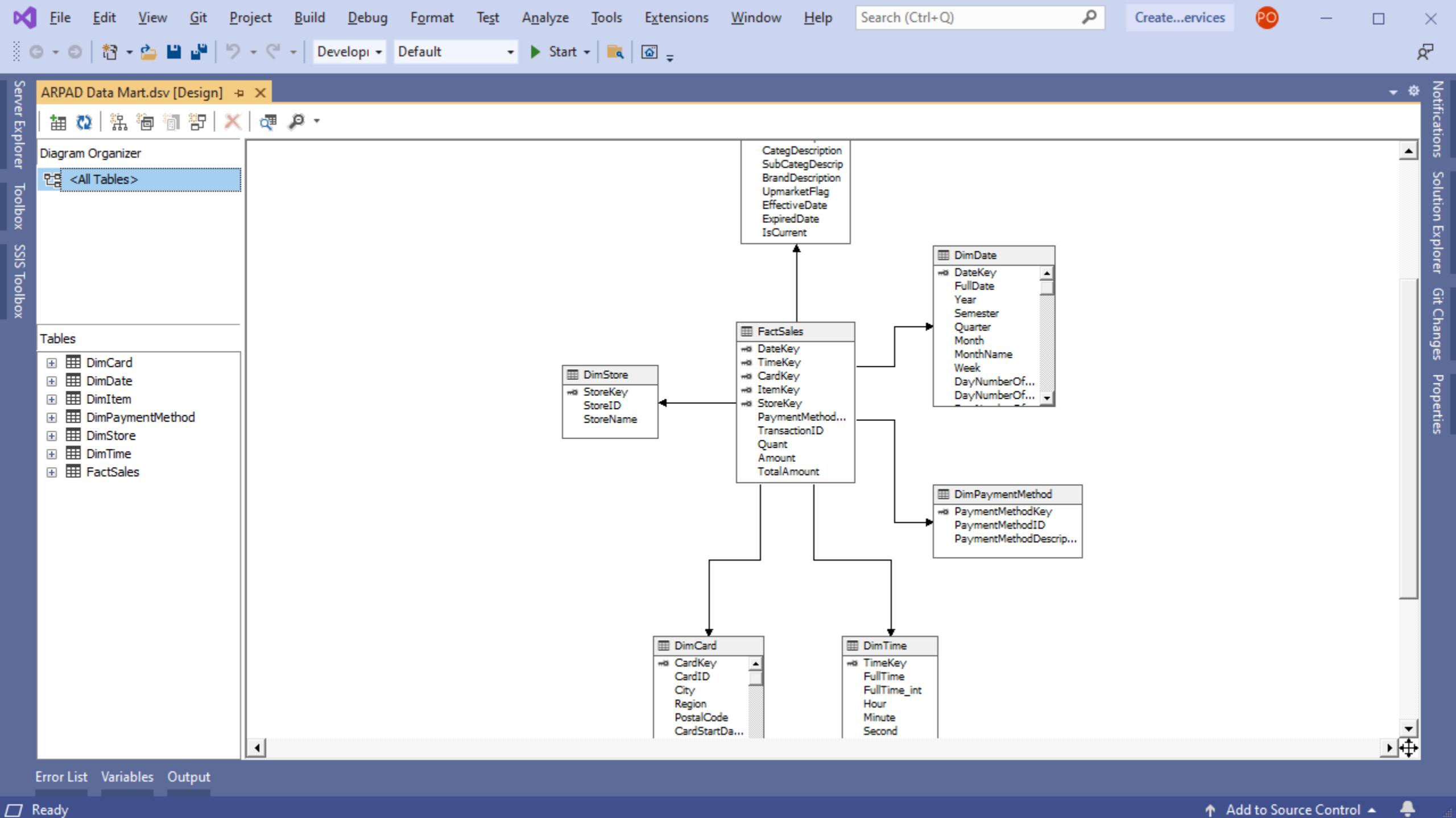
Search Solution Explorer (Ctrl+F)

Solution 'Create Data Mart Analysis Services' (1 of 1)

- Create Data Mart Analysis Services
  - Data Sources
    - ARPAD Data Mart.ds
  - Data Source Views
  - Cubes
  - Dimensions
  - Mining Structures
  - Roles
  - Assemblies
  - Miscellaneous

Notifications Solution Explorer Git Changes Properties





**Create a New Cube.**

The screenshot shows the Microsoft SQL Server Data Tools (SSDT) interface. The title bar reads "ARPAD Data Mart.dsv [Design]". The ribbon menu includes File, Edit, View, Git, Project, Build, Debug, Test, Analyze, Tools, Extensions, Window, Help, and Search (Ctrl+Q). A yellow callout bubble in the top right corner says "Create a New Cube." A red arrow points from the "Cubes" item in the Solution Explorer ribbon to a context menu option "New Cube...".

**Solution Explorer**

- Solution 'Create Data Mart Analysis Services' (1 of 1)
  - Create Data Mart Analysis Services
    - Data Sources
      - ARPAD Data Mart.ds
    - Data Source Views
      - ARPAD Data Mart.dsv
    - Cubes **New Cube...**
    - Dimensions
    - Mining
    - Roles
    - Assemblies
    - Miscellaneous

**Diagram Organizer**

**Tables**

- DimCard
- DimDate
- DimItem
- DimPaymentMethod
- DimStore
- DimTime
- FactSales

**Diagram**

```
graph TD; FactSales --> DimCard; FactSales --> DimDate; FactSales --> DimItem; FactSales --> DimPaymentMethod; FactSales --> DimTime; DimCard --> DimStore; DimDate --> DimStore; DimItem --> DimStore; DimPaymentMethod --> DimStore; DimTime --> DimStore; DimCard --> DimCardDetail[DimCard]; DimDate --> DimDateDetail[DimDate]; DimItem --> DimItemDetail[DimItem]; DimPaymentMethod --> DimPaymentMethodDetail[DimPaymentMethod]; DimTime --> DimTimeDetail[DimTime];
```

**Error List** Variables Output

This item does not support previewing

Add to Source Control

Screenshot of the Microsoft SQL Server Data Tools (SSDT) interface showing the Cube Wizard.

The title bar shows "ARPAD Data Mart.dsv [Design]".

The left sidebar includes "Diagram Organizer", "Tables" (listing DimCard, DimDate, DimItem, DimPaymentMethod, DimStore, DimTime, FactSales), and "SSIS Toolbox".

The main area displays the "Cube Wizard" window with the title "Welcome to the Cube Wizard". It features a large cube icon and a descriptive text: "Use this wizard to create a new cube. First, you select the data source view and tables for the cube, and then you set its properties. You can also opt to create a cube without using a data source." A checkbox "Don't show this page again" is present.

The bottom of the wizard window has buttons: "< Back", "Next >" (highlighted with a red arrow), "Finish >>", and "Cancel".

The Solution Explorer on the right shows a project named "Create Data Mart Analysis Services" with items like Data Sources, Data Source Views, Cubes (selected), Dimensions, Mining Structures, Roles, Assemblies, and Miscellaneous.

The status bar at the bottom includes "Error List", "Variables", "Output", "This item does not support previewing", "Add to Source Control", and a notifications bell icon.

Screenshot of the Microsoft SQL Server Data Tools (SSDT) interface showing the Cube Wizard.

The title bar shows "ARPAD Data Mart.dsv [Design]".

The left sidebar includes "Diagram Organizer", "Tables" (listing DimCard, DimDate, DimItem, DimPaymentMethod, DimStore, DimTime, FactSales), and "SSIS Toolbox".

The main area displays the "Cube Wizard - Select Creation Method" dialog. It contains the following sections:

- Select Creation Method:** Cubes can be created by using existing tables, creating an empty cube, or generating tables in the data source.
- How would you like to create the cube?**
  - Use existing tables (highlighted with a red arrow)
  - Create an empty cube
  - Generate tables in the data source
- Template:** (None)
- Description:** Create a cube based on one or more tables in a data source.

At the bottom of the dialog are buttons: < Back, Next >, Finish >>, and Cancel. The "Next >" button is highlighted with a red arrow.

The Solution Explorer on the right shows the project structure:

- Solution 'Create Data Mart Analysis Services' (1 of 1)
  - Create Data Mart Analysis Services
    - Data Sources
      - ARPAD Data Mart.ds
    - Data Source Views
      - ARPAD Data Mart.dsv
    - Cubes (highlighted with a blue selection bar)
    - Dimensions
    - Mining Structures
    - Roles
    - Assemblies
    - Miscellaneous

At the bottom, there are tabs for Error List, Variables, Output, and a status message: "This item does not support previewing".

Select the table that contains the facts (measures).

The screenshot shows the 'Cube Wizard' dialog box in the center of the screen. The title bar says 'Select Measure Group Tables'. The main area has a heading 'Data source view:' with a dropdown menu showing 'ARPAD Data Mart'. Below it is a section titled 'Measure group tables:' containing a list of tables: DimCard, DimDate, DimItem, DimPaymentMethod, DimStore, DimTime, and FactSales. The 'FactSales' checkbox is checked and highlighted with a red arrow. At the bottom of the dialog are buttons for '< Back', 'Next >', 'Finish >>', and 'Cancel'. A yellow callout bubble points to the 'FactSales' checkbox with the instruction: 'Select the table that contains the facts (measures)'. To the left of the dialog is a 'Tables' pane listing DimCard, DimDate, DimItem, DimPaymentMethod, DimStore, DimTime, and FactSales. To the right is the 'Solution Explorer' pane showing a project structure under 'Create Data Mart Analysis Services'.

File Edit View Git Project Build Debug Test Analyze Tools Extensions Window Help Search (Ctrl+Q)

Develop Default Start

ARPAD Data Mart.dsv [Design]

Diagram Organizer

<All Tables>

Tables

- DimCard
- DimDate
- DimItem
- DimPaymentMethod
- DimStore
- DimTime
- FactSales

Cube Wizard

Select Measure Group Tables

Select a data source view or diagram and then select the tables that will be used for measure groups.

Data source view:

ARPAD Data Mart

Measure group tables:

- DimCard
- DimDate
- DimItem
- DimPaymentMethod
- DimStore
- DimTime
- FactSales

Suggest

< Back

Next >

Finish >>

Cancel

City  
Region  
PostalCode  
CardStartDa...

Hour  
Minute  
Second

Search Solution Explorer (Ctrl+F)

Solution Explorer

Create Data Mart Analysis Services (1 of 1)

- Create Data Mart Analysis Services
  - Data Sources
    - ARPAD Data Mart.ds
  - Data Source Views
    - ARPAD Data Mart.dsv
  - Cubes
  - Dimensions
  - Mining Structures
  - Roles
  - Assemblies
  - Miscellaneous

Server Explorer

Toolbox

SSIS Toolbox

Error List Variables Output

This item does not support previewing

Add to Source Control

Notifications

Solution Explorer

Git Changes

Properties

File Edit View Git Project Build Debug Test Analyze Tools Extensions Window Help Search (Ctrl+Q) Create Data Services

Develop Default Start

ARPAD Data Mart.dsv [Design]

Diagram Organizer <All Tables>

Tables DimCard DimDate DimItem DimPaymentMethod DimStore DimTime FactSales

Cube Wizard Select Measures Select measures that you want to include in the cube.

Measure

Fact Sales

Quant

Amount

Total Amount

Fact Sales Count

< Back Next > Finish >> Cancel

City Region PostalCode CardStartDa... Time\_int Hour Minute Second

This item does not support previewing Add to Source Control

Solution Explorer

Search Solution Explorer (Ctrl+F)

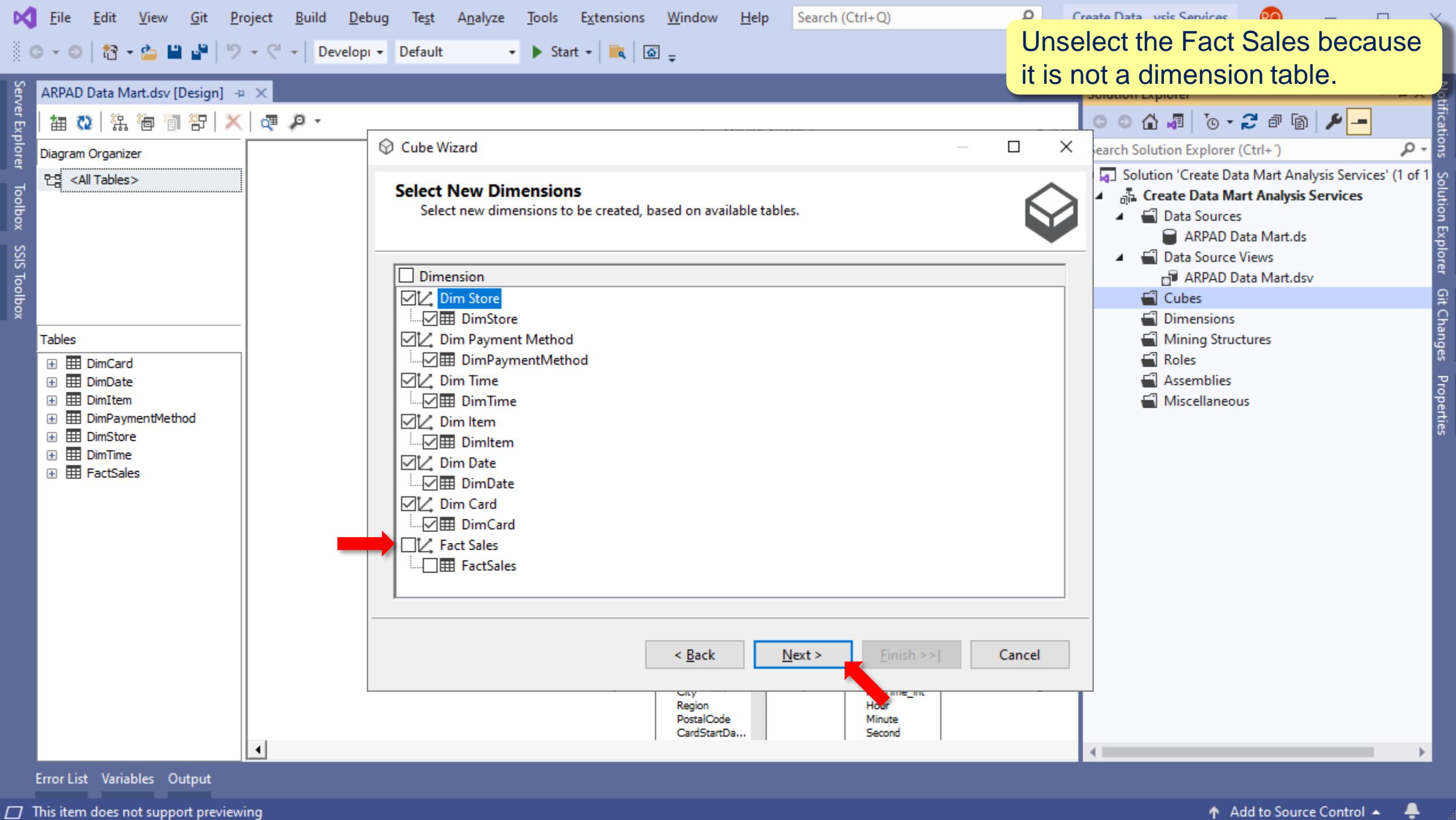
Solution 'Create Data Mart Analysis Services' (1 of 1)

Create Data Mart Analysis Services

- Data Sources ARPAD Data Mart.ds
- Data Source Views ARPAD Data Mart.dsv
- Cubes
- Dimensions
- Mining Structures
- Roles
- Assemblies
- Miscellaneous

Notifications Solution Explorer Git Changes Properties

A yellow callout bubble in the top right corner contains the text: "Unselect the Fact Sales Count fact because it is not a useful measure." A red arrow points from this text to the "Fact Sales Count" checkbox in the "Select Measures" dialog.



Unselect the Fact Sales because it is not a dimension table.

ARPAD Data Mart.dsv [Design] Default Start

Diagram Organizer

Tables

- DimCard
- DimDate
- DimItem
- DimPaymentMethod
- DimStore
- DimTime
- FactSales

Cube Wizard

Completing the Wizard

Name the cube, review its structure, and then click Finish to save the cube.

Cube name: ARMDD Data Mart

Preview:

- Measure groups
  - Fact Sales
    - Quant
    - Amount
    - Total Amount
- Dimensions
  - Dim Store
  - Dim Item
  - Dim Payment Method
  - Dim Card
  - Dim Time
  - Dim Date

Completes the wizard

< Back Next > Finish Cancel

Solution Explorer

Search Solution Explorer (Ctrl+F)

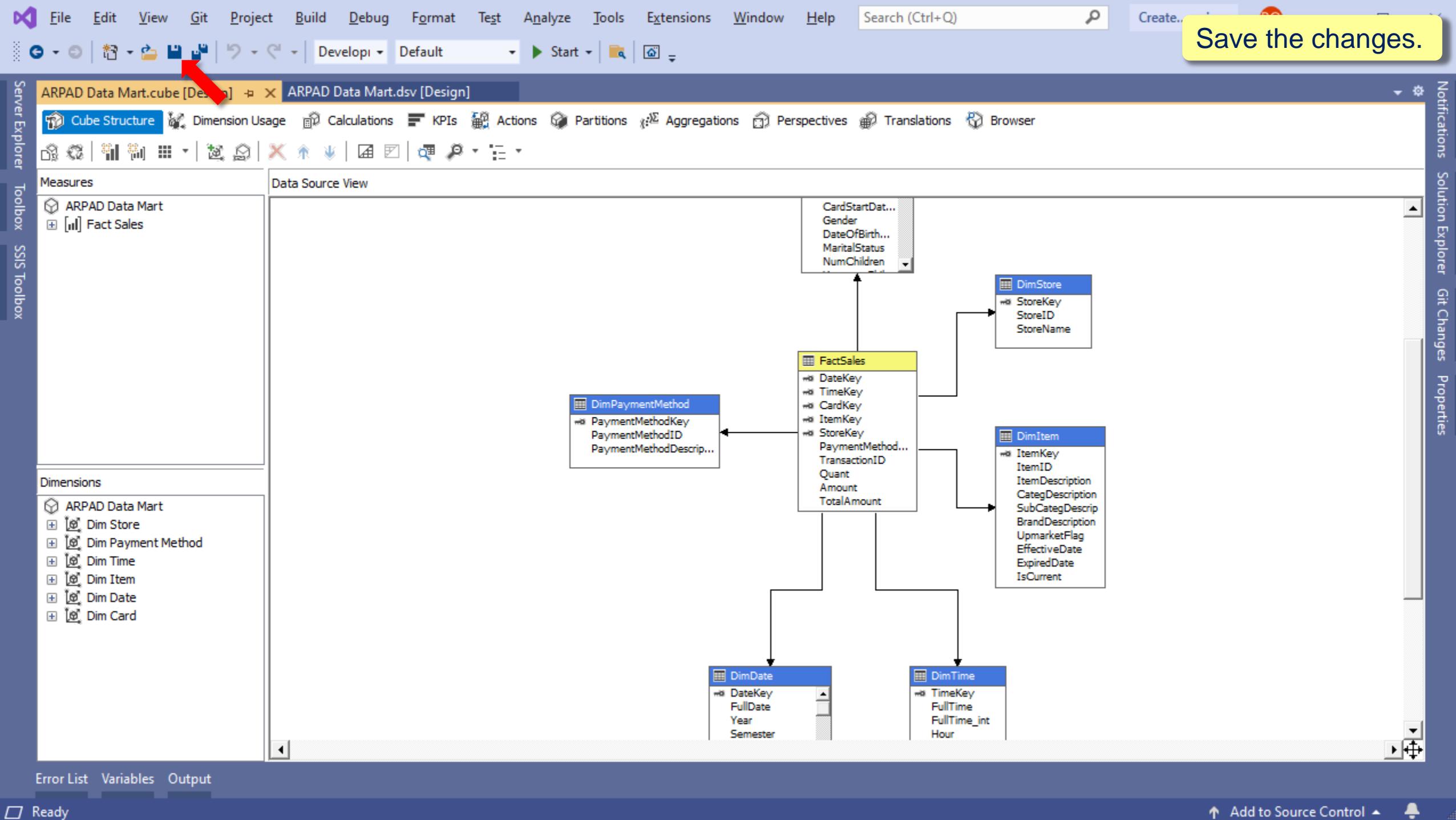
Solution 'Create Data Mart Analysis Services' (1 of 1)

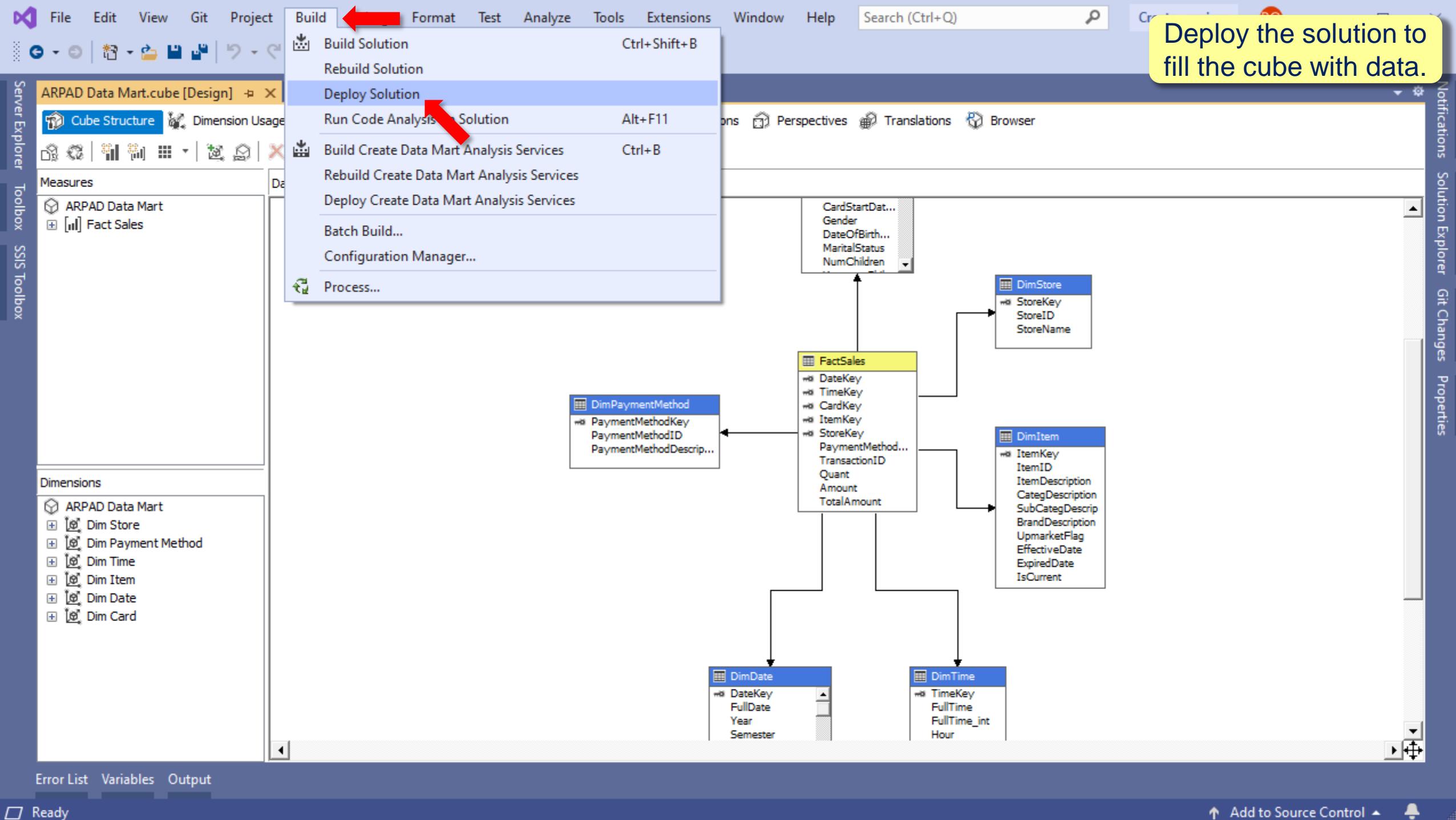
- Create Data Mart Analysis Services
  - Data Sources
    - ARPAD Data Mart.ds
  - Data Source Views
    - ARPAD Data Mart.dsv
  - Cubes
  - Dimensions
  - Mining Structures
  - Roles
  - Assemblies
  - Miscellaneous

Notifications

Server Explorer Toolbox SSIS Toolbox

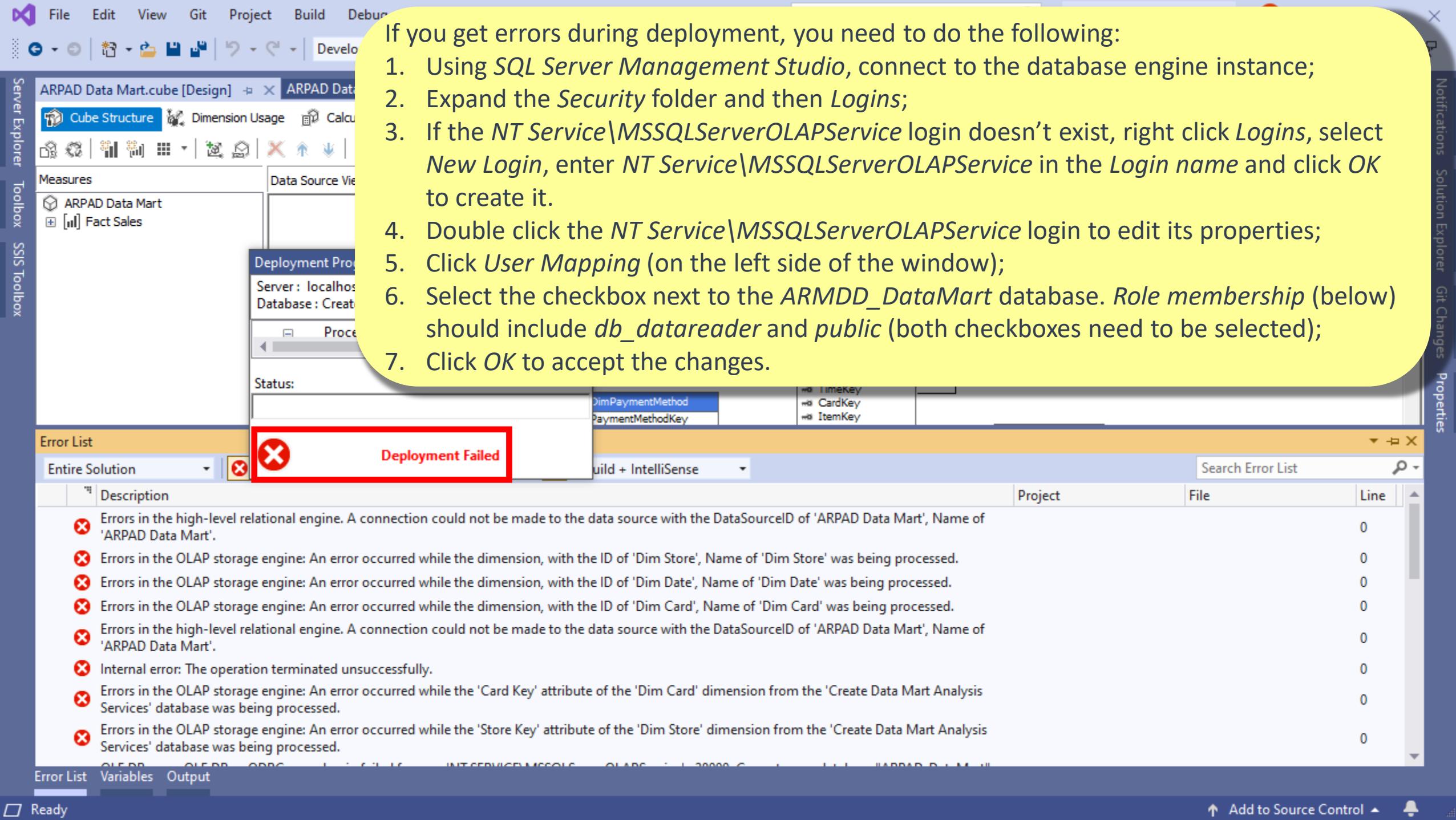
Error List Variables Output





If you get errors during deployment, you need to do the following:

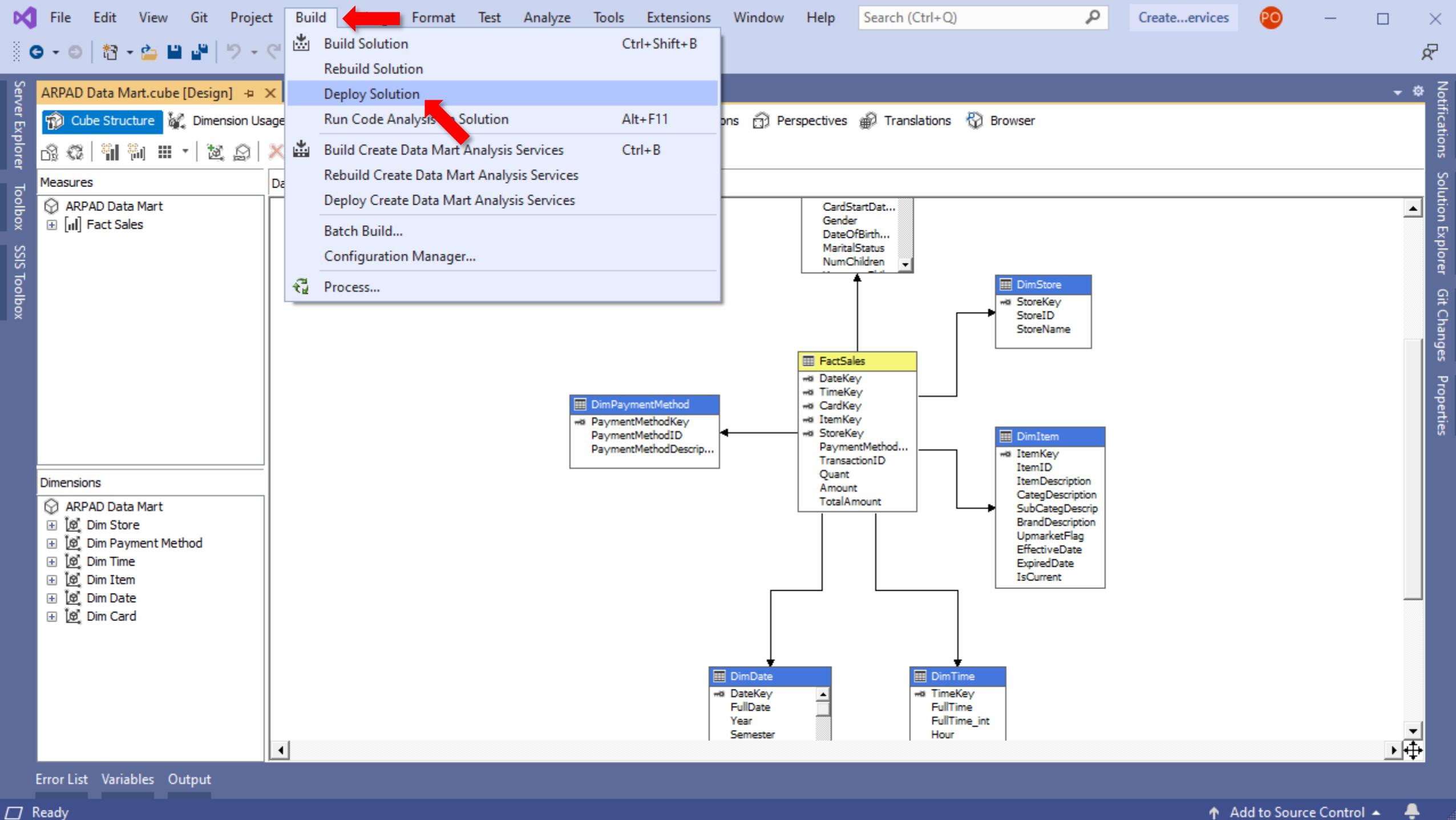
1. Using *SQL Server Management Studio*, connect to the database engine instance;
2. Expand the *Security* folder and then *Logins*;
3. If the *NT Service\MySQLServerOLAPService* login doesn't exist, right click *Logins*, select *New Login*, enter *NT Service\MySQLServerOLAPService* in the *Login name* and click *OK* to create it.
4. Double click the *NT Service\MySQLServerOLAPService* login to edit its properties;
5. Click *User Mapping* (on the left side of the window);
6. Select the checkbox next to the *ARMDD\_DataMart* database. *Role membership* (below) should include *db\_datareader* and *public* (both checkboxes need to be selected);
7. Click *OK* to accept the changes.

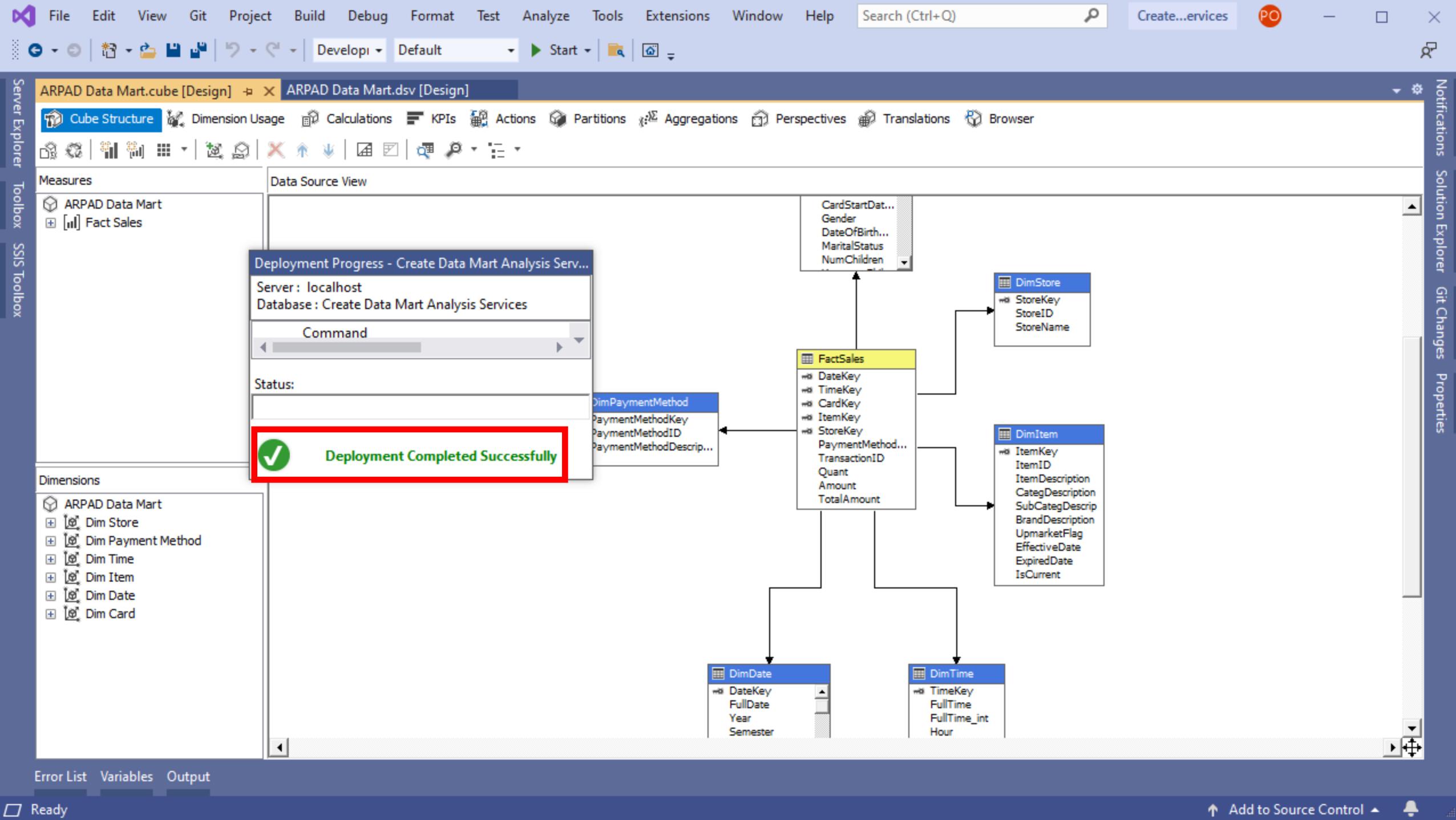


The screenshot shows the Microsoft Visual Studio interface with the 'Error List' window open. A large yellow callout bubble points from the text above to the 'Deployment Failed' message in the error list. The 'Deployment Failed' message is highlighted with a red box. The error list contains several entries, each starting with a red 'X' icon and describing a deployment error related to the 'ARPAD Data Mart' database and various dimensions like 'Dim Store', 'Dim Date', and 'Dim Card'.

Description	Project	File	Line
Errors in the high-level relational engine. A connection could not be made to the data source with the DataSourceID of 'ARPAD Data Mart', Name of 'ARPAD Data Mart'.			0
Errors in the OLAP storage engine: An error occurred while the dimension, with the ID of 'Dim Store', Name of 'Dim Store' was being processed.			0
Errors in the OLAP storage engine: An error occurred while the dimension, with the ID of 'Dim Date', Name of 'Dim Date' was being processed.			0
Errors in the OLAP storage engine: An error occurred while the dimension, with the ID of 'Dim Card', Name of 'Dim Card' was being processed.			0
Errors in the high-level relational engine. A connection could not be made to the data source with the DataSourceID of 'ARPAD Data Mart', Name of 'ARPAD Data Mart'.			0
Internal error: The operation terminated unsuccessfully.			0
Errors in the OLAP storage engine: An error occurred while the 'Card Key' attribute of the 'Dim Card' dimension from the 'Create Data Mart Analysis Services' database was being processed.			0
Errors in the OLAP storage engine: An error occurred while the 'Store Key' attribute of the 'Dim Store' dimension from the 'Create Data Mart Analysis Services' database was being processed.			0

Ready Add to Source Control





File Edit View Git Project Build Debug Format Test Analyze Tools Extensions Window Help Search (Ctrl+Q) Create services

Save all the project changes.

Develop Default Start

ARPAD Data Mart.cube [Design] ARPAD Data Mart.dsv [Design]

Cube Structure Dimension Usage Calculations KPIs Actions Partitions Aggregations Perspectives Translations Browser

Measures

ARPAD Data Mart Fact Sales

Dimensions

ARPAD Data Mart Dim Store Dim Payment Method Dim Time Dim Item Dim Date Dim Card

Data Source View

```
graph TD; FactSales[FactSales] --> DimCard[DimCard]; FactSales --> DimStore[DimStore]; FactSales --> DimItem[DimItem]; FactSales --> DimDate[DimDate]; FactSales --> DimTime[DimTime]; FactSales <--> DimPaymentMethod[DimPaymentMethod];
```

DimCard

DimStore

DimItem

DimDate

DimTime

DimPaymentMethod

FactSales

ARPAD Data Mart.cube [Design]

ARPAD Data Mart.dsv [Design]

Error List Variables Output

Add to Source Control

File Edit View Git Project Build Debug Test Analyze Tools Extensions Window Help Search (Ctrl+Q)

Develop Default Start

ARPAD Data Mart.cube [Design] ARPAD Data Mart.dsv [Design]

Cube Structure Dimension Usage Calculations KPIs Actions Partitions Aggregations Perspectives Translations Browser

Measures

- ARPAD Data Mart
- + Fact Sales

Dimensions

- ARPAD Data Mart
- + Dim Store
- + Dim Payment Method
- + Dim Time
- + Dim Item
- + Dim Date
- + Dim Card

Data Source View

```
graph TD; FactSales[FactSales] --> DimDate[DimDate]; FactSales --> DimStore[DimStore]; FactSales --> DimPaymentMethod[DimPaymentMethod]; FactSales --> DimTime[DimTime]; FactSales --> DimItem[DimItem]; DimDate --> Region[Region]; DimStore --> StoreKey[StoreKey]; DimPaymentMethod --> PaymentMethodKey[PaymentMethodKey]; DimTime --> TimeKey[TimeKey]; DimItem --> ItemKey[ItemKey];
```

Error List Variables Output

Solution Explorer

Search Solution Explorer (Ctrl+F)

Create Data Mart Analysis Services

- Dim Store.dim
- Dim Payment Method.dim
- Dim Time.dim
- Dim Item.dim
- Dim Date.dim
- Dim Card.dim
- Mining Structures
- Roles
- Assemblies
- Miscellaneous

Double click on the Dim Store dimension to open it.

Add to Source Control

File Edit View Git Project Build Debug Format Test Analyze Tools Extensions Window Help Search (Ctrl+Q) Create services

Develop Default Start

Dim Store.dim [Design] ARPAD Data Mart.cube [Design] ARPAD Data Mart.dsv [Design]

Dimension Structure Attribute Relationships Translations Browser

Attributes Hierarchies Data Source View

Dim Store

Store Key

To create a new hierarchy, drag an attribute here.

DimStore

StoreKey

StoreID

StoreName

Select the highlighted attributes and drag them to the *Attributes* pane in order to include them in the cube.

Screenshot of the Microsoft Analysis Services Dimension Designer interface.

The top navigation bar includes: File, Edit, View, Git, Project, Build, Debug, Format, Test, Analyze, Tools, Extensions, Window, Help, Search (Ctrl+Q), Create...ervices, and a PO button.

The title bar shows three open items: Dim Store.dim [Design]\*, ARPAD Data Mart.cube [Design]\*, and ARPAD Data Mart.dsv [Design].

The main tabs are: Dimension Structure (selected), Attribute Relationships, Translations, and Browser.

Toolbars include: Standard, Row Selection, Column Selection, Filter, Sort, and Search.

Left sidebar: Server Explorer, Toolbox, and SSIS Toolbox.

Right sidebar: Notifications, Solution Explorer, Git Changes, and Properties.

Central workspace:

- Attributes:** A list of attributes under the dimension "Dim Store".
  - Store ID
  - Store Key
  - Store NameThese three attributes are highlighted with a red border.
- Hierarchies:** A placeholder area with the instruction: "To create a new hierarchy, drag an attribute here."
- Data Source View:** Shows the structure of the "DimStore" table with columns: StoreKey, StoreID, and StoreName.

Bottom navigation bar: Error List, Variables, Output, Item(s) Saved, Add to Source Control, and a bell icon.

File Edit View Git Project Build Debug Test Analyze Tools Extensions Window Help Search (Ctrl+Q) Create Data via Services

Develop Default Start

Dim Store.dim [Design] ARPAD Data Mart.cube [Design] ARPAD Data Mart.dsv [Design]

Dimension Structure Attribute Relationships Translations Browser

Attributes

Hierarchies

To create a new hierarchy, drag an attribute here.

Data Source

Server Explorer Toolbox SSIS Toolbox

Double click on the *Dim Payment Method* dimension to open it.

Search Solution Explorer (Ctrl+F)

Solution 'Create Data Mart Analysis Services' (1 of 1)

- Create Data Mart Analysis Services
  - Data Sources
    - ARPAD Data Mart.ds
  - Data Source Views
    - ARPAD Data Mart.dsv
  - Cubes
    - ARPAD Data Mart.cube
  - Dimensions
    - Dim Store.dim
    - Dim Payment Method.dim**
    - Dim Time.dim
    - Dim Item.dim
    - Dim Date.dim
    - Dim Card.dim
  - Mining Structures
  - Roles
  - Assemblies
  - Miscellaneous

Notifications Solution Explorer Git Changes Properties

Error List Variables Output

This item does not support previewing Add to Source Control

File Edit View Git Project Build Debug Format Test Analyze Tools Extensions Window Help Search (Ctrl+Q) Create... services

Develop Default Start

Dim Payment Method.dim [Design]\* Dim Store.dim [Design]\* ARPAD Data Mart.cube [Design] ARPAD Data Mart.dsv [Design]

Dimension Structure Attribute Relationships Translations Browser

Attributes Hierarchies Data Source View

Dim Payment Method  
Payment Method Key

To create a new hierarchy, drag an attribute here.

DimPaymentMethod  
PaymentMethodKey  
PaymentMethodID  
PaymentMethodDescription

Select the highlighted attributes and drag them to the Attributes pane in order to include them in the cube.

Error List Variables Output

Ready Add to Source Control

Develop Default Start

Dim Payment Method.dim [Design]\* Dim Store.dim [Design]\* ARPAD Data Mart(cube) [Design] ARPAD Data Mart.dsv [Design]

Dimension Structure Attribute Relationships Translations Browser

Attributes Hierarchies Data Source View

Dim Payment Method

- Payment Method Description
- Payment Method ID
- Payment Method Key

To create a new hierarchy, drag an attribute here.

DimPaymentMethod

- PaymentMethodKey
- PaymentMethodID
- PaymentMethodDescription



File Edit View Git Project Build Debug Test Analyze Tools Extensions Window Help Search (Ctrl+Q) Create Data Services

Develop Default Start

Dim Payment Method.dim [Design]\* Dim Store.dim [Design]\* ARPAD Data Mart(cube) [Design] ARPAD Data Mart.dsv [Design]

Dimension Structure Attribute Relationships Translations Browser

Attributes Hierarchies Data Source

To create a new hierarchy, drag an attribute here.

Server Explorer Toolbox SSIS Toolbox

Double click on the **Dim Time dimension** to open it.

Search Solution Explorer (Ctrl+) Solution 'Create Data Mart Analysis Services' (1 of 1)

- Create Data Mart Analysis Services
  - Data Sources
    - ARPAD Data Mart.ds
  - Data Source Views
    - ARPAD Data Mart.dsv
  - Cubes
    - ARPAD Data Mart(cube)
  - Dimensions
    - Dim Store.dim
    - Dim Payment Method.dim
    - Dim Time.dim** (highlighted with a red arrow)
    - Dim Item.dim
    - Dim Date.dim
    - Dim Card.dim
  - Mining Structures
  - Roles
  - Assemblies
  - Miscellaneous

Error List Variables Output

This item does not support previewing Add to Source Control

Select the highlighted attributes and drag them to the *Attributes* pane in order to include them in the cube.

The screenshot shows the Microsoft SQL Server Analysis Services (SSAS) Dimension Designer. The top menu bar includes File, Edit, View, Git, Project, Build, Debug, Format, Test, Analyze, Tools, Extensions, Window, Help, and Search (Ctrl+Q). The ribbon tabs are Develop, Default, Start, and Home. The title bar shows four open projects: Dim Time.dim [Design], Dim Payment Method.dim [Design]\*, Dim Store.dim [Design]\*, and ARPAD Data Mart.cube [Design]\*. The left sidebar has Server Explorer, Toolbox, and SSIS Toolbox. The main area has three panes: Attributes (showing Dim Time and Time Key), Hierarchies (with a placeholder message), and Data Source View. The Data Source View pane displays a tree structure for the DimTime dimension, with attributes: TimeKey, FullTime (highlighted with a red arrow), Hour, Minute, Second, Period, LunchTime, and DinnerTime. The 'Hour' attribute is also highlighted with a red box.

Attributes

Hierarchies

To create a new hierarchy, drag an attribute here.

Data Source View

DimTime

- TimeKey
- FullTime
- FullTime int
- Hour
- Minute
- Second
- Period
- LunchTime
- DinnerTime

Error List Variables Output

Ready Add to Source Control

Screenshot of the Microsoft Data Tools interface, showing the Dimension Structure tab for the Dim Time dimension.

The top navigation bar includes File, Edit, View, Git, Project, Build, Debug, Format, Test, Analyze, Tools, Extensions, Window, Help, Search (Ctrl+Q), Create...ervices, and a PO button.

The title bar shows the current project: Dim Time.dim [Design]\*.

The ribbon tabs include Develop, Default, Start, and Home.

The main content area displays the Dimension Structure tab for the Dim Time dimension. The left pane shows attributes: Dinner Time, Full Time, Hour, Lunch Time, Minute, Period, Second, and Time Key. The "Time Key" item is selected and highlighted with a red border. The middle pane shows hierarchies with a placeholder message: "To create a new hierarchy, drag an attribute here." The right pane shows the Data Source View, listing attributes: DimTime, TimeKey, FullTime, FullTime\_int, Hour, Minute, Second, Period, LunchTime, and DinnerTime.

The bottom navigation bar includes Error List, Variables, Output, Ready, Add to Source Control, and a notifications icon.

File Edit View Git Project Build Debug Test Analyze Tools Extensions Window Help Search (Ctrl+Q) Create Data via Services

Develop Default Start

Dim Time.dim [Design]\* Dim Payment Method.dim [Design]\* Dim Store.dim [Design]\* ARPAD Data Mart.cube [Design]\* ARPAD Data M

Dimension Structure Attribute Relationships Translations Browser

Attributes

Hierarchies

To create a new hierarchy, drag an attribute here.

Data Source

Server Explorer Toolbox SSIS Toolbox

Double click on the *Dim Item* dimension to open it.

Search Solution Explorer (Ctrl+F)

Solution 'Create Data Mart Analysis Services' (1 of 1)

- Create Data Mart Analysis Services
  - Data Sources
    - ARPAD Data Mart.ds
  - Data Source Views
    - ARPAD Data Mart.dsv
  - Cubes
    - ARPAD Data Mart.cube
  - Dimensions
    - Dim Store.dim
    - Dim Payment Method.dim
    - Dim Time.dim
    - Dim Item.dim** (highlighted with a red arrow)
    - Dim Date.dim
    - Dim Card.dim
  - Mining Structures
  - Roles
  - Assemblies
  - Miscellaneous

Notifications Solution Explorer Git Changes Properties

Error List Variables Output

This item does not support previewing Add to Source Control

File Edit View Git Project Build Debug Format Test Analyze Tools Extensions Window Help Search (Ctrl+Q) Create services

Develop Default Start

Dim Item.dim [Design] Dim Time.dim [Design]\* Dim Payment Method.dim [Design]\* Dim Store.dim [Design]\* ARPAD DA

Dimension Structure Attribute Relationships Translations Browser

Attributes Hierarchies Data Source View

Dim Item

Item Key

To create a new hierarchy, drag an attribute here.

DimItem

ItemKey

ItemID  
ItemDescription  
CategDescription  
SubCategDescrip  
BrandDescription  
UpmarketFlag  
EffectiveDate  
ExpiredDate  
IsCurrent

Select the highlighted attributes and drag them to the *Attributes* pane in order to include them in the cube.

File Edit View Git Project Build Debug Format Test Analyze Tools Extensions Window Help Search (Ctrl+Q) Create...ervices PO

Develop Default Start

Dim Item.dim [Design]\* Dim Time.dim [Design]\* Dim Payment Method.dim [Design]\* Dim Store.dim [Design]\* ARPAD Data Mart.cube [Design]\*

Dimension Structure Attribute Relationships Translations Browser

Attributes Hierarchies Data Source View

Dim Item

- Brand Description
- Categ Description
- Item Description
- Item ID
- Item Key
- Sub Categ Descrip
- Upmarket Flag

To create a new hierarchy, drag an attribute here.

DimItem

- ItemKey
- ItemID
- ItemDescription
- CategDescription
- SubCategDescrip
- BrandDescription
- UpmarketFlag
- EffectiveDate
- ExpiredDate
- IsCurrent

Error List Variables Output

Ready Add to Source Control

Server Explorer Toolbox SSIS Toolbox Notifications Solution Explorer Git Changes Properties

File Edit View Git Project Build Debug Test Analyze Tools Extensions Window Help Search (Ctrl+Q) Create Data via Services

Develop Default Start

Dim Item.dim [Design]\* Dim Time.dim [Design]\* Dim Payment Method.dim [Design]\* Dim Store.dim [Design]\* ARPAD Data Mart.cube [Design]

Dimension Structure Attribute Relationships Translations Browser

Attributes Hierarchies Data Source

Dim Item

- Brand Description
- Categ Description
- Item Description
- Item ID
- Item Key
- Sub Categ Descrip
- Upmarket Flag

To create a new hierarchy, drag an attribute here.

Search Solution Explorer (Ctrl+F)

Solution 'Create Data Mart Analysis Services' (1 of 1)

- Create Data Mart Analysis Services
  - Data Sources
    - ARPAD Data Mart.ds
  - Data Source Views
    - ARPAD Data Mart.dsv
  - Cubes
    - ARPAD Data Mart.cube
  - Dimensions
    - Dim Store.dim
    - Dim Payment Method.dim
    - Dim Time.dim
    - Dim Item.dim
    - Dim Date.dim
    - Dim Card.dim
  - Mining Structures
  - Roles
  - Assemblies
  - Miscellaneous

Server Explorer Toolbox SSIS Toolbox

Error List Variables Output

This item does not support previewing Add to Source Control

Double click on the Dim Date dimension to open it.

The screenshot displays the Microsoft SQL Server Data Tools (SSDT) interface. The main window shows the 'Dimension Structure' tab for the 'Dim Item.dim' design. The 'Attributes' pane lists several attributes: Brand Description, Categ Description, Item Description, Item ID, Item Key, Sub Categ Descrip, and Upmarket Flag. The 'Hierarchies' pane contains a placeholder message: 'To create a new hierarchy, drag an attribute here.' The 'Data Source' pane is currently empty. On the right side, the 'Solution Explorer' shows the project structure for 'Create Data Mart Analysis Services'. It includes nodes for Data Sources (ARPAD Data Mart.ds), Data Source Views (ARPAD Data Mart.dsv), Cubes (ARPAD Data Mart.cube), Dimensions (Dim Store.dim, Dim Payment Method.dim, Dim Time.dim, Dim Item.dim, Dim Date.dim, Dim Card.dim), Mining Structures, Roles, Assemblies, and Miscellaneous. A red arrow points to the 'Dim Date.dim' node under the Dimensions category. A yellow callout box in the top right corner instructs: 'Double click on the Dim Date dimension to open it.'

File Edit View Git Project Build Debug Format Test Analyze Tools Extensions Window Help Search (Ctrl+Q) Create services

Develop Default Start

Dim Date.dim [Design]\* Dim Item.dim [Design]\* Dim Time.dim [Design]\* Dim Payment Method.dim [Design]\* Dim Store

Dimension Structure Attribute Relationships Translations Browser

Attributes Hierarchies Data Source View

Dim Date Date Key

To create a new hierarchy, drag an attribute here.

DimDate DateKey FullDate Year Semester Quarter Month MonthName Week DayNumberOfYear DayNumberOfMonth DayNumberOfWeek DayOfWeek Weekend

Select the highlighted attributes and drag them to the *Attributes* pane in order to include them in the cube.

Error List Variables Output

Ready Add to Source Control

Screenshot of the Microsoft Analysis Services Dimension Designer interface.

The top navigation bar includes: File, Edit, View, Git, Project, Build, Debug, Format, Test, Analyze, Tools, Extensions, Window, Help, Search (Ctrl+Q), Create...ervices, and a PO icon.

The tabs at the top show: Dim Date.dim [Design], Dim Item.dim [Design], Dim Time.dim [Design], Dim Payment Method.dim [Design], Dim Store.dim [Design], and ARPAD Data Mart.cube [Design].

The main tabs in the center are: Dimension Structure (selected), Attribute Relationships, Translations, and Browser.

The left sidebar contains: Server Explorer, Toolbox, and SSIS Toolbox.

The right sidebar contains: Notifications, Solution Explorer, Git Changes, and Properties.

The central workspace is divided into three sections:

- Attributes:** A tree view showing attributes under "Dim Date". One node, "Date Key", is expanded and highlighted with a red border. Other visible nodes include Date Number Of Month, Day Number Of Week, Day Number Of Year, Day Of Week, Full Date, Month, Month Name, Quarter, Semester, Week, Weekend, and Year.
- Hierarchies:** A section with the instruction: "To create a new hierarchy, drag an attribute here."
- Data Source View:** A tree view showing the structure of the "DimDate" table, listing columns such as DateKey, FullDate, Year, Semester, Quarter, Month, MonthName, Week, DayNumberOfYear, DayNumberOfMonth, DayNumberOfWeek, DayOfWeek, and Weekend.

At the bottom, there are links for Error List, Variables, Output, and a status bar indicating "Item(s) Saved".

File Edit View Git Project Build Debug Test Analyze Tools Extensions Window Help Search (Ctrl+Q) Create Data Services

Develop Default Start

Dim Date.dim [Design] Dim Item.dim [Design] Dim Time.dim [Design] Dim Payment Method.dim [Design] Dim Store.dim [Design]

Dimension Structure Attribute Relationships Translations Browser

Attributes Hierarchies Data Source

Dim Date

- Date Key
- Day Number Of Month
- Day Number Of Week
- Day Number Of Year
- Day Of Week
- Full Date
- Month
- Month Name
- Quarter
- Semester
- Week
- Weekend
- Year

To create a new hierarchy, drag an attribute here.

Error List Variables Output

Double click on the Dim Card dimension to open it.

Search Solution Explorer (Ctrl+F)

Solution 'Create Data Mart Analysis Services' (1 of 1)

- Create Data Mart Analysis Services
  - Data Sources
    - ARPAD Data Mart.ds
  - Data Source Views
    - ARPAD Data Mart.dsv
  - Cubes
    - ARPAD Data Mart.cube
  - Dimensions
    - Dim Store.dim
    - Dim Payment Method.dim
    - Dim Time.dim
    - Dim Item.dim
    - Dim Date.dim
    - Dim Card.dim
  - Mining Structures
  - Roles
  - Assemblies
  - Miscellaneous

Add to Source Control

File Edit View Git Project Build Debug Format Test Analyze Tools Extensions Window Help Search (Ctrl+Q) Create services

Develop Default Start

Dim Card.dim [Design] \* Dim Date.dim [Design] Dim Item.dim [Design] Dim Time.dim [Design] Dim Payment Method.dim

Dimension Structure Attribute Relationships Translations Browser

Attributes Hierarchies Data Source View

Dim Card

Card Key

To create a new hierarchy, drag an attribute here.

DimCard

CardKey

CardID  
City  
Region  
PostalCode  
CardStartDateKey  
Gender  
DateOfBirthKey  
MaritalStatus  
NumChildren  
YoungestChildren

EffectiveDate  
ExpiredDate  
IsCurrent

Select the highlighted attributes and drag them to the *Attributes* pane in order to include them in the cube.

File Edit View Git Project Build Debug Format Test Analyze Tools Extensions Window Help Search (Ctrl+Q) Create...ervices PO

Develop Default Start

Dim Card.dim [Design] \* Dim Date.dim [Design] Dim Item.dim [Design] Dim Time.dim [Design] Dim Payment Method.dim [Design] Dim Store.dim [Design]

Dimension Structure Attribute Relationships Translations Browser

Attributes Hierarchies Data Source View

Dim Card

- Card ID
- Card Key
- Card Start Date Key
- City
- Date Of Birth Key
- Gender
- Marital Status
- Num Children
- Postal Code
- Region
- Youngest Children

To create a new hierarchy, drag an attribute here.

DimCard

- CardKey
- CardID
- City
- Region
- PostalCode
- DateOfBirthKey
- MaritalStatus
- NumChildren
- YoungestChildren
- EffectiveDate
- ExpiredDate
- IsCurrent

Error List Variables Output

Ready Add to Source Control

Server Explorer Toolbox SSIS Toolbox Notifications Solution Explorer Git Changes Properties

File Edit View Git Project Build Debug Format Test Analyze Tools Extensions Window Help Search (Ctrl+Q) Create services

Save all the project changes.

Dim Card.dim [Design] Dim Date.dim [Design] Dim Item.dim [Design] Dim Time.dim [Design] Dim Store.dim [Design] ARPAD Data Mart.cube [Design]

Dimension Structure Attribute Relationships Translations Browser

Attributes Hierarchies Data Source View

Dim Card

- Card ID
- Card Key
- Card Start Date Key
- City
- Date Of Birth Key
- Gender
- Marital Status
- Num Children
- Postal Code
- Region
- Youngest Children

To create a new hierarchy, drag an attribute here.

DimCard

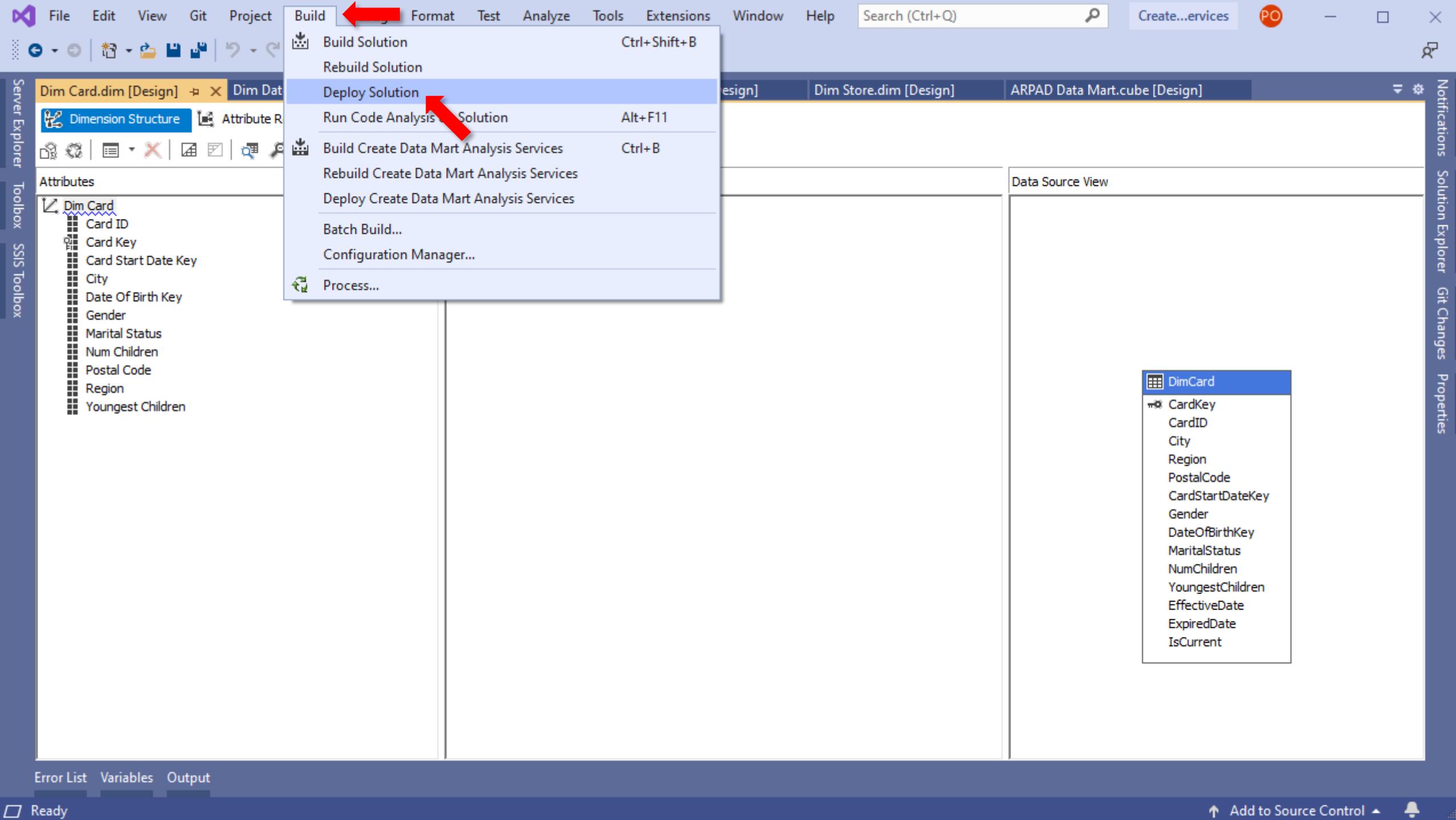
- CardKey
- CardID
- City
- Region
- PostalCode
- CardStartDateKey
- Gender
- DateOfBirthKey
- MaritalStatus
- NumChildren
- YoungestChildren
- EffectiveDate
- ExpiredDate
- IsCurrent

Error List Variables Output

Add to Source Control

Ready

Server Explorer Toolbox SSIS Toolbox Notifications Solution Explorer Git Changes Properties



Dim Card.dim [Design] Dim Date.dim [Design] Dim Item.dim [Design] Dim Time.dim [Design] Dim Store.dim [Design] ARPAD Data Mart.cube [Design]

Dimension Structure Attribute Relationships Translations Browser

Attributes Hierarchies Data Source View

Dim Card

- Card ID
- Card Key
- Card Start Date Key
- City
- Date Of Birth Key
- Gender
- Marital Status
- Num Children
- Postal Code
- Region
- Youngest Children

To create a new hierarchy, drag an

Deployment Progress - Create Data Mart Analysis Serv...

Server: localhost Database: Create Data Mart Analysis Services

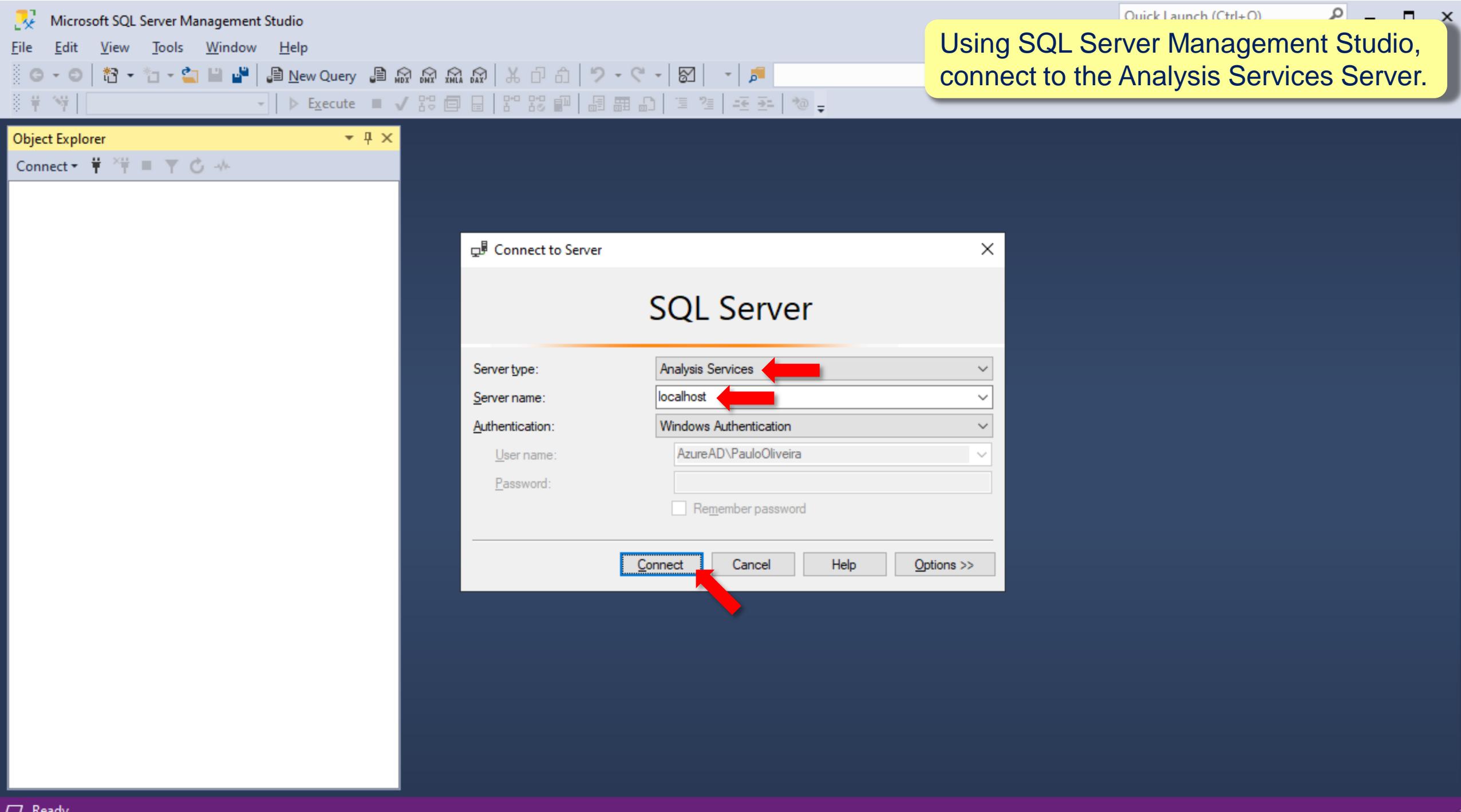
Start time: 27/12/2022 15:19:59: Er

Status:

Deployment Completed Successfully

DimCard

- CardKey
- CardID
- City
- Region
- PostalCode
- CardStartDateKey
- Gender
- DateOfBirthKey
- MaritalStatus
- NumChildren
- YoungestChildren
- EffectiveDate
- ExpiredDate
- IsCurrent



Microsoft SQL Server Management Studio

File Edit View Tools Window Help

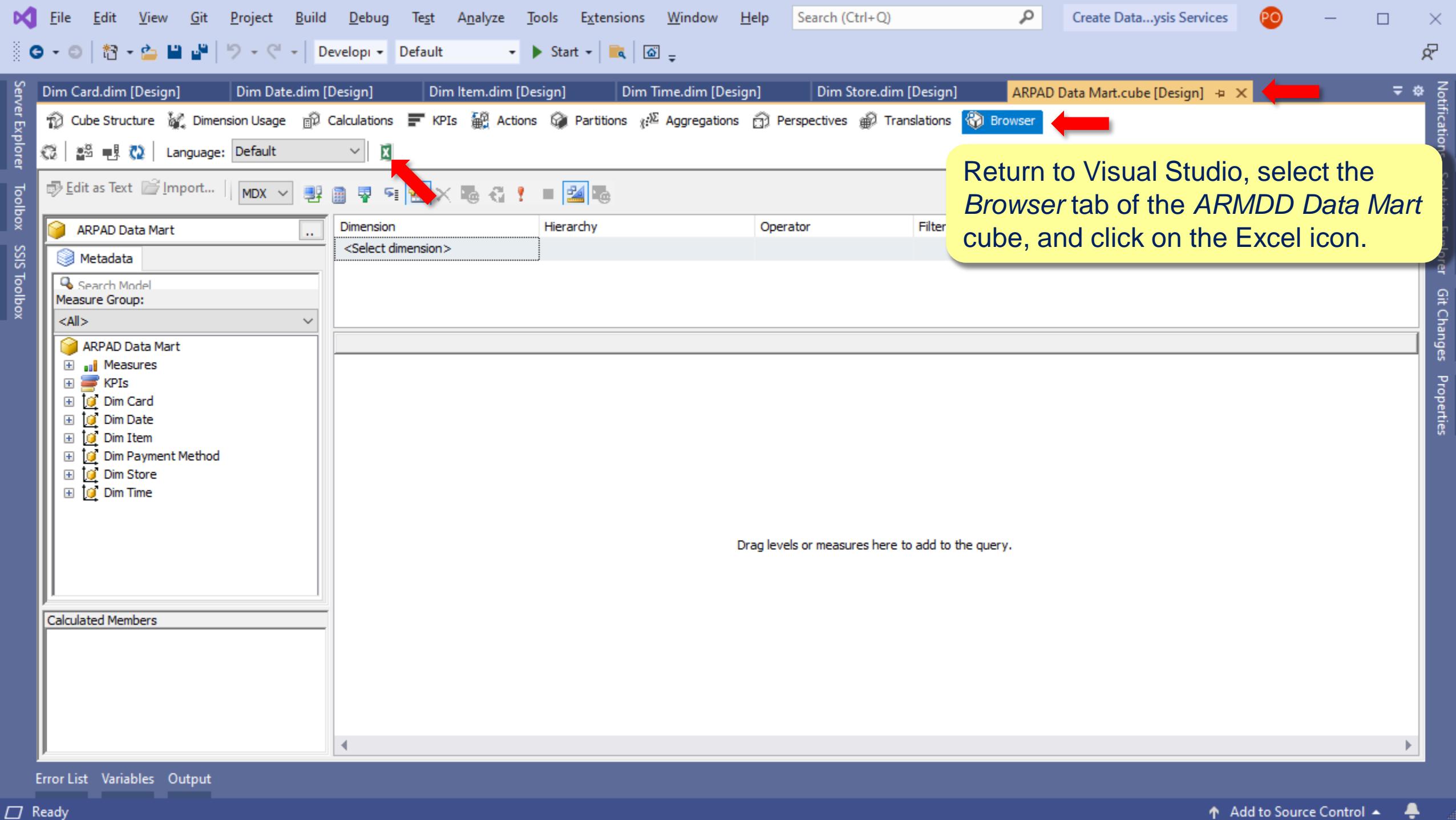
New Query MDX DAX XMLA DAX Execute

Object Explorer

localhost (Microsoft Analysis Server 16.0.42.216 - AzureAD)\

- Databases
  - Analysis Services Tutorial
  - Create Data Mart Analysis Services
    - Data Sources
      - ARMDD Data Mart
    - Data Source Views
      - ARMDD Data Mart
    - Cubes
      - ARMDD Data Mart
        - Measure Groups
          - Fact Sales
        - Partitions
          - Fact Sales
        - Writeback
        - Aggregation Designs
  - Dimensions
  - Mining Structures
  - Roles
  - Assemblies
  - Assemblies
  - Management

By expanding the folders it is possible to see the changes that have been deployed to the Analysis Services Server.



Book1 - Microsoft Excel

Home Insert Page Layout Formulas Data Review View

Cut Copy Format Painter

Font Alignment Number Conditional Formatting

Cells Insert Delete Format

AutoSum Fill Clear Sort & Filter Find & Select

A1 f<sub>x</sub>

Microsoft Office Excel Security Notice

Microsoft Office has identified a potential security concern.

File Path: C:\Users\PauloOliveira\AppData\Local\Temp\tmpA81C.odc

Data connections have been blocked. If you choose to enable data connections, your computer may no longer be secure. Do not enable this content unless you trust the source of this file.

Enable Disable

Sheet1 Sheet2 Sheet3

Ready 100%

The image shows a Microsoft Excel window with a 'Microsoft Office Excel Security Notice' dialog box overlaid. The dialog box is titled 'Microsoft Office Excel Security Notice' and contains the following text:  
Microsoft Office has identified a potential security concern.  
File Path: C:\Users\PauloOliveira\AppData\Local\Temp\tmpA81C.odc  
Data connections have been blocked. If you choose to enable data connections, your computer may no longer be secure. Do not enable this content unless you trust the source of this file.  
At the bottom of the dialog box are two buttons: 'Enable' and 'Disable'. A red arrow points to the 'Enable' button.

Book2 - Microsoft Excel

PivotTable Tools

Home Insert Page Layout Formulas Data Review View Options Design

Cut Copy Format Painter Paste Clipboard

Font Alignment Number Conditional Formatting

Format as Table Cell Styles

Insert Delete Format Cells Editing

A5 fx

PivotTable Field List

Choose fields to add to report:

- Weekend
- Year

Dim Item

- Brand Description
- Categ Description
- Item Description
- Item ID
- Item Key
- Sub Categ Descrip
- Upmarket Flag

To build a report, choose fields from the PivotTable Field List

Report Filter Column Labels Row Labels Values

Defer Layout Update Update

tmpA81C

Ready 100%

Excel is now connected to the Analysis Services cube.



Home Insert Page Layout Formulas Data Review View

Cut Copy Format Painter

Font Alignment Number Styles Cells Editing

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
1																			
2																			
3																			
4																			
5																			
6																			
7																			
8																			
9																			
10																			
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19																			
20																			
21																			
22																			
23																			
24																			
25																			

It is also possible to connect directly from Excel to Analysis Services. To exemplify this, create a new empty Excel workbook.

Book3 - Microsoft Excel

Home Insert Page Layout Formulas Data View

From Access From Web From Text From Other Sources Existing Connections Refresh All Properties Edit Links Sort Filter Advanced Text to Columns Remove Duplicates Data Consolidate What-If Analysis Group Ungroup Subtotal Show Detail Hide Detail

A1 A B 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 H I J K L M N O P Q R S

From SQL Server  
Create a connection to a SQL Server table. Import data into Excel as a Table or PivotTable report.

**From Analysis Services**  
Create a connection to a SQL Server Analysis Services cube. Import data into Excel as a Table or PivotTable report.

From XML Data Import  
Open or map a XML file into Excel.

From Data Connection Wizard  
Import data for an unlisted format by using the Data Connection Wizard and OLEDB.

From Microsoft Query  
Import data for an unlisted format by using the Microsoft Query Wizard and ODBC.

Sheet1 Sheet2 Sheet3

Ready 100%

Book3 - Microsoft Excel

Provide the Analysis Services Server name.

A1 f<sub>x</sub>

Data Connection Wizard

Connect to Database Server

Enter the information required to connect to the database server.

1. Server name: localhost

2. Log on credentials

Use Windows Authentication

Use the following User Name and Password

User Name: \_\_\_\_\_

Password: \_\_\_\_\_

Cancel < Back Next > Finish

Clipboard

Cut Copy Format Painter

Font Alignment Number Styles Cells Editing

Home Insert Page Layout Formulas Data Review View

Paste

Calibri 11 A A Wrap Text General Conditional Format as Table Cell Insert Delete Format Clear Sort & Filter Find & Select

Clipboard

Clipboard

Sheet1 Sheet2 Sheet3

Ready 100%

The screenshot shows the 'Data Connection Wizard' dialog box in Microsoft Excel. The 'Server name' field is populated with 'localhost'. The 'Log on credentials' section has the 'Use Windows Authentication' radio button selected. A red arrow points to the 'localhost' field, another red arrow points to the 'Use Windows Authentication' radio button, and a third red arrow points to the 'Next >' button at the bottom right of the dialog. The background shows a blank Excel spreadsheet with a single cell selected in row 1, column A.

Book3 - Microsoft Excel

Select the proper database to connect to.

Data Connection Wizard

Select Database and Table

Select the Database that contains the data you want:

Create Data Mart Analysis Services

Connect to a specific cube or table:

Name	Description	Modified	Created	Type
ARPAD Data Mart		12/27/2022 3:20:02 PM		CUBE

Cancel < Back Next > Finish

A1 f<sub>x</sub>

Clipboard

Font Alignment Number Styles Cells Editing

Home Insert Page Layout Formulas Data Review View

Cut Copy Format Painter

Calibri 11 A A Wrap Text

B I U Merge & Center

General Conditional Formatting as Table Cell Styles

Insert Delete Format

Fill Clear Sort & Filter Find & Select

Clipboard

A1 f<sub>x</sub>

O P Q R S

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25

Sheet1 Sheet2 Sheet3

Ready 100%

Book3 - Microsoft Excel

Accept the default values and finish the wizard.

A1 f<sub>x</sub>

Data Connection Wizard

Save Data Connection File and Finish

Enter a name and description for your new Data Connection file, and press Finish to save.

File Name: localhost Create Data Mart Analysis Services ARMDD Data Mart.odc

Save password in file

Description: (To help others understand what your data connection points to)

Friendly Name: localhost Create Data Mart Analysis Services ARMDD Data Mart

Search Keywords:

Always attempt to use this file to refresh data

Excel Services: Authentication Settings...

Cancel < Back Next > Finish

Clipboard

Cut Copy Format Painter

Font

Alignment

Number

Conditional Formatting

Format as Table

Cell Styles

Insert Delete Format

Cells

Fill Clear

Sort & Filter

Find & Select

Editing

O P Q R S

1 A B C D E F

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

Sheet1 Sheet2 Sheet3

Ready

100%

Book3 - Microsoft Excel

Home Insert Page Layout Formulas Data Review View

Cut Copy Format Painter

Font Alignment Number Conditional Formatting

Cells

Clipboard

A1 f<sub>x</sub>

Import Data

Select how you want to view this data in your workbook.

Table  
 PivotTable Report ←  
 PivotChart and PivotTable Report  
 Only Create Connection

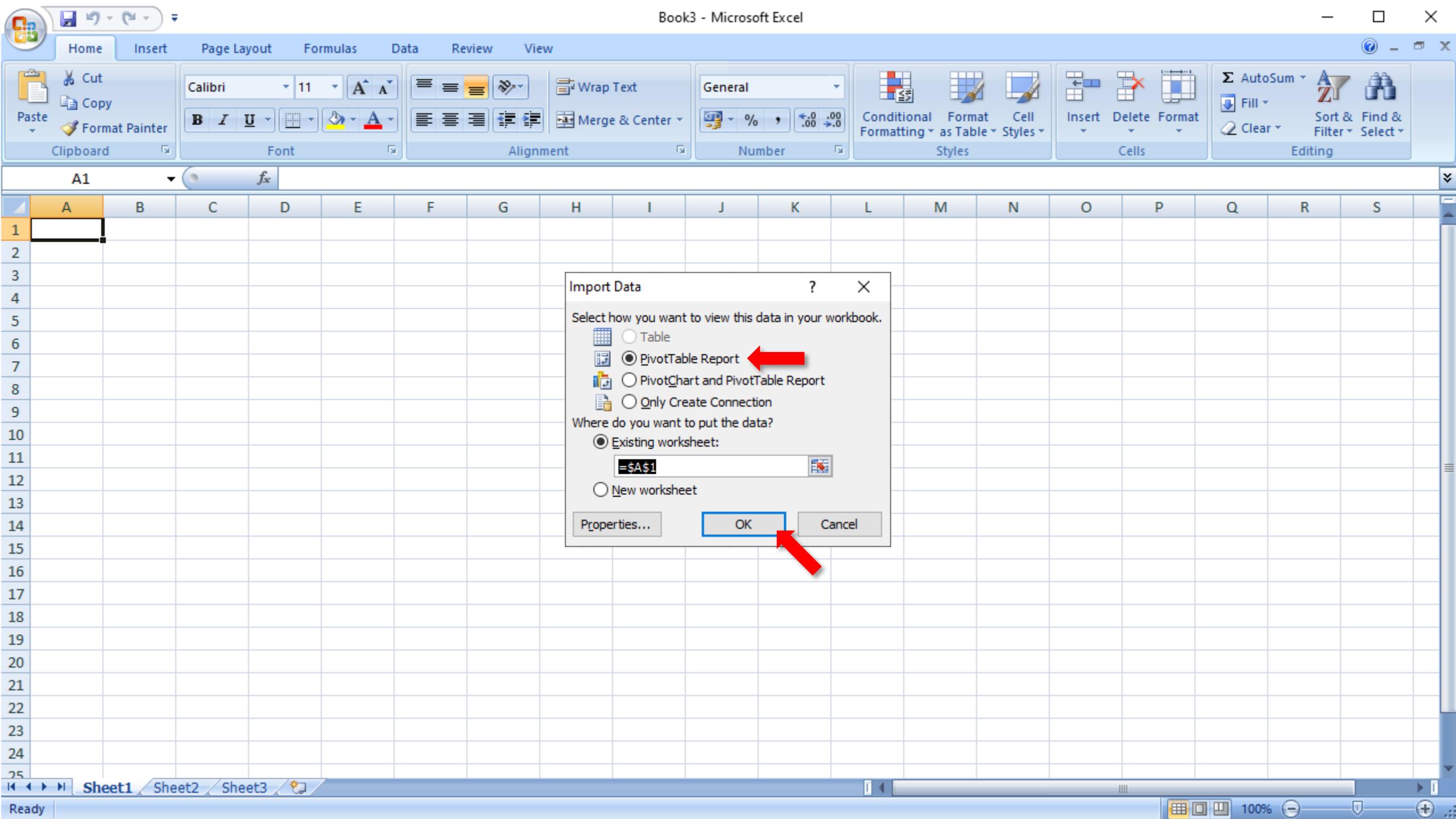
Where do you want to put the data?

Existing worksheet:  
=SA\$1  
 New worksheet

Properties... OK Cancel

Sheet1 Sheet2 Sheet3

Ready 100%



Book3 - Microsoft Excel

PivotTable Tools

Home Insert Page Layout Formulas Data Review View Options Design

PivotTable Name: PivotTable2 Active Field: Expand Entire Field Group Selection Sort Refresh Change Data Source Clear Select Move PivotTable PivotChart Formulas OLAP tools Field List +/- Buttons Field Headers

PivotTable Options Field Settings Collapse Entire Field Ungroup Group Field Group Sort Data Actions Tools Show/Hide

A1 f<sub>x</sub>

PivotTable Field List

Choose fields to add to report:

- Fact Sales
  - Amount
  - Quant
  - Total Amount
- Dim Card
  - Card ID
  - Card Key
  - Card Start Date Key
  - City
  - Date Of Birth Key

To build a report, choose fields from the PivotTable Field List

Report Filter Column Labels Row Labels Values

Defer Layout Update Update

Excel is now connected to the Analysis Services cube.

Sheet1 Sheet2 Sheet3

Ready 100%

Book3 - Microsoft Excel

PivotTable Tools Options Design

PivotTable Name: PivotTable2 Active Field: Total Amount Expand Entire Field Group Selection Sort Refresh Change Data Source Clear Select Move PivotTable PivotChart Formulas OLAP tools Field List +/- Buttons Field Headers Show/Hide

A1 f Total Amount

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	Total Amount														
2	25856189,49														
3															
4															
5															
6															
7															
8															
9															
10															
11															
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21															
22															
23															
24															
25															

PivotTable Field List

Choose fields to add to report:

- Σ Fact Sales**
  - Amount
  - Quant
  - Total Amount**
- Dim Card
  - Card ID
  - Card Key
  - Card Start Date Key
  - City
  - Date Of Birth Key

Drag fields between areas below:

Report Filter Column Labels

Row Labels Values

Total Amount

Defer Layout Update Update

Ready 100%

Book3 - Microsoft Excel

PivotTable Tools

Home Insert Page Layout Formulas Data Review View Options Design

Cut Copy Format Painter

Font Alignment Number

A2 25856189,4900288

Total Amount

Choose fields to add to report:

- Fact Sales
  - Amount
  - Quant
  - Total Amount
- Dim Card
  - Card ID
  - Card Key
  - Card Start Date Key
  - City
  - Date Of Birth Key

Drag fields between areas below:

Report Filter Column Labels

Row Labels Values

Total Amount

Defer Layout Update Update

Format the numeric value as Currency type.

Clipboard

Font

Alignment

Number

Cells

Editing

PivotTable Field List

Choose fields to add to report:

- Fact Sales
  - Amount
  - Quant
  - Total Amount
- Dim Card
  - Card ID
  - Card Key
  - Card Start Date Key
  - City
  - Date Of Birth Key

Drag fields between areas below:

Report Filter Column Labels

Row Labels Values

Total Amount

Defer Layout Update Update

Sheet1 Sheet2 Sheet3

Ready

100%

Book3 - Microsoft Excel

PivotTable Tools

Home Insert Page Layout Formulas Data Review View Options Design

Cut Copy Format Painter

Font Alignment Number Styles Cells Editing

A2 25856189,4900288

Total Amount

25 856 189,49 €

PivotTable Field List

Choose fields to add to report:

- Σ Fact Sales**
  - Amount
  - Quant
  - Total Amount**
- Dim Card**
  - Card ID
  - Card Key
  - Card Start Date Key
  - City
  - Date Of Birth Key

Drag fields between areas below:

Report Filter Column Labels

Row Labels Values

Total Amount

Defer Layout Update Update

Sheet1 Sheet2 Sheet3

Ready 100%

The screenshot shows a Microsoft Excel window with the 'PivotTable Tools' ribbon selected. The main area displays a single cell containing the value '25856189,4900288'. The PivotTable Field List pane on the right indicates that the 'Total Amount' field has been selected from the 'Fact Sales' dimension. A red arrow highlights the value in cell A2.

Book3 - Microsoft Excel

PivotTable Tools

Home Insert Page Layout Formulas Data Review View Options Design

Cut Copy Format Painter

Font Alignment Number Styles Cells Editing

A2 25856189,4900288

Total Amount  
25 856 189,49 €

PivotTable Field List

Choose fields to add to report:

Total Amount

Dim Card

Card ID

Card Key

Card Start Date Key

City

Date Of Birth Key

Gender

Marital Status

Num Children

Drag fields between areas below:

Report Filter Column Labels

Row Labels Values

Total Amount

Defer Layout Update Update

Sheet1 Sheet2 Sheet3

Ready 100%

Drag the City attribute to the Column Labels section.

Book3 - Microsoft Excel

PivotTable Tools

Home Insert Page Layout Formulas Data Review View Options Design

Cut Copy Format Painter

Font Alignment Number Styles Cells Editing

A2

Column Labels

	A	B	C	D	E	F	G	H	I	J
1	Column Labels									
2	Catburg	Foxton	Kingsville	Princeton	Queensbury	Ravensville	Grand Total			
3	Total Amount	4 431 463,47 €	4 228 212,23 €	4 313 124,81 €	4 259 075,93 €	4 280 486,45 €	4 343 826,60 €	25 856 189,49 €		
4										
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PivotTable Field List

Choose fields to add to report:

- Upmarket Flag
- Dim Payment Method
  - Payment Method Description
  - Payment Method ID
  - Payment Method Key
- Dim Store
  - Store ID
  - Store Key
  - Store Name

Drag fields between areas below:

Report Filter Column Labels

Row Labels Values

Total Amount

Defer Layout Update Update

Drag the *Payment Method Description* attribute to the *Column Labels* section.

A2

Clipboard

Font Alignment Number Styles Cells Editing

Conditional Formatting as Table Styles Insert Delete Format

Clear Sort & Find & Select

100%



The image shows the Microsoft Excel ribbon at the top of a worksheet. The tabs visible are Home, Insert, Page Layout, Formulas, Data, Review, View, Options, and Design. The Home tab is currently selected. Below the ribbon, there are several groups of tools: Clipboard (Paste, Cut, Copy, Format Painter), Font (Calibri, font size 11, bold, italic, underline, font color), Alignment (Wrap Text, Merge & Center), Number (General, percentage, comma separator, decimal separator), Styles (Conditional Formatting, Format as Table, Cell Styles), Cells (Insert, Delete, Format), and Editing (AutoSum, Fill, Clear, Sort & Filter, Find & Select). Each group has a dropdown arrow in the bottom right corner.

The screenshot shows the 'PivotTable Field List' window with the following details:

- PivotTable Field List Header:** PivotTable Field List
- Choose fields to add to report:** Dim Payment Method, Dim Store, Dim Time
- Dim Payment Method Fields:** Payment Method Description (selected), Payment Method ID, Payment Method Key
- Dim Store Fields:** Store ID, Store Key, Store Name
- Dim Time Fields:** None
- Drag fields between areas below:**
- Report Filter:** City, Payment Met...
- Column Labels:** None
- Row Labels:** None
- Values:** Total Amount
- Buttons at the bottom:** Defer Layout Update, Update

A red arrow points from the 'Report Filter' section towards the 'City' dropdown in the 'Column Labels' area.

Book3 - Microsoft Excel

PivotTable Tools

Change the order of the two attributes by dragging one of them.

A2

	A	B	C	D	E	F	G	H	I	J	
1	Column Labels										
2	Cash Advance						Cash Advance Total	Check			
3	Catburg	Foxton	Kingsville	Princeton	Queensbury	Ravensville	Catburg	Foxton	King		
4	Total Amount	413 129,51 €	390 355,10 €	400 445,91 €	380 133,59 €	378 208,34 €	378 459,43 €	2 340 731,88 €	787 139,44 €	765 008,13 €	771
5											
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PivotTable Field List

Choose fields to add to report:

- Dim Payment Method
  - Payment Method Description
  - Payment Method ID
  - Payment Method Key
- Dim Store
  - Store ID
  - Store Key
  - Store Name
- Dim Time

Drag fields between areas below:

Report Filter Column Labels

Payment Met...  
City

Row Labels Values

Total Amount

Defer Layout Update Update

Sheet1 Sheet2 Sheet3

Ready 100%

Book3 - Microsoft Excel

PivotTable Tools

Home Insert Page Layout Formulas Data Review View Options Design

Cut Copy Format Painter

Font Alignment Number Styles Cells Editing

E2 Debit Card

Column Labels

+ Cash Advance + Check + Credit Card + Debit Card Grand Total

Total Amount 2 340 731,88 € 4 673 624,23 € 11 811 811,94 € 7 030 021,44 € 25 856 189,49 €

PivotTable Field List

Choose fields to add to report:

- Dim Payment Method
  - Payment Method Description
  - Payment Method ID
  - Payment Method Key
- Dim Store
  - Store ID
  - Store Key
  - Store Name
- Dim Time

Drag fields between areas below:

Report Filter Column Labels

Payment Met... City

Row Labels Values

Total Amount

Defer Layout Update Update

Roll up the detail just to the payment method level.

	A	B	C	D	E	F	G	H	I	J	
1	Column Labels										
2	+ Cash Advance		+ Check		+ Credit Card		+ Debit Card	Grand Total			
3											
4	Total Amount	2 340 731,88 €	4 673 624,23 €	11 811 811,94 €	7 030 021,44 €	25 856 189,49 €					
5											
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25											

Sheet1 Sheet2 Sheet3

Ready 100%

Book3 - Microsoft Excel

PivotTable Tools

Home Insert Page Layout Formulas Data Review View Options Design

Cut Copy Format Painter

Font Alignment Number Styles Cells Editing

E2 Debit Card

Column Labels

+ Cash Advance + Check + Credit Card + Debit Card Grand Total

Total Amount 2 340 731,88 € 4 673 624,23 € 11 811 811,94 € 7 030 021,44 € 25 856 189,49 €

PivotTable Field List

Choose fields to add to report:

- Quarter
- Semester
- Week
- Weekend
- Year

Dim Item

- Brand Description
- Categ Description
- Item Description
- Item ID

Drag fields between areas below:

Report Filter Column Labels

Payment Met... City

Row Labels Values

Total Amount

Defer Layout Update Update

Sheet1 Sheet2 Sheet3

Ready 100%

Drag the Categ Description attribute to the Row Labels section.

A B C D E F G H I J

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Book3 - Microsoft Excel

PivotTable Tools

E2 Debit Card

	A	B	C	D	E	F	G	H	I	J	
1	Total Amount	Column Labels				Grand Total					
2		+ Cash Advance	+ Check	+ Credit Card	+ Debit Card						
3	Row Labels										
4	Accessoires	269 967,98 €	524 537,54 €	1 328 711,27 €	811 331,63 €	2 934 548,42 €					
5	Computers	209 811,29 €	428 466,19 €	1 111 656,76 €	650 699,20 €	2 400 633,44 €					
6	Game Cartridges	42 689,91 €	88 410,89 €	217 450,80 €	130 023,26 €	478 574,86 €					
7	Game Consoles	155 136,00 €	296 003,00 €	758 146,00 €	453 142,00 €	1 662 427,00 €					
8	Hi-Fi	1 134 735,81 €	2 259 404,94 €	5 669 630,37 €	3 357 969,35 €	12 421 740,47 €					
9	Software	76 572,89 €	145 907,67 €	369 171,74 €	223 273,00 €	814 925,30 €					
10	TV & Video	451 818,00 €	930 894,00 €	2 357 045,00 €	1 403 583,00 €	5 143 340,00 €					
11	Grand Total	2 340 731,88 €	4 673 624,23 €	11 811 811,94 €	7 030 021,44 €	25 856 189,49 €					
12											
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PivotTable Field List

Choose fields to add to report:

- Semester
- Week
- Weekend
- Year

Dim Item

- Brand Description
- Categ Description
- Item Description
- Item ID
- Item Key

Drag fields between areas below:

Report Filter Column Labels

- Payment Met... ▾
- City ▾

Row Labels

Values

- Categ Descri... ▾
- Total Amount ▾

Defer Layout Update

Update

Clipboard

Font

Alignment

Number

Styles

Cells

Editing

AutoSum

Fill

Clear

Sort & Filter

Find & Select

Home Insert Page Layout Formulas Data Review View Options Design

Sheet1 Sheet2 Sheet3

Ready 100%

Book3 - Microsoft Excel

PivotTable Tools

Home Insert Page Layout Formulas Data Review View Options Design

Cut Copy Format Painter

Font Alignment Number Conditional Formatting

Clipboard

E2 Debit Card

Total Amount Column Labels

+ Cash Advance + Check + Credit Card + Debit Card Grand Total

Row Labels

	A	B	C	D	E	F	G	H	I	J
1	Total Amount	Column Labels								
2		+ Cash Advance	+ Check	+ Credit Card	+ Debit Card	Grand Total				
3	Row Labels									
4	Accessoires	269 967,98 €	524 537,54 €	1 328 711,27 €	811 331,63 €	2 934 548,42 €				
5	Computers	209 811,29 €	428 466,19 €	1 111 656,76 €	650 699,20 €	2 400 633,44 €				
6	Game Cartridges	42 689,91 €	88 410,89 €	217 450,80 €	130 023,26 €	478 574,86 €				
7	Game Consoles	155 136,00 €	296 003,00 €	758 146,00 €	453 142,00 €	1 662 427,00 €				
8	Hi-Fi	1 134 735,81 €	2 259 404,94 €	5 669 630,37 €	3 357 969,35 €	12 421 740,47 €				
9	Software	76 572,89 €	145 907,67 €	369 171,74 €	223 273,00 €	814 925,30 €				
10	TV & Video	451 818,00 €	930 894,00 €	2 357 045,00 €	1 403 583,00 €	5 143 340,00 €				
11	Grand Total	2 340 731,88 €	4 673 624,23 €	11 811 811,94 €	7 030 021,44 €	25 856 189,49 €				
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Sheet1 Sheet2 Sheet3

Drag the Sub Categ Descrip attribute to the Row Labels section.

PivotTable Field List

Choose fields to add to report:

- Dim Item
- Brand Description
- Categ Description
- Item Description
- Item ID
- Item Key
- Sub Categ Descrip
- Upmarket Flag

Dim Payment Method

Drag fields between areas below:

Report Filter	Column Labels
	Payment Met... City
Row Labels	Σ Values
Categ Descri...	Total Amount
Defer Layout Update	Update

Book3 - Microsoft Excel

PivotTable Tools

Home Insert Page Layout Formulas Data Review View Options Design

Cut Copy Format Painter

Font Alignment Number Styles Cells Editing

E2 Debit Card

Clipboard

AutoSum Fill Sort & Filter

Clear Find & Select

	A	B	C	D	E	F	G	H	I
1	Total Amount	Column Labels							
2		+ Cash Advance	+ Check	+ Credit Card	+ Debit Card	Grand Total			
3	Row Labels								
4	Accessoires	269 967,98 €	524 537,54 €	1 328 711,27 €	811 331,63 €	2 934 548,42 €			
5	Adaptor	16 682,01 €	31 349,42 €	79 690,64 €	47 551,51 €	175 273,58 €			
6	Batteries	30 070,39 €	60 340,66 €	153 223,42 €	93 447,49 €	337 081,96 €			
7	Cable	9 384,31 €	18 925,46 €	47 679,04 €	29 542,17 €	105 530,98 €			
8	Cassette Tapes	28 749,15 €	56 506,13 €	143 030,12 €	86 410,98 €	314 696,38 €			
9	Cleaner Kit	1 702,90 €	3 480,62 €	8 912,74 €	5 158,60 €	19 254,86 €			
10	Disk Box	19 554,42 €	38 077,59 €	98 478,73 €	59 969,81 €	216 080,55 €			
11	Floppy Disks	55 430,32 €	109 193,39 €	262 044,55 €	162 639,14 €	589 307,40 €			
12	Headset	2 728,86 €	5 362,78 €	13 714,28 €	8 531,42 €	30 337,34 €			
13	Mini Speakers	12 536,51 €	21 914,08 €	64 212,43 €	36 359,91 €	135 022,93 €			
14	Mouse	23 008,54 €	46 082,10 €	117 150,24 €	70 753,36 €	256 994,24 €			
15	Mouse Pad	12 481,96 €	23 783,16 €	61 022,08 €	37 363,80 €	134 651,00 €			
16	Printer Cartridge	26 031,93 €	48 860,53 €	122 322,09 €	77 299,77 €	274 514,32 €			
17	Screen Cleaner	2 910,16 €	5 679,47 €	14 153,21 €	8 856,13 €	31 598,97 €			
18	Stand	3 712,73 €	5 861,36 €	15 850,13 €	10 643,35 €	36 067,57 €			
19	Videotapes	24 983,79 €	49 120,79 €	127 227,57 €	76 804,19 €	278 136,34 €			
20	Computers	209 811,29 €	428 466,19 €	1 111 656,76 €	650 699,20 €	2 400 633,44 €			
21	Desktop Computer	17 729,00 €	44 895,00 €	147 275,00 €	70 613,00 €	280 512,00 €			
22	Laptop Computer	22 433,00 €	40 466,00 €	118 655,00 €	65 845,00 €	247 399,00 €			
23	Printer	169 649,29 €	343 105,19 €	845 726,76 €	514 241,20 €	1 872 722,44 €			
24	Game Cartridges	42 689,91 €	88 410,89 €	217 450,80 €	130 023,26 €	478 574,86 €			

PivotTable Field List

Choose fields to add to report:

Dim Item

Categ Description

Item Description

Item ID

Item Key

Sub Categ Descrip

Upmarket Flag

Dim Payment Method

Drag fields between areas below:

Report Filter Column Labels

Payment Met... City

Row Labels Values

Categ Descri... Sub Categ De...

Defer Layout Update Update

Book3 - Microsoft Excel

PivotTable Tools

Home Insert Page Layout Formulas Data Review View Options Design

Cut Copy Format Painter

Font Alignment Number Conditional Formatting

Cells

A21 TV & Video

Total Amount Column Labels

+ Cash Advance + Check + Credit Card + Debit Card Grand Total

Row Labels

	A	B	C	D	E	F	G	H	I
1	Total Amount								
2		+ Cash Advance	+ Check	+ Credit Card	+ Debit Card	Grand Total			
3	Row Labels								
4	+ Accesoires	269 967,98 €	524 537,54 €	1 328 711,27 €	811 331,63 €	2 934 548,42 €			
5	+ Computers	209 811,29 €	428 466,19 €	1 111 656,76 €	650 699,20 €	2 400 633,44 €			
6	Desktop Computer	17 729,00 €	44 895,00 €	147 275,00 €	70 613,00 €	280 512,00 €			
7	Laptop Computer	22 433,00 €	40 466,00 €	118 655,00 €	65 845,00 €	247 399,00 €			
8	Printer	169 649,29 €	343 105,19 €	845 726,76 €	514 241,20 €	1 872 722,44 €			
9	+ Game Cartridges	42 689,91 €	88 410,89 €	217 450,80 €	130 023,26 €	478 574,86 €			
10	Action	4 225,36 €	8 915,67 €	22 216,83 €	13 710,68 €	49 068,54 €			
11	Arcade Classics	4 610,05 €	9 180,05 €	22 991,04 €	14 215,00 €	50 996,14 €			
12	Fighting	4 495,34 €	9 454,83 €	21 892,65 €	13 456,60 €	49 299,42 €			
13	Flight Simulator	4 675,49 €	8 815,77 €	23 849,83 €	13 660,64 €	51 001,73 €			
14	Puzzles	3 975,67 €	10 153,76 €	23 340,40 €	14 264,52 €	51 734,35 €			
15	Racing	4 809,88 €	8 565,97 €	23 055,81 €	14 469,98 €	50 901,64 €			
16	Shoot-em-up	4 899,81 €	9 254,91 €	22 201,41 €	12 436,67 €	48 792,80 €			
17	Sports	10 998,31 €	24 069,93 €	57 902,83 €	33 809,17 €	126 780,24 €			
18	+ Game Consoles	155 136,00 €	296 003,00 €	758 146,00 €	453 142,00 €	1 662 427,00 €			
19	+ Hi-Fi	1 134 735,81 €	2 259 404,94 €	5 669 630,37 €	3 357 969,35 €	12 421 740,47 €			
20	+ Software	76 572,89 €	145 907,67 €	369 171,74 €	223 273,00 €	814 925,30 €			
21	+ TV & Video	451 818,00 €	930 894,00 €	2 357 045,00 €	1 403 583,00 €	5 143 340,00 €			
22	Grand Total	2 340 731,88 €	4 673 624,23 €	11 811 811,94 €	7 030 021,44 €	25 856 189,49 €			
23									
24									
25									

PivotTable Field List

Choose fields to add to report:

- Dim Item
  - Brand Description
  - Categ Description
  - Item Description
  - Item ID
  - Item Key
  - Sub Categ Descrip
  - Upmarket Flag
- Dim Payment Method

Drag fields between areas below:

Report Filter Column Labels

Payment Met... City

Row Labels Values

Categ Descri... Sub Categ De...

Total Amount

Defer Layout Update Update

Book3 - Microsoft Excel

PivotTable Tools

Home Insert Page Layout Formulas Data Review View Options Design

Cut Copy Format Painter

Font Alignment Number Styles Cells Editing

A21 TV & Video

Total Amount Column Labels

+ Cash Advance + Check + Credit Card + Debit Card Grand Total

Row Labels

	A	B	C	D	E	F	G	H	I
1	Total Amount	Column Labels							
2		+ Cash Advance	+ Check	+ Credit Card	+ Debit Card	Grand Total			
3	Row Labels								
4	+ Accesoires	269 967,98 €	524 537,54 €	1 328 711,27 €	811 331,63 €	2 934 548,42 €			
5	+ Computers	209 811,29 €	428 466,19 €	1 111 656,76 €	650 699,20 €	2 400 633,44 €			
6	Desktop Computer	17 729,00 €	44 895,00 €	147 275,00 €	70 613,00 €	280 512,00 €			
7	Laptop Computer	22 433,00 €	40 466,00 €	118 655,00 €	65 845,00 €	247 399,00 €			
8	Printer	169 649,29 €	343 105,19 €	845 726,76 €	514 241,20 €	1 872 722,44 €			
9	+ Game Cartridges	42 689,91 €	88 410,89 €	217 450,80 €	130 023,26 €	478 574,86 €			
10	Action	4 225,36 €	8 915,67 €	22 216,83 €	13 710,68 €	49 068,54 €			
11	Arcade Classics	4 610,05 €	9 180,05 €	22 991,04 €	14 215,00 €	50 996,14 €			
12	Fighting	4 495,34 €	9 454,83 €	21 892,65 €	13 456,60 €	49 299,42 €			
13	Flight Simulator	4 675,49 €	8 815,77 €	23 849,83 €	13 660,64 €	51 001,73 €			
14	Puzzles	3 975,67 €	10 153,76 €	23 340,40 €	14 264,52 €	51 734,35 €			
15	Racing	4 809,88 €	8 565,97 €	23 055,81 €	14 469,98 €	50 901,64 €			
16	Shoot-em-up	4 899,81 €	9 254,91 €	22 201,41 €	12 436,67 €	48 792,80 €			
17	Sports	10 998,31 €	24 069,93 €	57 902,83 €	33 809,17 €	126 780,24 €			
18	+ Game Consoles	155 136,00 €	296 003,00 €	758 146,00 €	453 142,00 €	1 662 427,00 €			
19	+ Hi-Fi	1 134 735,81 €	2 259 404,94 €	5 669 630,37 €	3 357 969,35 €	12 421 740,47 €			
20	+ Software	76 572,89 €	145 907,67 €	369 171,74 €	223 273,00 €	814 925,30 €			
21	+ TV & Video	451 818,00 €	930 894,00 €	2 357 045,00 €	1 403 583,00 €	5 143 340,00 €			
22	Grand Total	2 340 731,88 €	4 673 624,23 €	11 811 811,94 €	7 030 021,44 €	25 856 189,49 €			
23									
24									
25									

PivotTable Field List

Choose fields to add to report:

- Day Number Of Year
- Day Of Week
- Full Date
- Month
- Month Name
- Quarter
- Semester
- Week
- Weekend
- Year

Drag fields between areas below:

Report Filter Column Labels

- Payment Met... ▾
- City ▾

Row Labels Values

- Categ Descri... ▾
- Sub Categ De... ▾
- Total Amount ▾

Defer Layout Update Update

Drag the Quarter attribute (DimDate dimension) to the Report Filter section.

Book1 - Microsoft Excel

PivotTable Tools

Home Insert Page Layout Formulas Data Review View Options Design

Cut Copy Format Painter

Font Alignment Number Conditional Formatting

Cells

AutoSum Fill Sort & Filter

Total Amount

A3

Clipboard

Font Alignment Number Conditional Formatting

Cells

AutoSum Fill Sort & Filter

Total Amount

A3

Clipboard

Quarter	All							
Total Amount	Column Labels	+ Cash Advance	+ Check	+ Credit Card	+ Debit Card	Grand Total		
Row Labels								
Accessoires	269 967,98 €	524 537,54 €	1 328 711,27 €	811 331,63 €	2 934 548,42 €			
Computers	209 811,29 €	428 466,19 €	1 111 656,76 €	650 699,20 €	2 400 633,44 €			
Desktop Computer	17 729,00 €	44 895,00 €	147 275,00 €	70 613,00 €	280 512,00 €			
Laptop Computer	22 433,00 €	40 466,00 €	118 655,00 €	65 845,00 €	247 399,00 €			
Printer	169 649,29 €	343 105,19 €	845 726,76 €	514 241,20 €	1 872 722,44 €			
Game Cartridges	42 689,91 €	88 410,89 €	217 450,80 €	130 023,26 €	478 574,86 €			
Action	4 225,36 €	8 915,67 €	22 216,83 €	13 710,68 €	49 068,54 €			
Arcade Classics	4 610,05 €	9 180,05 €	22 991,04 €	14 215,00 €	50 996,14 €			
Fighting	4 495,34 €	9 454,83 €	21 892,65 €	13 456,60 €	49 299,42 €			
Flight Simulator	4 675,49 €	8 815,77 €	23 849,83 €	13 660,64 €	51 001,73 €			
Puzzles	3 975,67 €	10 153,76 €	23 340,40 €	14 264,52 €	51 734,35 €			
Racing	4 809,88 €	8 565,97 €	23 055,81 €	14 469,98 €	50 901,64 €			
Shoot-em-up	4 899,81 €	9 254,91 €	22 201,41 €	12 436,67 €	48 792,80 €			
Sports	10 998,31 €	24 069,93 €	57 902,83 €	33 809,17 €	126 780,24 €			
Game Consoles	155 136,00 €	296 003,00 €	758 146,00 €	453 142,00 €	1 662 427,00 €			
Hi-Fi	1 134 735,81 €	2 259 404,94 €	5 669 630,37 €	3 357 969,35 €	12 421 740,47 €			
Software	76 572,89 €	145 907,67 €	369 171,74 €	223 273,00 €	814 925,30 €			
TV & Video	451 818,00 €	930 894,00 €	2 357 045,00 €	1 403 583,00 €	5 143 340,00 €			
Grand Total	2 340 731,88 €	4 673 624,23 €	11 811 811,94 €	7 030 021,44 €	25 856 189,49 €			

Book3 - Microsoft Excel

The screenshot shows a Microsoft Excel interface with a ribbon menu at the top. The 'Home' tab is selected. The ribbon includes sections for Home, Insert, Page Layout, Formulas, Data, Review, and View. Below the ribbon is a toolbar with various icons for operations like Cut, Copy, Paste, and Format Painter. The main area displays a pivot table. The first row has columns labeled A through K. Column B contains the value 'All'. Column C has a dropdown arrow pointing to the right, which is highlighted with a red arrow in the image. The pivot table itself has rows for 'Quarter' (with values 1 and 2), 'Total Amount' (with a 'Column Labels' dropdown showing 'Cash Advance', 'Check', 'Credit Card', 'Debit Card', and 'Grand Total'), and 'Row Labels' (with categories like 'Accessoires', 'Computers', 'Game Cartridges', etc.). The data section shows various amounts in euros for each category and payment method.

	A	B	C	D	E	F	G	H	I	J	K
1	Quarter	All									
2											
3	Total Amount	Column Labels									
4		+ Cash Advance	+ Check	+ Credit Card	+ Debit Card	Grand Total					
5	Row Labels										
6	Accessoires	269 967,98 €	524 537,54 €	1 328 711,27 €	811 331,63 €	2 934 548,42 €					
7	Computers	209 811,29 €	428 466,19 €	1 111 656,76 €	650 699,20 €	2 400 633,44 €					
8	Desktop Computer	17 729,00 €	44 895,00 €	147 275,00 €	70 613,00 €	280 512,00 €					
9	Laptop Computer	22 433,00 €	40 466,00 €	118 655,00 €	65 845,00 €	247 399,00 €					
10	Printer	169 649,29 €	343 105,19 €	845 726,76 €	514 241,20 €	1 872 722,44 €					
11	Game Cartridges	42 689,91 €	88 410,89 €	217 450,80 €	130 023,26 €	478 574,86 €					
12	Action	4 225,36 €	8 915,67 €	22 216,83 €	13 710,68 €	49 068,54 €					
13	Arcade Classics	4 610,05 €	9 180,05 €	22 991,04 €	14 215,00 €	50 996,14 €					
14	Fighting	4 495,34 €	9 454,83 €	21 892,65 €	13 456,60 €	49 299,42 €					
15	Flight Simulator	4 675,49 €	8 815,77 €	23 849,83 €	13 660,64 €	51 001,73 €					
16	Puzzles	3 975,67 €	10 153,76 €	23 340,40 €	14 264,52 €	51 734,35 €					
17	Racing	4 809,88 €	8 565,97 €	23 055,81 €	14 469,98 €	50 901,64 €					
18	Shoot-em-up	4 899,81 €	9 254,91 €	22 201,41 €	12 436,67 €	48 792,80 €					
19	Sports	10 998,31 €	24 069,93 €	57 902,83 €	33 809,17 €	126 780,24 €					
20	Game Consoles	155 136,00 €	296 003,00 €	758 146,00 €	453 142,00 €	1 662 427,00 €					
21	Hi-Fi	1 134 735,81 €	2 259 404,94 €	5 669 630,37 €	3 357 969,35 €	12 421 740,47 €					
22	Software	76 572,89 €	145 907,67 €	369 171,74 €	223 273,00 €	814 925,30 €					
23	TV & Video	451 818,00 €	930 894,00 €	2 357 045,00 €	1 403 583,00 €	5 143 340,00 €					
24	Grand Total	2 340 731,88 €	4 673 624,23 €	11 811 811,94 €	7 030 021,44 €	25 856 189,49 €					
25											

Book3 - Microsoft Excel

Select just the third and fourth quarters (of 2001) – we just have data for the 2001 year.

The screenshot shows a Microsoft Excel spreadsheet titled "Book3 - Microsoft Excel". The ribbon menu is visible at the top, with the "Page Layout" tab selected. A callout bubble on the right side of the screen contains the text: "Select just the third and fourth quarters (of 2001) – we just have data for the 2001 year." A red arrow points from this text to the "Scale" dropdown in the "Page Setup" group of the ribbon.

A context menu is open over the data range G7:K24. The menu includes options like "All", "1", "2", "3", "4", "Select Multiple Items", "OK", and "Cancel". Red arrows point to the "3" and "4" options in the list, and another red arrow points to the "Select Multiple Items" checkbox. The "OK" button is highlighted with a red box.

The data in the spreadsheet consists of several columns: Quarter (A), All (B), Check (C), Credit Card (D), Debit Card (E), and Grand Total (F). The data is organized by category in column A and by quarter in columns C-E. The Grand Total column (F) contains the sum of the three selected quarters (3, 4, and 5).

	A	B	C	D	E	F
1	Quarter	All				
2						
3	Total Amount					
4						
5	Row Labels					
6	+ Acceso...					
7	Computer...					
8	Desktop...					
9	Laptop...					
10	Printer...					
11	Game Consoles					
12	Action					
13	Arcade					
14	Fighting	495,34 €				
15	Flight Simulator	4 675,49 €				
16	Puzzles	3 975,67 €				
17	Racing	4 809,88 €				
18	Shoot-em-up	4 899,81 €				
19	Sports	10 998,31 €				
20	Game Consoles	155 136,00 €				
21	Hi-Fi	1 134 735,81 €				
22	Software	76 572,89 €				
23	TV & Video	451 818,00 €				
24	Grand Total	2 340 731,88 €	4 673 624,23 €	11 811 811,94 €	7 030 021,44 €	25 856 189,49 €

Book3 - Microsoft Excel

The screenshot shows a Microsoft Excel spreadsheet titled "Book3 - Microsoft Excel". The ribbon menu is visible at the top, with the "Page Layout" tab selected. In the center of the screen is a pivot table. The first row contains labels: "Quarter" in A1, "(Multiple Items)" in B1, and several column labels in C1 through G1. A red arrow points to the dropdown arrow next to "(Multiple Items)". The second row has "Total Amount" in A2 and "Column Labels" in B2. Below these are rows for "Row Labels" (A5) and various product categories like "Accessoires", "Computers", "Game Cartridges", etc. The data section starts from row 6, showing sales figures for each category across five payment methods: Cash Advance, Check, Credit Card, Debit Card, and Grand Total. The "Grand Total" column is highlighted in orange. The bottom of the table includes rows for "Game Consoles", "Hi-Fi", "Software", "TV & Video", and a final "Grand Total" row.

	A	B	C	D	E	F	G	H	I	J	K
1	Quarter	(Multiple Items)									
2											
3	Total Amount	Column Labels									
4		+ Cash Advance	+ Check	+ Credit Card	+ Debit Card	Grand Total					
5	Row Labels										
6	+ Accessoires	124 015,11 €	237 555,80 €	605 729,32 €	364 608,82 €	1 331 909,05 €					
7	+ Computers	103 499,43 €	212 580,75 €	539 339,94 €	322 103,31 €	1 177 523,43 €					
8	Desktop Computer	12 186,00 €	28 464,00 €	93 787,00 €	41 896,00 €	176 333,00 €					
9	Laptop Computer	10 842,00 €	21 631,00 €	59 652,00 €	37 369,00 €	129 494,00 €					
10	Printer	80 471,43 €	162 485,75 €	385 900,94 €	242 838,31 €	871 696,43 €					
11	+ Game Cartridges	19 124,78 €	40 082,70 €	96 000,23 €	58 498,92 €	213 706,63 €					
12	Action	1 493,33 €	4 325,45 €	10 214,55 €	5 324,56 €	21 357,89 €					
13	Arcade Classics	2 212,46 €	4 295,50 €	10 379,35 €	7 137,38 €	24 024,69 €					
14	Fighting	2 212,64 €	3 900,85 €	9 844,98 €	6 603,72 €	22 562,19 €					
15	Flight Simulator	2 142,87 €	3 911,00 €	11 123,49 €	6 033,83 €	23 211,19 €					
16	Puzzles	2 002,95 €	4 789,77 €	10 064,43 €	6 777,52 €	23 634,67 €					
17	Racing	1 918,05 €	3 706,14 €	10 104,59 €	6 613,07 €	22 341,85 €					
18	Shoot-em-up	2 227,61 €	4 250,25 €	9 694,72 €	5 224,46 €	21 397,04 €					
19	Sports	4 914,87 €	10 903,74 €	24 574,12 €	14 784,38 €	55 177,11 €					
20	+ Game Consoles	69 648,00 €	134 816,00 €	352 126,00 €	198 749,00 €	755 339,00 €					
21	+ Hi-Fi	536 555,08 €	1 096 008,48 €	2 677 718,87 €	1 580 046,79 €	5 890 329,22 €					
22	+ Software	34 888,19 €	67 711,90 €	174 251,38 €	98 810,43 €	375 661,90 €					
23	+ TV & Video	258 383,00 €	524 964,00 €	1 330 589,00 €	781 316,00 €	2 895 252,00 €					
24	Grand Total	1 146 113,59 €	2 313 719,63 €	5 775 754,74 €	3 404 133,27 €	12 639 721,23 €					
25											

Ready

Sheet1 Sheet2 Sheet3

100%

Book3 - Microsoft Excel

PivotTable Tools

Home Insert Page Layout Formulas Data Review View Options Design

Width: Automatic Height: Automatic Scale: 100% Gridlines Headings

Margins Orientation Size Print Area Breaks Background Print Titles

Themes Effects Themes Page Setup

C8 ffx 28464

Quarter (Multiple Items)

Total Amount Column Labels

+ Cash Advance + Check + Credit Card + Debit Card Grand Total

Row Labels

Accessoires	124 015,11 €	237 555,80 €	605 729,32 €	364 608,82 €	1 331 909,05 €
Computers	103 499,43 €	212 580,75 €	539 339,94 €	322 103,31 €	1 177 523,43 €
Desktop Computer	12 186,00 €	28 464,00 €	93 787,00 €	41 896,00 €	176 333,00 €
Laptop Computer	10 842,00 €	21 631,00 €	59 652,00 €	37 369,00 €	129 494,00 €
Printer	80 471,43 €	162 485,75 €	385 900,94 €	242 838,31 €	871 696,43 €
Game Cartridges	19 124,78 €	40 082,70 €	96 000,23 €	58 498,92 €	213 706,63 €
Action	1 493,33 €	4 325,45 €	10 214,55 €	5 324,56 €	21 357,89 €
Arcade Classics	2 212,46 €	4 295,50 €	10 379,35 €	7 137,38 €	24 024,69 €
Fighting	2 212,64 €	3 900,85 €	9 844,98 €	6 603,72 €	22 562,19 €
Flight Simulator	2 142,87 €	3 911,00 €	11 123,49 €	6 033,83 €	23 211,19 €
Puzzles	2 002,95 €	4 789,77 €	10 064,43 €	6 777,52 €	23 634,67 €
Racing	1 918,05 €	3 706,14 €	10 104,59 €	6 613,07 €	22 341,85 €
Shoot-em-up	2 227,61 €	4 250,25 €	9 694,72 €	5 224,46 €	21 397,04 €
Sports	4 914,87 €	10 903,74 €	24 574,12 €	14 784,38 €	55 177,11 €
Game Consoles	69 648,00 €	134 816,00 €	352 126,00 €	198 749,00 €	755 339,00 €
Hi-Fi	536 555,08 €	1 096 008,48 €	2 677 718,87 €	1 580 046,79 €	5 890 329,22 €
Software	34 888,19 €	67 711,90 €	174 251,38 €	98 810,43 €	375 661,90 €
TV & Video	258 383,00 €	524 964,00 €	1 330 589,00 €	781 316,00 €	2 895 252,00 €
Grand Total	1 146 113,59 €	2 313 719,63 €	5 775 754,74 €	3 404 133,27 €	12 639 721,23 €

PivotTable Field List

Choose fields to add to report:

- Dim Time
  - Dinner Time
  - Full Time
  - Hour
  - Lunch Time
  - Minute
  - Period
  - Second
  - Time Key

Drag fields between areas below:

Report Filter	Column Labels
Quarter	Payment Met...
	City
Row Labels	Σ Values
Categ Descri...	Total Amount
Sub Categ De...	

Defer Layout Update Update

Book3 - Microsoft Excel

PivotTable Tools

Home Insert Page Layout Formulas Data Review View Options Design

Themes Colors Fonts Effects Margins Orientation Size Print Area Breaks Background Print Titles Width: Automatic Height: Automatic Scale: 100% Gridlines View Print Headings View Print Sheet Options Bring to Front Send to Back Selection Pane Align Group Rotate Page Setup Scale to Fit

C8 f<sub>x</sub> 212580,75

A B C D E F G H I

1 Quarter (Multiple Items) ▾

2 Period All ▾

3

4 Total Amount Column Labels ▾

5 + Cash Advance + Check + Credit Card + Debit Card Grand Total

6 Row Labels ▾

7 + Accesoires 124 015,11 € 237 555,80 € 605 729,32 € 364 608,82 € 1 331 909,05 €

8 Computers 103 499,43 € 212 580,75 € 539 339,94 € 322 103,31 € 1 177 523,43 €

9 Desktop Computer 12 186,00 € 28 464,00 € 93 787,00 € 41 896,00 € 176 333,00 €

10 Laptop Computer 10 842,00 € 21 631,00 € 59 652,00 € 37 369,00 € 129 494,00 €

11 Printer 80 471,43 € 162 485,75 € 385 900,94 € 242 838,31 € 871 696,43 €

12 Game Cartridges 19 124,78 € 40 082,70 € 96 000,23 € 58 498,92 € 213 706,63 €

13 Action 1 493,33 € 4 325,45 € 10 214,55 € 5 324,56 € 21 357,89 €

14 Arcade Classics 2 212,46 € 4 295,50 € 10 379,35 € 7 137,38 € 24 024,69 €

15 Fighting 2 212,64 € 3 900,85 € 9 844,98 € 6 603,72 € 22 562,19 €

16 Flight Simulator 2 142,87 € 3 911,00 € 11 123,49 € 6 033,83 € 23 211,19 €

17 Puzzles 2 002,95 € 4 789,77 € 10 064,43 € 6 777,52 € 23 634,67 €

18 Racing 1 918,05 € 3 706,14 € 10 104,59 € 6 613,07 € 22 341,85 €

19 Shoot-em-up 2 227,61 € 4 250,25 € 9 694,72 € 5 224,46 € 21 397,04 €

20 Sports 4 914,87 € 10 903,74 € 24 574,12 € 14 784,38 € 55 177,11 €

21 Game Consoles 69 648,00 € 134 816,00 € 352 126,00 € 198 749,00 € 755 339,00 €

22 Hi-Fi 536 555,08 € 1 096 008,48 € 2 677 718,87 € 1 580 046,79 € 5 890 329,22 €

23 Software 34 888,19 € 67 711,90 € 174 251,38 € 98 810,43 € 375 661,90 €

24 TV & Video 258 383,00 € 524 964,00 € 1 330 589,00 € 781 316,00 € 2 895 252,00 €

25 Grand Total 1 146 112,50 € 2 212 710,62 € 5 775 751,78 € 3 801 123,27 € 12 620 721,22 €

PivotTable Field List

Choose fields to add to report:

Dim Time

- Dinner Time
- Full Time
- Hour
- Lunch Time
- Minute
- Period
- Second
- Time Key

Drag fields between areas below:

Report Filter Column Labels

Quarter ▾	Payment Met... ▾
Period ▾	City ▾

Row Labels Values

Categ Descri... ▾	Total Amount ▾
Sub Categ De... ▾	

Defer Layout Update Update

Select just the Afternoon period.

The screenshot shows a Microsoft Excel PivotTable setup. The PivotTable Field List on the right indicates that the 'Period' field is selected. A dialog box is open, showing a hierarchical list of items under 'Period': All, Afternoon, Evening, and Morning. The 'Afternoon' item is highlighted with a red arrow pointing to it. The 'OK' button in the dialog box is also highlighted with a red arrow pointing to it. The PivotTable itself displays sales data categorized by Quarter, Period, Payment Method, and Sub Category. The 'Afternoon' period is selected in the PivotTable, corresponding to the selection in the dialog box.

	A	B	C	D	E	F	G	H	I
1	Quarter	(Multiple Items)							
2	Period	All							
3	Total Amount								
4		All	Afternoon						
5			Evening						
6			Morning						
7	Row Labels								
8	Accesoires								
9	Computer								
10	Desktop								
11	Laptop								
12	Printer								
13	Game Cards								
14	Action								
15	Arcade								
16	Fighting								
17	Flight Simulator								
18	Puzzles								
19	Racing								
20	Shoot-em-up								
21	Sports								
22	Game Consoles								
23	Hi-Fi								
24	Software								
25	TV & Video								
	Grand Total	1 146 112,00 €	2 212 710,62 €	5 775 751,78 €	2 401 122,27 €	12 620 721,22 €			

Book3 - Microsoft Excel

PivotTable Tools

Home Insert Page Layout Formulas Data Review View Options Design

Themes Colors Fonts Effects Margins Orientation Size Print Area Breaks Background Print Titles Width: Automatic Height: Automatic Scale: 100% Gridlines View Print Headings View Print Scale to Fit Sheet Options Bring to Front Send to Back Selection Pane Align Group Rotate Page Setup

C8 f<sub>x</sub> 139683,54

A B C D E F G H I

1 Quarter (Multiple Items)

2 Period Afternoon  

3

4 Total Amount Column Labels 

- Cash Advance
- Check
- Credit Card
- Debit Card
- Grand Total

5

6 Row Labels

7  Accesoires 82 741,59 € 158 598,30 € 406 667,05 € 243 156,06 € 891 163,00 €

8  Computers 71 782,26 € 139 683,54 € 359 013,83 € 211 835,18 € 782 314,81 €

9 Desktop Computer 9 040,00 € 17 977,00 € 66 871,00 € 25 067,00 € 118 955,00 €

10 Laptop Computer 8 494,00 € 13 688,00 € 41 617,00 € 23 330,00 € 87 129,00 €

11 Printer 54 248,26 € 108 018,54 € 250 525,83 € 163 438,18 € 576 230,81 €

12  Game Cartridges 12 731,43 € 26 611,92 € 63 064,70 € 39 563,99 € 141 972,04 €

13 Action 993,84 € 2 846,92 € 6 413,71 € 3 316,69 € 13 571,16 €

14 Arcade Classics 1 328,54 € 2 877,06 € 6 817,86 € 4 944,68 € 15 968,14 €

15 Fighting 1 678,23 € 2 562,31 € 6 123,77 € 4 645,57 € 15 009,88 €

16 Flight Simulator 1 598,39 € 2 477,49 € 7 172,62 € 3 986,01 € 15 234,51 €

17 Puzzles 1 053,97 € 3 516,17 € 6 713,06 € 4 769,77 € 16 052,97 €

18 Racing 1 373,57 € 2 452,49 € 7 177,71 € 4 370,51 € 15 374,28 €

19 Shoot-em-up 1 538,40 € 2 731,99 € 6 323,39 € 3 626,12 € 14 219,90 €

20 Sports 3 166,49 € 7 147,49 € 16 322,58 € 9 904,64 € 36 541,20 €

21  Game Consoles 44 740,00 € 89 060,00 € 238 970,00 € 132 073,00 € 504 843,00 €

22  Hi-Fi 363 619,68 € 737 290,63 € 1 786 380,03 € 1 053 770,57 € 3 941 060,91 €

23  Software 24 264,46 € 45 623,57 € 112 487,23 € 65 583,05 € 247 958,31 €

24  TV & Video 172 746,00 € 362 020,00 € 885 153,00 € 510 831,00 € 1 930 750,00 €

25 Grand Total 772 625,12 € 1 559 097,06 € 3 951 735,91 € 2 256 912,05 € 9 440 062,07 €

PivotTable Field List

Choose fields to add to report:

Dim Time
 

- Dinner Time
- Full Time
- Hour
- Lunch Time
- Minute
- Period
- Second
- Time Key

Drag fields between areas below:

Report Filter Column Labels

Quarter	Payment Met...
Period	City

Row Labels Values

Categ Descri...	Total Amount
Sub Categ De...	

Defer Layout Update

Book3 - Microsoft Excel

PivotTable Tools

Drill down the Credit Card data to see the details by City.

	A	B	C	D	E	F	G	H	I	J	
1	Quarter	(Multiple Items)									
2	Period	Afternoon									
3											
4	Total Amount	Column Labels									
5		+ Cash Advance	+ Check	Credit Card	Catburg	Foxton	Kingsville	Princeton	Queensbury	Ravensville	Credit Card
6	Row Labels										
7	Accessoires	82 741,59 €	158 598,30 €	69 671,84 €	68 830,99 €	64 015,42 €	68 500,74 €	66 418,31 €	69 229,75 €	406 667	
8	Computers	71 782,26 €	139 683,54 €	63 289,47 €	65 045,47 €	56 751,40 €	57 712,45 €	55 168,61 €	61 046,43 €	359 013	
9	Desktop Computer	9 040,00 €	17 977,00 €	11 635,00 €	20 526,00 €	6 642,00 €	8 042,00 €	7 091,00 €	12 935,00 €	66 871	
10	Laptop Computer	8 494,00 €	13 688,00 €	10 942,00 €	5 296,00 €	5 695,00 €	7 094,00 €	7 444,00 €	5 146,00 €	41 617	
11	Printer	54 248,26 €	108 018,54 €	40 712,47 €	39 223,47 €	44 414,40 €	42 576,45 €	40 633,61 €	42 965,43 €	250 525	
12	Game Cartridges	12 731,43 €	26 611,92 €	10 449,56 €	10 304,26 €	11 073,35 €	9 440,41 €	10 818,87 €	10 978,25 €	63 064	
13	Action	993,84 €	2 846,92 €	1 263,79 €	1 014,10 €	943,87 €	929,02 €	1 064,01 €	1 198,92 €	6 413	
14	Arcade Classics	1 328,54 €	2 877,06 €	874,03 €	1 053,97 €	1 468,43 €	849,23 €	1 443,55 €	1 128,65 €	6 817	
15	Fighting	1 678,23 €	2 562,31 €	1 168,87 €	824,20 €	1 198,78 €	974,00 €	744,26 €	1 213,66 €	6 123	
16	Flight Simulator	1 598,39 €	2 477,49 €	1 093,81 €	1 083,81 €	1 468,65 €	1 338,65 €	988,96 €	1 198,74 €	7 172	
17	Puzzles	1 053,97 €	3 516,17 €	1 213,92 €	1 298,59 €	969,00 €	894,10 €	1 343,57 €	993,88 €	6 713	
18	Racing	1 373,57 €	2 452,49 €	1 198,85 €	1 213,74 €	1 133,73 €	809,09 €	1 338,73 €	1 483,57 €	7 177	
19	Shoot-em-up	1 538,40 €	2 731,99 €	879,22 €	1 423,40 €	919,09 €	904,14 €	1 103,77 €	1 093,77 €	6 323	
20	Sports	3 166,49 €	7 147,49 €	2 757,07 €	2 392,45 €	2 971,80 €	2 742,18 €	2 792,02 €	2 667,06 €	16 322	
21	Game Consoles	44 740,00 €	89 060,00 €	42 138,00 €	37 399,00 €	37 733,00 €	40 879,00 €	41 686,00 €	39 135,00 €	238 970	
22	Hi-Fi	363 619,68 €	737 290,63 €	295 250,10 €	297 714,10 €	304 608,01 €	291 865,97 €	310 085,93 €	286 855,92 €	1 786 380	
23	Software	24 264,46 €	45 623,57 €	18 262,66 €	17 167,12 €	18 015,65 €	17 856,78 €	20 911,88 €	20 273,14 €	112 487	
24	TV & Video	172 746,00 €	362 020,00 €	154 965,00 €	133 597,00 €	144 158,00 €	140 858,00 €	145 629,00 €	165 946,00 €	885 153	
25	Grand Total	772 625,12 €	1 559 997,06 €	651 026,62 €	620 057,04 €	626 351,92 €	627 112,35 €	650 719,50 €	653 451,10 €	3 951 752	

PivotTable Field List

Choose fields to add to report:

- Dim Time
  - Dinner Time
  - Full Time
  - Hour
  - Lunch Time
  - Minute
  - Period
  - Second
  - Time Key

Drag fields between areas below:

Report Filter	Column Labels
Quarter	Payment Met...
Period	City
Row Labels	Σ Values
Categ Descri...	Total Amount
Sub Categ De...	

Defer Layout Update  Update

Book3 - Microsoft Excel

PivotTable Tools

Home Insert Page Layout Formulas Data Review View Options Design

Width: Automatic Height: Automatic Scale: 100% Gridlines Headings

Margins Orientation Size Print Area Breaks Background Print Titles

Themes Effects Page Setup

D5 Credit Card

Quarter (Multiple Items) Afternoon

Total Amount Column Labels

Cash Advance Check Credit Card Credit Card

Row Labels

	A	B	C	D	E	F	G	H	I	J
1	Quarter	(Multiple Items)								
2	Period	Afternoon								
3										
4	Total Amount	Column Labels								
5		Cash Advance Check Credit Card Credit Card								
6	Row Labels									
7	Accessoires	82 741,59 €	158 598,30 €	69 671,84 €	68 830,99 €	64 015,42 €	68 500,74 €	66 418,31 €	69 229,75 €	406 667
8	Computers	71 782,26 €	139 683,54 €	63 289,47 €	65 045,47 €	56 751,40 €	57 712,45 €	55 168,61 €	61 046,43 €	359 013
9	Desktop Computer	9 040,00 €	17 977,00 €	11 635,00 €	20 526,00 €	6 642,00 €	8 042,00 €	7 091,00 €	12 935,00 €	66 871
10	Laptop Computer	8 494,00 €	13 688,00 €	10 942,00 €	5 296,00 €	5 695,00 €	7 094,00 €	7 444,00 €	5 146,00 €	41 617
11	Printer	54 248,26 €	108 018,54 €	40 712,47 €	39 223,47 €	44 414,40 €	42 576,45 €	40 633,61 €	42 965,43 €	250 525
12	Game Cartridges	12 731,43 €	26 611,92 €	10 449,56 €	10 304,26 €	11 073,35 €	9 440,41 €	10 818,87 €	10 978,25 €	63 064
13	Action	993,84 €	2 846,92 €	1 263,79 €	1 014,10 €	943,87 €	929,02 €	1 064,01 €	1 198,92 €	6 413
14	Arcade Classics	1 328,54 €	2 877,06 €	874,03 €	1 053,97 €	1 468,43 €	849,23 €	1 443,55 €	1 128,65 €	6 817
15	Fighting	1 678,23 €	2 562,31 €	1 168,87 €	824,20 €	1 198,78 €	974,00 €	744,26 €	1 213,66 €	6 123
16	Flight Simulator	1 598,39 €	2 477,49 €	1 093,81 €	1 083,81 €	1 468,65 €	1 338,65 €	988,96 €	1 198,74 €	7 172
17	Puzzles	1 053,97 €	3 516,17 €	1 213,92 €	1 298,59 €	969,00 €	894,10 €	1 343,57 €	993,88 €	6 713
18	Racing	1 373,57 €	2 452,49 €	1 198,85 €	1 213,74 €	1 133,73 €	809,09 €	1 338,73 €	1 483,57 €	7 177
19	Shoot-em-up	1 538,40 €	2 731,99 €	879,22 €	1 423,40 €	919,09 €	904,14 €	1 103,77 €	1 093,77 €	6 323
20	Sports	3 166,49 €	7 147,49 €	2 757,07 €	2 392,45 €	2 971,80 €	2 742,18 €	2 792,02 €	2 667,06 €	16 322
21	Game Consoles	44 740,00 €	89 060,00 €	42 138,00 €	37 399,00 €	37 733,00 €	40 879,00 €	41 686,00 €	39 135,00 €	238 970
22	Hi-Fi	363 619,68 €	737 290,63 €	295 250,10 €	297 714,10 €	304 608,01 €	291 865,97 €	310 085,93 €	286 855,92 €	1 786 380
23	Software	24 264,46 €	45 623,57 €	18 262,66 €	17 167,12 €	18 015,65 €	17 856,78 €	20 911,88 €	20 273,14 €	112 487
24	TV & Video	172 746,00 €	362 020,00 €	154 965,00 €	133 597,00 €	144 158,00 €	140 858,00 €	145 629,00 €	165 946,00 €	885 153
25	Grand Total	772 625,12 €	1 559 997,06 €	651 026,62 €	620 057,04 €	626 351,92 €	627 112,35 €	650 719,50 €	653 451,10 €	3 951 752

Sheet1 Sheet2 Sheet3

PivotTable Field List

Choose fields to add to report:

- Σ Fact Sales
  - Amount
  - Quant
  - Total Amount
- Dim Card
  - Card ID
  - Card Key
  - Card Start Date Key
  - City
  - Date Of Birth Key

Drag fields between areas below:

Report Filter	Column Labels
Quarter	Payment Met...
Period	City
Row Labels	Σ Values
Categ Descri...	Total Amount
Sub Categ De...	

Defer Layout Update Update

Drag the Quant attribute to the Values section.

The fact table *Quant* attribute now also appears, although incorrectly formatted as currency.

	A	B	C	D	E	F	G	H	I	J
1	Quarter	(Multiple Items)								
2	Period	Afternoon								
3										
4		Column Labels								
5		+ Cash Advance		+ Check	+ Credit Card	Catburg	Foxton	Kingsville		
6		Total Amount	Quant	Total Amount	Quant	Total Amount	Quant	Total Amount	Quant	
7	Row Labels									
8	Accessoires	82 741,59 €	6 641,00 €	158 598,30 €	12 614,00 €	69 671,84 €	5 622,00 €	68 830,99 €	5 133,00 €	64 015,42 €
9	Computers	71 782,26 €	330,00 €	139 683,54 €	679,00 €	63 289,47 €	282,00 €	65 045,47 €	286,00 €	56 751,40 €
10	Desktop Computer	9 040,00 €	10,00 €	17 977,00 €	23,00 €	11 635,00 €	15,00 €	20 526,00 €	24,00 €	6 642,00 €
11	Laptop Computer	8 494,00 €	6,00 €	13 688,00 €	12,00 €	10 942,00 €	8,00 €	5 296,00 €	4,00 €	5 695,00 €
12	Printer	54 248,26 €	314,00 €	108 018,54 €	644,00 €	40 712,47 €	259,00 €	39 223,47 €	258,00 €	44 414,40 €
13	Game Cartridges	12 731,43 €	361,00 €	26 611,92 €	756,00 €	10 449,56 €	300,00 €	10 304,26 €	294,00 €	11 073,35 €
14	Action	993,84 €	28,00 €	2 846,92 €	80,00 €	1 263,79 €	37,00 €	1 014,10 €	30,00 €	943,87 €
15	Arcade Classics	1 328,54 €	38,00 €	2 877,06 €	82,00 €	874,03 €	25,00 €	1 053,97 €	31,00 €	1 468,43 €
16	Fighting	1 678,23 €	49,00 €	2 562,31 €	73,00 €	1 168,87 €	33,00 €	824,20 €	24,00 €	1 198,78 €
17	Flight Simulator	1 598,39 €	45,00 €	2 477,49 €	71,00 €	1 093,81 €	31,00 €	1 083,81 €	31,00 €	1 468,65 €
18	Puzzles	1 053,97 €	31,00 €	3 516,17 €	99,00 €	1 213,92 €	36,00 €	1 298,59 €	37,00 €	969,00 €
19	Racing	1 373,57 €	39,00 €	2 452,49 €	71,00 €	1 198,85 €	35,00 €	1 213,74 €	34,00 €	1 133,73 €
20	Shoot-em-up	1 538,40 €	44,00 €	2 731,99 €	77,00 €	879,22 €	26,00 €	1 423,40 €	40,00 €	919,09 €
21	Sports	3 166,49 €	87,00 €	7 147,49 €	203,00 €	2 757,07 €	77,00 €	2 392,45 €	67,00 €	2 971,80 €
22	Game Consoles	44 740,00 €	210,00 €	89 060,00 €	410,00 €	42 138,00 €	202,00 €	37 399,00 €	171,00 €	37 733,00 €
23	Hi-Fi	363 619,68 €	2 593,00 €	737 290,63 €	5 219,00 €	295 250,10 €	2 103,00 €	297 714,10 €	2 127,00 €	304 608,01 €
24	Software	24 264,46 €	592,00 €	45 623,57 €	1 176,00 €	18 262,66 €	509,00 €	17 167,12 €	446,00 €	18 015,65 €
25	TV & Video	172 746,00 €	201,00 €	362 020,00 €	960,00 €	154 065,00 €	365,00 €	132 507,00 €	222,00 €	144 159,00 €

Book3 - Microsoft Excel

PivotTable Tools

Change the number format of the Quant attribute.

**Home** **Insert** **Page Layout** **Formulas** **Data** **Review** **View** **Options** **Design**

Cut Copy Format Painter

Font Alignment Number Conditional Formatting

Clipboard

C7 Quant

Quarter (Multiple Items)

Period Afternoon

Column Labels + Cash Advance

Row Labels Total Amo Quant

	A	B	C	D	E	F	G	H	I	J
1	Quarter	(Multiple Items)								
2	Period	Afternoon								
3										
4										
5										
6										
7	Row Labels	Total Amo	Quant	Total Amount						
8	Accessoires	82 741,59 €	6 641	9 671,84 €	5 622,00 €	68 830,99 €	5 133,00 €	64 015,42 €	5 133,00 €	64 015,42 €
9	Computers	71 782,26 €	330	3 289,47 €	282,00 €	65 045,47 €	286,00 €	56 751,40 €	286,00 €	56 751,40 €
10	Desktop Computer	9 040,00 €	10	1 635,00 €	15,00 €	20 526,00 €	24,00 €	6 642,00 €	24,00 €	6 642,00 €
11	Laptop Computer	8 494,00 €	6	1 942,00 €	8,00 €	5 296,00 €	4,00 €	5 695,00 €	4,00 €	5 695,00 €
12	Printer	54 248,26 €	314	1 712,47 €	259,00 €	39 223,47 €	258,00 €	44 414,40 €	258,00 €	44 414,40 €
13	Game Cartridges	12 731,43 €	361	1 449,56 €	300,00 €	10 304,26 €	294,00 €	11 073,35 €	294,00 €	11 073,35 €
14	Action	993,84 €	28	1 263,79 €	37,00 €	1 014,10 €	30,00 €	943,87 €	30,00 €	943,87 €
15	Arcade Classics	1 328,54 €	38	874,03 €	25,00 €	1 053,97 €	31,00 €	1 468,43 €	31,00 €	1 468,43 €
16	Fighting	1 678,23 €	49	1 168,87 €	33,00 €	824,20 €	24,00 €	1 198,78 €	24,00 €	1 198,78 €
17	Flight Simulator	1 598,39 €	45	1 093,81 €	31,00 €	1 083,81 €	31,00 €	1 468,65 €	31,00 €	1 468,65 €
18	Puzzles	1 053,97 €	31	1 213,92 €	36,00 €	1 298,59 €	37,00 €	969,00 €	37,00 €	969,00 €
19	Racing	1 373,57 €	39,00 €	2 452,49 €	71,00 €	1 198,85 €	35,00 €	1 213,74 €	34,00 €	1 133,73 €
20	Shoot-em-up	1 538,40 €	44,00 €	2 731,99 €	77,00 €	879,22 €	26,00 €	1 423,40 €	40,00 €	919,09 €
21	Sports	3 166,49 €	87,00 €	7 147,49 €	203,00 €	2 757,07 €	77,00 €	2 392,45 €	67,00 €	2 971,80 €
22	Game Consoles	44 740,00 €	210,00 €	89 060,00 €	410,00 €	42 138,00 €	202,00 €	37 399,00 €	171,00 €	37 733,00 €
23	Hi-Fi	363 619,68 €	2 593,00 €	737 290,63 €	5 219,00 €	295 250,10 €	2 103,00 €	297 714,10 €	2 127,00 €	304 608,01 €
24	Software	24 264,46 €	592,00 €	45 623,57 €	1 176,00 €	18 262,66 €	509,00 €	17 167,12 €	446,00 €	18 015,65 €
25	TV & Video	172 746,00 €	304,00 €	362 020,00 €	960,00 €	154 065,00 €	365,00 €	133 507,00 €	323,00 €	144 119,00 €

PivotTable Field List

Choose fields to add to report:

- Σ Fact Sales**
  - Amount
  - Quant
  - Total Amount
- Dim Card**
  - Card ID
  - Card Key
  - Card Start Date Key
  - City
  - Date Of Birth Key

Drag fields between areas below:

Report Filter Column Labels

Quarter Period City Σ Values

Row Labels Σ Values

Categ Descri... Sub Categ De... Total Amount Quant

Defer Layout Update Update

100%

Book3 - Microsoft Excel

PivotTable Tools

Home Insert Page Layout Formulas Data Review View Options Design

Cut Copy Format Painter Paste Clipboard Font

Calibri 11 A A Wrap Text General Conditional Formatting as Table Format Cell Styles Insert Delete Format

AutoSum Fill Sort & Filter Find & Select Clear

Editing

C7 Quant

A B C

1 Quarter (Multiple Items) 2 Period Afternoon

3

4 Column Labels + Cash Advance

5

6

7 Row Labels Total Amount Quant

8 + Accesoires 82 741,59 € 6 641,00

9 + Computers 71 782,26 € 330,00

10 Desktop Computer 9 040,00 € 10,00

11 Laptop Computer 8 494,00 € 6,00

12 Printer 54 248,26 € 314,00

13 + Game Cartridges 12 731,43 € 361,00

14 Action 993,84 € 28,00

15 Arcade Classics 1 328,54 € 38,00

16 Fighting 1 678,23 € 49,00

17 Flight Simulator 1 598,39 € 45,00

18 Puzzles 1 053,97 € 31,00

19 Racing 1 373,57 € 39,00

20 Shoot-em-up 1 538,40 € 44,00

21 Sports 3 166,49 € 87,00 € 7 147,49 € 203,00 € 2 757,07 € 77,00 € 2 392,45 € 67,00 € 2 971,80 €

22 + Game Consoles 44 740,00 € 210,00 € 89 060,00 € 410,00 € 42 138,00 € 202,00 € 37 399,00 € 171,00 € 37 733,00 €

23 + Hi-Fi 363 619,68 € 2 593,00 € 737 290,63 € 5 219,00 € 295 250,10 € 2 103,00 € 297 714,10 € 2 127,00 € 304 608,01 € 2 111,00 €

24 + Software 24 264,46 € 592,00 € 45 623,57 € 1 176,00 € 18 262,66 € 509,00 € 17 167,12 € 446,00 € 18 015,65 € 4 000,00 €

25 + TV & Video 172 746,00 € 201,00 € 362 020,00 € 960,00 € 151 065,00 € 365,00 € 122 507,00 € 322,00 € 144 159,00 € 3 000,00 €

J

Kingsville

Total Amount Quant

0 € 64 015,42 € 5 : 0 € 56 751,40 € 2 : 0 € 6 642,00 € 0 € 5 695,00 € 0 € 44 414,40 € 0 € 11 073,35 € 0 € 943,87 € 0 € 1 468,43 € 0 € 1 198,78 € 0 € 1 468,65 € 0 € 969,00 € 0 € 1 133,73 € 0 € 919,09 €

PivotTable Field List

Choose fields to add to report:

Fact Sales

Amount

Quant

Total Amount

Dim Card

Card ID

Card Key

Card Start Date Key

City

Date Of Birth Key

Drag fields between areas below:

Report Filter Column Labels

Quarter Payment Met...  
Period City  
Σ Values

Row Labels Σ Values

Categ Descri... Total Amount  
Sub Categ De... Quant

Defer Layout Update Update

Format Cells

Number Alignment Font Border Fill Protection

Category: General Number

Sample Quant

Decimal places: 0

Use 1000 Separator ()

Negative numbers: -1234 1234 -1234 -1234

Number is used for general display of numbers. Currency and Accounting offer specialized formatting for monetary value.

OK Cancel

Book3 - Microsoft Excel

PivotTable Tools

Home Insert Page Layout Formulas Data Review View Options Design

Cut Copy Format Painter

Font Alignment Number Styles Cells Editing

C7 Quant

**Quant attribute is now properly formatted as number.**

	A	B	C	D	E	F	G	H	I	J	K	L	M
1	Quarter	(Multiple Items)											
2	Period	Afternoon											
3													
4													
5													
6													
7	Row Labels	Total Amount	Quant	Total Amount	Quant	Total Amount	Quant	Total Amount	Quant	Total Amount	Quant	Total Amount	Qua
8	Accessoires	82 741,59 €	6641	158 598,30 €	12614	69 671,84 €	5622	68 830,99 €	5133	64 015,42 €	5102	68 500,74 €	50
9	Computers	71 782,26 €	330	139 683,54 €	679	63 289,47 €	282	65 045,47 €	286	56 751,40 €	287	57 712,45 €	3
10	Desktop Computer	9 040,00 €	10	17 977,00 €	23	11 635,00 €	15	20 526,00 €	24	6 642,00 €	8	8 042,00 €	5
11	Laptop Computer	8 494,00 €	6	13 688,00 €	12	10 942,00 €	8	5 296,00 €	4	5 695,00 €	5	7 094,00 €	3
12	Printer	54 248,26 €	314	108 018,54 €	644	40 712,47 €	259	39 223,47 €	258	44 414,40 €	274	42 576,45 €	3
13	Game Cartridges	12 731,43 €	361	26 611,92 €	756	10 449,56 €	300	10 304,26 €	294	11 073,35 €	313	9 440,41 €	3
14	Action	993,84 €	28	2 846,92 €	80	1 263,79 €	37	1 014,10 €	30	943,87 €	25	929,02 €	3
15	Arcade Classics	1 328,54 €	38	2 877,06 €	82	874,03 €	25	1 053,97 €	31	1 468,43 €	41	849,23 €	3
16	Fighting	1 678,23 €	49	2 562,31 €	73	1 168,87 €	33	824,20 €	24	1 198,78 €	34	974,00 €	3
17	Flight Simulator	1 598,39 €	45	2 477,49 €	71	1 093,81 €	31	1 083,81 €	31	1 468,65 €	43	1 338,65 €	3
18	Puzzles	1 053,97 €	31	3 516,17 €	99	1 213,92 €	36	1 298,59 €	37	969,00 €	28	894,10 €	3
19	Racing	1 373,57 €	39	2 452,49 €	71	1 198,85 €	35	1 213,74 €	34	1 133,73 €	31	809,09 €	3
20	Shoot-em-up	1 538,40 €	44	2 731,99 €	77	879,22 €	26	1 423,40 €	40	919,09 €	27	904,14 €	3
21	Sports	3 166,49 €	87	7 147,49 €	203	2 757,07 €	77	2 392,45 €	67	2 971,80 €	84	2 742,18 €	3
22	Game Consoles	44 740,00 €	210	89 060,00 €	410	42 138,00 €	202	37 399,00 €	171	37 733,00 €	167	40 879,00 €	2
23	Hi-Fi	363 619,68 €	2593	737 290,63 €	5219	295 250,10 €	2103	297 714,10 €	2127	304 608,01 €	2141	291 865,97 €	2
24	Software	24 264,46 €	592	45 623,57 €	1176	18 262,66 €	509	17 167,12 €	446	18 015,65 €	468	17 856,78 €	2
25	TV & Video	172 746,00 €	201	362 020,00 €	950	154 066,00 €	265	133 507,00 €	333	144 159,00 €	312	140 959,00 €	2

Ready 100% Update

Book3 - Microsoft Excel

PivotTable Tools

Home Insert Page Layout Formulas Data Review View Options Design

Cut Copy Format Painter

Font Alignment Number Styles Cells Editing

F5 Credit Card

Quarter (Multiple Items) Afternoon

Column Labels

+ Cash Advance

+ Check

+ Credit Card

Catburg Foxton Kingsville

	Quant	Total Amount						
Accessoires	6641	82 741,59 €	12614	158 598,30 €	5622	69 671,84 €	5133	68 830,99 €
Computers	330	71 782,26 €	679	139 683,54 €	282	63 289,47 €	286	65 045,47 €
Desktop Computer	10	9 040,00 €	23	17 977,00 €	15	11 635,00 €	24	20 526,00 €
Laptop Computer	6	8 494,00 €	12	13 688,00 €	8	10 942,00 €	4	5 296,00 €
Printer	314	54 248,26 €	644	108 018,54 €	259	40 712,47 €	258	39 223,47 €
Game Cartridges	361	12 731,43 €	756	26 611,92 €	300	10 449,56 €	294	10 304,26 €
Action	28	993,84 €	80	2 846,92 €	37	1 263,79 €	30	1 014,10 €
Arcade Classics	38	1 328,54 €	82	2 877,06 €	25	874,03 €	31	1 053,97 €
Fighting	49	1 678,23 €	73	2 562,31 €	33	1 168,87 €	24	824,20 €
Flight Simulator	45	1 598,39 €	71	2 477,49 €	31	1 093,81 €	31	1 083,81 €
Puzzles	31	1 053,97 €	99	3 516,17 €	36	1 213,92 €	37	1 298,59 €
Racing	39	1 373,57 €	71	2 452,49 €	35	1 198,85 €	34	1 213,74 €
Shoot-em-up	44	1 538,40 €	77	2 731,99 €	26	879,22 €	40	1 423,40 €
Sports	87	3 166,49 €	203	7 147,49 €	77	2 757,07 €	67	2 392,45 €
Game Consoles	210	44 740,00 €	410	89 060,00 €	202	42 138,00 €	171	37 399,00 €
Hi-Fi	2593	363 619,68 €	5219	737 290,63 €	2103	295 250,10 €	2127	297 714,10 €
Software	592	24 264,46 €	1176	45 623,57 €	509	18 262,66 €	446	17 167,12 €
DVDR Video	204	172 746,00 €	960	262 020,00 €	265	151 065,00 €	222	133 507,00 €

PivotTable Field List

Choose fields to add to report:

- Fact Sales
  - Amount
  - Quant
  - Total Amount
- Dim Card
  - Card ID
  - Card Key
  - Card Start Date Key
  - City
  - Date Of Birth Key

Drag fields between areas below:

Report Filter Column Labels

Quarter	Payment Met...
Period	City
	<input checked="" type="checkbox"/> Values

Row Labels Values

Categ Descri...	Quant
Sub Categ De...	Total Amount

Defer Layout Update Update

Book3 - Microsoft Excel

PivotTable Tools

Home Insert Page Layout Formulas Data Review View Options Design

Cut Copy Format Painter Paste

Font Alignment Number Conditional Formatting

Cells Insert Delete Format

AutoSum Fill Sort & Filter

Clear Find & Select

A10 Game Cartridges

General

Format Styles

Clipboard

Editing

Roll up all the categories.

	A	B	C	D	E	F	G	H	I	J	K
1	Quarter	(Multiple Items)									
2	Period	Afternoon									
3											
4		Column Labels									
5		+ Cash Advance		+ Check		+ Credit Card		+ Debit Card		Total Quant Total	1
6											
7	Row Labels	Quant	Total Amount	Quant	Total Amount	Quant	Total Amount	Quant	Total Amount		
8	+ Accesoires		6641	82 741,59 €	12614	158 598,30 €	32359	406 667,05 €	19394	243 156,06 €	71008
9	+ Computers		330	71 782,26 €	679	139 683,54 €	1684	359 013,83 €	1041	211 835,18 €	3734
10	+ Game Cartridges		361	12 731,43 €	756	26 611,92 €	1798	63 064,70 €	1129	39 563,99 €	4044
11	+ Game Consoles		210	44 740,00 €	410	89 060,00 €	1100	238 970,00 €	607	132 073,00 €	2327
12	+ Hi-Fi		2593	363 619,68 €	5219	737 290,63 €	12741	1 786 380,03 €	7482	1 053 770,57 €	28035
13	+ Software		592	24 264,46 €	1176	45 623,57 €	2884	112 487,23 €	1780	65 583,05 €	6432
14	+ TV & Video		394	172 746,00 €	860	362 020,00 €	2107	885 153,00 €	1239	510 831,00 €	4600
15	Grand Total		11121	772 625,42 €	21714	1 558 887,96 €	54673	3 851 735,84 €	32672	2 256 812,85 €	120180
16											
17											
18											
19											
20											
21											
22											
23											
24											
25											

PivotTable Field List

Choose fields to add to report:

**Σ Fact Sales**

- Amount  
 Quant  
 Total Amount

**Dim Card**

- Card ID  
 Card Key  
 Card Start Date Key  
 City  
 Date Of Birth Key

Drag fields between areas below:

Report Filter Column Labels

Quarter Period  Payment Met...  
City  City  
Σ Values  Σ Values

Row Labels

Categ Descri... Sub Categ De... Quant Total Amount

Defer Layout Update  Update

Select only the Credit Card payment method.

**PivotTable Field List**

Choose fields to add to report:

- Σ Fact Sales**
  - Amount
  - Quant
  - Total Amount
- Dim Card**
  - Card ID
  - Card Key
  - Card Start Date Key
  - City
  - Date Of Birth Key

Drag fields between areas below:

Report Filter	Column Labels
Quarter	Payment Met...
Period	City
	Σ Values
Row Labels	Σ Values
Categ Descri...	Quant
Sub Categ De...	Total Amount

**OK**   **Cancel**

**Sheet1** **Sheet2** **Sheet3**

Ready

100%

Book3 - Microsoft Excel

PivotTable Tools

Home Insert Page Layout Formulas Data Review View Options Design JV

Cut Copy Format Painter Paste Clipboard

Font Alignment Number Conditional Formatting as Table Cell Styles Insert Delete Format

AutoSum Fill Sort & Filter Find & Select Clear

A10 fx Game Cartridges

	A	B	C	D	E	F	G	H	I	J
1	Quarter	(Multiple Items)								
2	Period	Afternoon								
3										
4		Column Labels								
5		+ Credit Card								
6										
7	Row Labels	Quant	Total Amount		Total Quant	Total Total	Total Amount			
8	+ Accesoires		32359	406 667,05 €	32359	406 667,05 €				
9	+ Computers		1684	359 013,83 €	1684	359 013,83 €				
10	+ Game Cartridges		1798	63 064,70 €	1798	63 064,70 €				
11	+ Game Console		1100	238 970,00 €	1100	238 970,00 €				
12	+ Hi-Fi		12741	1 786 380,03 €	12741	1 786 380,03 €				
13	+ Software		2884	112 487,23 €	2884	112 487,23 €				
14	+ TV & Video		2107	885 153,00 €	2107	885 153,00 €				
15	Grand Total		54673	3 851 735,84 €	54673	3 851 735,84 €				
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										

PivotTable Field List

Choose fields to add to report:

Fact Sales

Amount

Quant

Total Amount

Dim Card

Card ID

Card Key

Card Start Date Key

City

Date Of Birth Key

Drag fields between areas below:

Report Filter Column Labels

Quarter

Period

Payment Met...

City

Sigma Values

Row Labels Sigma Values

Categ Descri...

Sub Categ De...

Quant

Total Amount

Defer Layout Update

Update



Drill down the Credit Card data to see the details by City.

Book3 - Microsoft Excel

Select a new worksheet and establish a connection to the Analysis Services Server.

The screenshot shows the Microsoft Excel ribbon with the 'Data' tab selected. In the 'Connections' group, the 'Existing Connections' button is highlighted with a yellow background and a red arrow pointing to it. Below the ribbon is a blank worksheet with columns A through S and rows 1 through 25. The bottom navigation bar shows 'Sheet1' and 'Sheet2', with a red arrow pointing to 'Sheet2'. A yellow callout bubble in the top right corner contains the text: 'Select a new worksheet and establish a connection to the Analysis Services Server.'

Book3 - Microsoft Excel

Use the previously created connection.

A1 fx

N O P Q R S

Existing Connections

Show: All Connections

Select a Connection:

Connections in this Workbook

- Connection [Blank]
- localhost Create Data Mart Analysis Services** [Blank] ← Red arrow pointing to this item.

Connection files on the Network

<No connections found>

Connection files on this computer

- localhost Create Data Mart Analysis Services ARMDD Data Mart [Blank]
- MSN MoneyCentral Investor Currency Rates** [Blank]
- MSN MoneyCentral Investor Major Indices** [Blank]
- MSN MoneyCentral Investor Stock Quotes** [Blank]
- tmp3317** Shortcut
- tmp7189** Shortcut
- ...-2027

Browse for More... Open Cancel

Home Insert Page Layout Formulas Data Review View

From Access From Web From Text From Other Sources Existing Connections

Refresh All Properties Edit Links

Sort Filter Advanced

Text to Remove Data Consolidate What-If Analysis

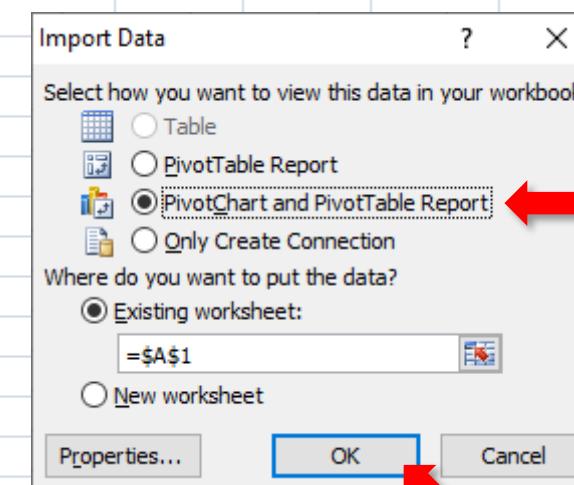
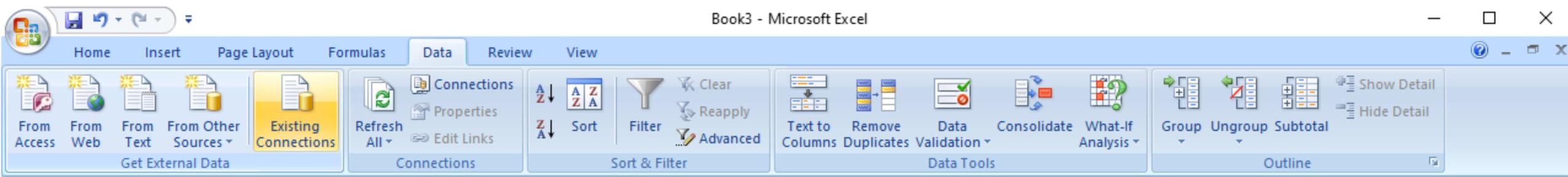
Group Ungroup Subtotal Outline

Show Detail Hide Detail

Sheet1 Sheet2 Sheet3

Ready Scroll Lock 100%

The screenshot shows the Microsoft Excel ribbon with the 'Data' tab selected. In the 'Get External Data' group, the 'Existing Connections' button is highlighted. A yellow callout bubble with the text 'Use the previously created connection.' is positioned above the 'Existing Connections' dialog box. The dialog box lists existing connections, with one entry ('localhost Create Data Mart Analysis Services') highlighted in blue and a red arrow pointing to it. Another red arrow points to the 'Open' button at the bottom right of the dialog. The main Excel workspace shows a blank sheet with columns A through S and rows 1 through 25.



The sheet is now connected to the Analysis Services cube.

Book3 - Microsoft Excel

PivotChart Tools

Home Insert Page Layout Formulas Data Review View Design Layout Format Analyze

Change Chart Type Save As Type Switch Row/Column Select Data

Chart Layouts

Chart Styles

Move Chart Location

Chart 1 f<sub>x</sub>

A B C D E F G H I J K L M N O

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25

PivotTable3

To build a report, choose fields from the PivotTable Field List

PivotTable Field List

Choose fields to add to report:

- Fact Sales
  - Amount
  - Quant
  - Total Amount
- Dim Card
  - Card ID
  - Card Key
  - Card Start Date Key
  - City
  - Date Of Birth Key

PivotChart Filter Pane

Active Fields on the PivotChart

- Report Filter
- Axis Fields (Categories)
- Legend Fields (Series)
- Values

Defer Layout Update Update

Sheet1 Sheet2 Sheet3

Ready Scroll Lock 100%

Book3 - Microsoft Excel

PivotTable Tools

Home Insert Page Layout Formulas Data Review View Options Design

Cut Copy Format Painter

Font Alignment Number Styles Cells Editing

A2 25856189,4900288

Total Amount

25856189,49

Total

30000000  
25000000  
20000000  
15000000  
10000000  
5000000  
0

Total

PivotTable Field List

Choose fields to add to report:

Σ Fact Sales

Amount

Quant

Total Amount

Dim Card

Card ID

Card Key

Card Start Date Key

City

Date Of Birth Key

Drag fields between areas below:

Report Filter Column Labels

Row Labels Values

Total Amount

Defer Layout Update Update

Sheet1 Sheet2 Sheet3

Ready Scroll Lock

100%

Drag the *Total Amount* to the *Values* section.

The screenshot shows a Microsoft Excel interface with the 'PivotTable Tools' ribbon selected. In the center, there is a bar chart titled 'Total' with a single blue bar reaching up to 250,000,000. The chart has a y-axis labeled from 0 to 300,000,000. To the left of the chart is a PivotTable with two rows visible: 'Total Amount' at the top and its value '25856189,49' in row 2. The PivotTable Field List on the right side of the screen lists various fields under 'Fact Sales' and 'Dim Card'. Two checkboxes under 'Fact Sales' are checked: 'Total Amount' and 'Amount'. A red arrow points to the 'Total Amount' checkbox. Another red arrow points to the 'Total Amount' field in the 'Values' section of the PivotTable Field List. The status bar at the bottom shows 'Ready' and '100%'.

Format the numeric value as Currency.

Book3 - Microsoft Excel

PivotTable Tools

Home Insert Page Layout Formulas Data Review View Options Design

Cut Copy Format Painter

Font Alignment Number

Clipboard

A2 f<sub>x</sub> 25856189,4900288

Total Amount

Choose an alternate currency format for the selected cell. For instance, choose Euros instead of Dollars.

Accounting Number Format

Total

30000000  
25000000  
20000000  
15000000  
10000000  
5000000  
0

Total

PivotTable Field List

Choose fields to add to report:

Fact Sales

Amount

Quant

Total Amount

Dim Card

Card ID

Card Key

Card Start Date Key

City

Date Of Birth Key

Drag fields between areas below:

Report Filter Column Labels

Row Labels Values

Total Amount

Defer Layout Update Update

Sheet1 Sheet2 Sheet3

Ready Scroll Lock

100%

Book3 - Microsoft Excel

PivotTable Tools

Home Insert Page Layout Formulas Data Review View Options Design

Cut Copy Format Painter

Font Alignment Number Styles Cells Editing

A1 Total Amount

Total Amount

25 856 189,49 €

30 000 000,00 €  
25 000 000,00 €  
20 000 000,00 €  
15 000 000,00 €  
10 000 000,00 €  
5 000 000,00 €  
- €

Total

PivotTable Field List

Choose fields to add to report:

- Dim Item
  - Brand Description
  - Categ Description
  - Item Description
  - Item ID
  - Item Key
  - Sub Categ Descrip
  - Upmarket Flag
- Dim Payment Method
  - Payment Method Description

Drag fields between areas below:

Report Filter Column Labels

Row Labels Values

Total Amount

Defer Layout Update Update

Sheet1 Sheet2 Sheet3

Ready Scroll Lock

100%

The screenshot shows a Microsoft Excel spreadsheet titled "Book3 - Microsoft Excel". The ribbon at the top includes tabs for Home, Insert, Page Layout, Formulas, Data, Review, View, Options, and Design. The "PivotTable Tools" tab is currently active. The main area displays a PivotTable with a single cell containing the value "25 856 189,49 €" at cell A1. A red arrow points to this cell. Below it, a red box highlights a vertical column of values: "30 000 000,00 €", "25 000 000,00 €", "20 000 000,00 €", "15 000 000,00 €", "10 000 000,00 €", "5 000 000,00 €", and "- €". To the right of the PivotTable, the "PivotTable Field List" pane is open, showing fields categorized under "Dim Item" and "Dim Payment Method". Under "Dim Item", "Categ Description" is highlighted with a dotted orange border. The "Values" section contains the formula "Total Amount". The status bar at the bottom indicates "Ready" and "100%".

Book3 - Microsoft Excel

PivotTable Tools

Home Insert Page Layout Formulas Data Review View Options Design

Cut Copy Format Painter

Font Alignment Number Styles Cells Editing

A1 Row Labels

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	Row Labels	Total Amount												
2	Accessoires	2 934 548,42 €												
3	Computers	2 400 633,44 €												
4	Game Cartridges	478 574,86 €												
5	Game Consoles	1 662 427,00 €												
6	Hi-Fi	12 421 740,47 €												
7	Software	814 925,30 €												
8	TV & Video	5 143 340,00 €												
9	Grand Total	25 856 189,49 €												
10														
11														
12														
13														
14														
15														
16														
17														
18														
19														
20														
21														
22														
23														
24														
25														

**Total**

PivotTable Field List

Choose fields to add to report:

- Brand Description
- Categ Description
- Item Description
- Item ID
- Item Key
- Sub Categ Descrip
- Upmarket Flag

Drag fields between areas below:

- Report Filter
- Column Labels
- Row Labels
- Values

Categ Descri... Total Amount

Defer Layout Update Update

Sheet1 Sheet2 Sheet3

Ready Scroll Lock 100% 100%

Book3 - Microsoft Excel

PivotTable Tools

Home Insert Page Layout Formulas Data Review View Options Design

Cut Copy Format Painter

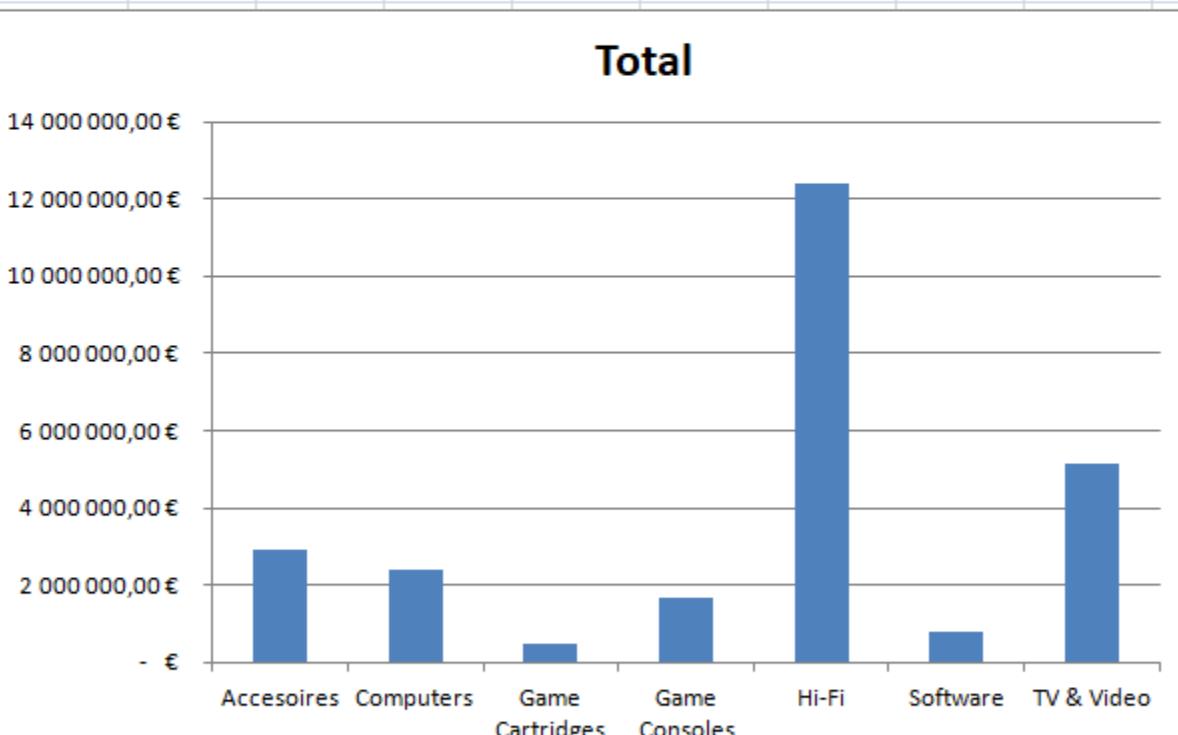
Font Alignment Number Styles Cells Editing

A1 Row Labels

Row Labels Total Amount

1	Accessoires	2 934 548,42 €
2	Computers	2 400 633,44 €
3	Game Cartridges	478 574,86 €
4	Game Consoles	1 662 427,00 €
5	Hi-Fi	12 421 740,47 €
6	Software	814 925,30 €
7	TV & Video	5 143 340,00 €
9	Grand Total	25 856 189,49 €
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		
25		

Total



Select the chart and drag the Gender (DimCard dimension) attribute to the Legend Fields section.

PivotTable Field List

Choose fields to add to report:

- Card ID
- Card Key
- Card Start Date Key
- City
- Date Of Birth Key
- Gender
- Marital Status
- Num Children
- Postal Code
- Region
- ...

Drag fields between areas below:

Report Filter      Legend Fields ...

Row Labels      Values

Categ Descri...      Total Amount

Defer Layout Update      Update

Sheet1 Sheet2 Sheet3

Ready Scroll Lock

100%

Book3 - Microsoft Excel

PivotChart Tools

Home Insert Page Layout Formulas Data Review View Design Layout Format Analyze

Cut Copy Paste Format Painter Clipboard

Font Alignment Number Styles Cells Editing

AutoSum Fill Clear Sort & Filter Find & Select

Chart 1 fx

	A	B	C	D	E	F	G	H	I	J	K	L	M
1	Total Amount	Column Labels											
2	Row Labels	Female	Male	Grand Total									
3	Accessoires	1 484 672,99 €	1 449 875,43 €	2 934 548,42 €									
4	Computers	1 199 473,13 €	1 201 160,31 €	2 400 633,44 €									
5	Game Cartridges	244 626,93 €	233 947,93 €	478 574,86 €									
6	Game Consoles	856 685,00 €	805 742,00 €	1 662 427,00 €									
7	Hi-Fi	6 222 368,97 €	6 199 371,50 €	12 421 740,47 €									
8	Software	412 150,56 €	402 774,74 €	814 925,30 €									
9	TV & Video	2 540 438,00 €	2 602 902,00 €	5 143 340,00 €									
10	Grand Total	12 960 415,58 €	12 895 773,91 €	25 856 189,49 €									
11													
12													
13													
14													
15													
16													
17													
18													
19													
20													
21													
22													
23													
24													
25													

PivotChart Filter Pane

Active Fields on the PivotChart

Report Filter

Axis Fields (Categories)

Categ Description

Legend Fields (Series)

Gender

Σ Values

Total Amount

Computers Game Cartridges Game Consoles Hi

PivotTable Field List

Choose fields to add to report:

- Card Key
- Card Start Date Key
- City
- Date Of Birth Key
- Gender
- Marital Status
- Num Children
- Postal Code
- Region
- Youngest Children

Drag fields between areas below:

Report Filter Legend Fields ...

Gender

Axis Fields (Ca... Σ Values

Categ Descri... Total Amount

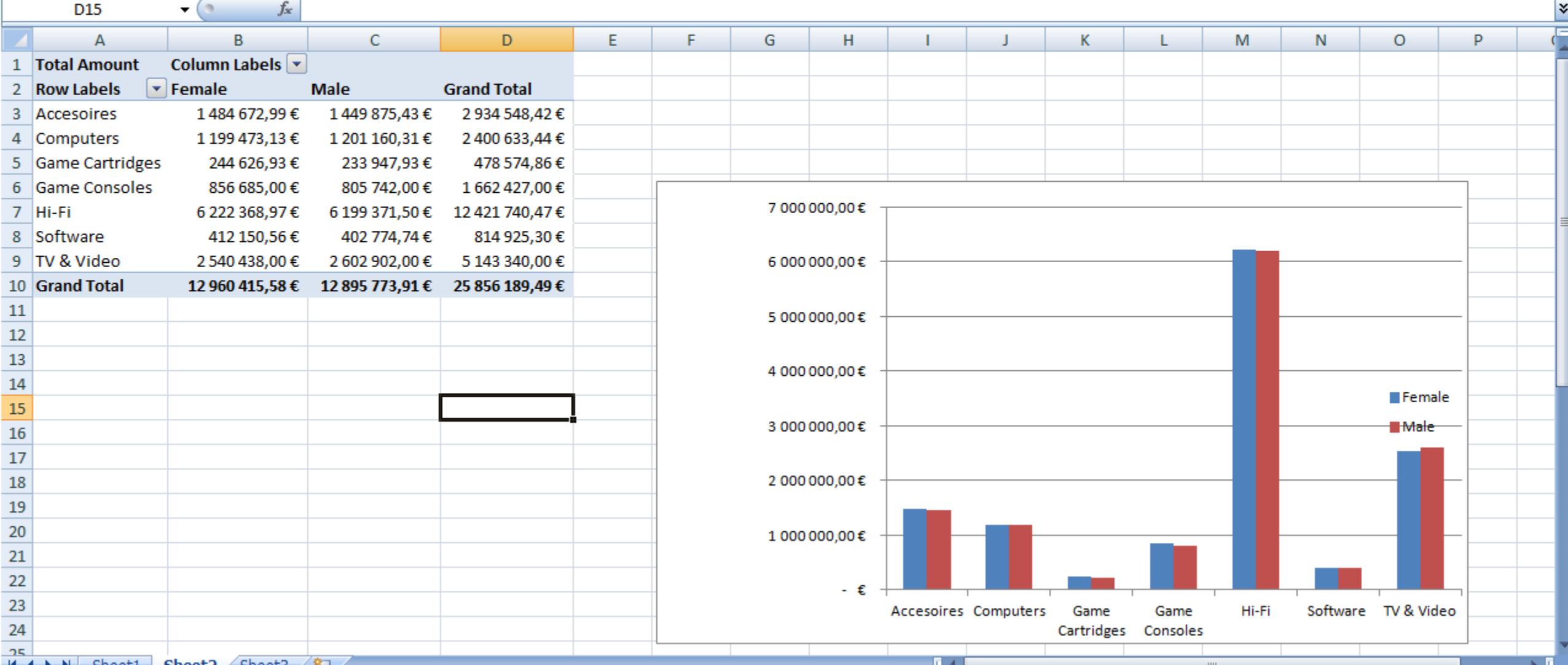
Defer Layout Update Update

Sheet1 Sheet2 Sheet3

Ready Scroll Lock 100%

Book3 - Microsoft Excel

Cut, Copy, Paste, Format Painter, Clipboard, Font, Alignment, Number, Conditional Formatting, Format as Table, Cell Styles, Insert, Delete, Format, AutoSum, Fill, Clear, Sort & Filter, Find & Select, Editing.



Book3 - Microsoft Excel

PivotChart Tools

Change the chart type.

Clipboard

Font

Alignment

Number

Styles

Cells

Editing

Chart 1

A B C D E F G H I J K L M

1 Total Amount Column Labels

2 Row Labels Female Male Grand Total

3 Accesoires 1 484 672,99 € 1 449 875,43 € 2 934 548,42 €

4 Computers 1 199 473,13 € 1 201 160,31 € 2 400 633,44 €

5 Game Cartridges 244 626,93 € 233 947,93 € 478 574,86 €

6 Game Consoles 856 685,00 € 805 742,00 € 1 662 427,00 €

7 Hi-Fi 6 222 368,97 € 6 199 371,50 € 12 421 740,47 €

8 Software 412 150,56 € 402 774,74 € 814 925,30 €

9 TV & Video 2 540 438,00 € 2 602 902,00 € 5 143 340,00 €

10 Grand Total 12 960 415,58 € 12 895 773,91 € 25 856 189,49 €

PivotTable Field List

Choose fields to add to report:

Dim Item

- Brand Description
- Categ Description
- Item Description
- Item ID
- Item Key
- Sub Categ Descrip
- Upmarket Flag

Dim Payment Method

- Payment Method Description

PivotChart Filter Pane

Active Fields on the PivotChart

Report Filter

Axis Fields (Categories)

- Categ Description

Legend Fields (Series)

- Gender

Values

- Total Amount

Change Chart Type...

7 000 000,00 €

6 000 000,00 €

Computers Game Cartridges Game Consoles Hi-Fi

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

Sheet1 Sheet2 Sheet3

Ready Scroll Lock

100%

AutoSum

Fill

Clear

Sort & Filter

Find & Select

Book3 - Microsoft Excel

PivotChart Tools

Select the highlighted chart type.

Home Insert Page Layout Formulas Data Review View Design Layout Format Analyze

Cut Copy Paste Format Painter Clipboard Font Alignment Number Styles Cells Editing

AutoSum Fill Sort & Filter Clear Find & Select

Chart 1 fx

A B C D E F G H I J K L M

1 Total Amount Column Labels

2 Row Labels Female Male Grand Total

3 Accessoires 1 484 672,99 € 1 449 875,43 € 2 934 548,42 €

4 Computers 1 199 473,13 € 1 201 160,31 € 2 400 633,44 €

5 Game Cartridges 244 626,93 € 233 947,93 € 478 574,86 €

6 Game Consoles 856 685,00 € 805 742,00 € 1 662 427,00 €

7 Hi-Fi 6 222 368,97 € 6 199 371,50 € 12 421 740,47 €

8 Software 412 150,56 € 402 774,74 € 814 925,30 €

9 TV & Video 2 540 438,00 € 2 602 902,00 € 5 143 340,00 €

10 Grand Total 12 960 415,58 € 12 895 773,91 € 25 856 189,49 €

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

Change Chart Type

Templates Column Line Pie Bar Area X Y (Scatter) Stock Surface Doughnut Bubble Radar

Column

Line

Pie

Manage Templates... Set as Default Chart OK Cancel

PivotTable Field List

Choose fields to add to report:

Dim Item

- Brand Description
- Categ Description
- Item Description
- Item ID
- Item Key
- Sub Categ Descrip
- Upmarket Flag

Dim Payment Method

- Payment Method Description

Drag fields between areas below:

Report Filter Legend Fields ...

Gender

Axis Fields (Ca...) Values

Categ Descri... Total Amount

Defer Layout Update Update

Sheet1 Sheet2 Sheet3

Ready Scroll Lock

100%

100% 100%

The graph changes to the new chart type.  
You have successfully completed this tutorial.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1	Total Amount	Column Labels															
2	Row Labels	Female	Male	Grand Total													
3	Accesoires	1 484 672,99 €	1 449 875,43 €	2 934 548,42 €													
4	Computers	1 199 473,13 €	1 201 160,31 €	2 400 633,44 €													
5	Game Cartridges	244 626,93 €	233 947,93 €	478 574,86 €													
6	Game Consoles	856 685,00 €	805 742,00 €	1 662 427,00 €													
7	Hi-Fi	6 222 368,97 €	6 199 371,50 €	12 421 740,47 €													
8	Software	412 150,56 €	402 774,74 €	814 925,30 €													
9	TV & Video	2 540 438,00 €	2 602 902,00 €	5 143 340,00 €													
10	Grand Total	12 960 415,58 €	12 895 773,91 €	25 856 189,49 €													
11																	
12																	
13																	
14																	
15																	
16																	
17																	
18																	
19																	
20																	
21																	
22																	
23																	
24																	
25																	

A stacked bar chart is displayed on the right side of the Excel sheet. The x-axis categories are 'Accesoires', 'Computers', 'Game Cartridges', 'Game Consoles', 'Hi-Fi', 'Software', and 'TV & Video'. For each category, there are two bars: a blue bar representing 'Female' and a red bar representing 'Male'. The total height of each bar corresponds to the value in column D of the table above. The y-axis is labeled in euros, ranging from - € to 14 000 000,00 €. The chart shows that 'Hi-Fi' has the highest total amount, followed by 'TV & Video'.

Home Insert Page Layout Formulas Data Review View

Cut Copy Format Painter

Font Alignment Number Styles

D17 fx

Sheet1 Sheet2 Sheet3

Ready Scroll Lock 100%