

Subject : Data Warehouse and Data Mining



Dr. Vishwanath Karad
**MIT WORLD PEACE
UNIVERSITY** | PUNE
TECHNOLOGY, RESEARCH, SOCIAL INNOVATION & PARTNERSHIPS

**(Computer Engineering and Technology)
(SYB.Tech-AI-DS)**

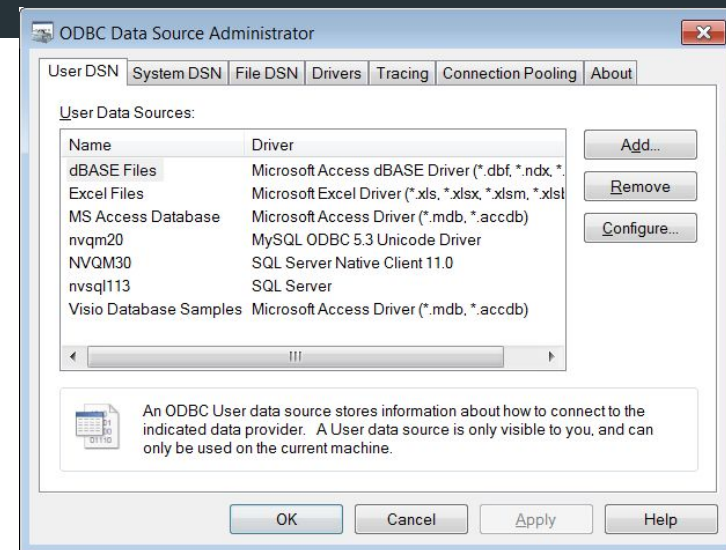
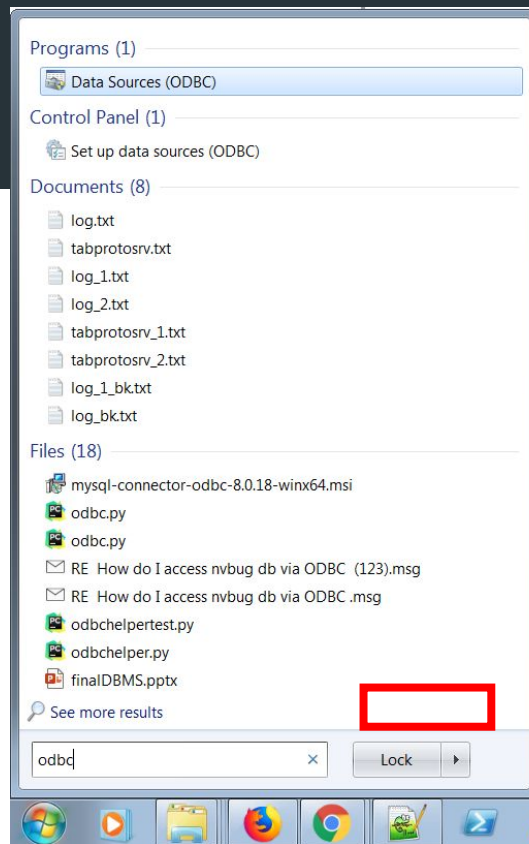
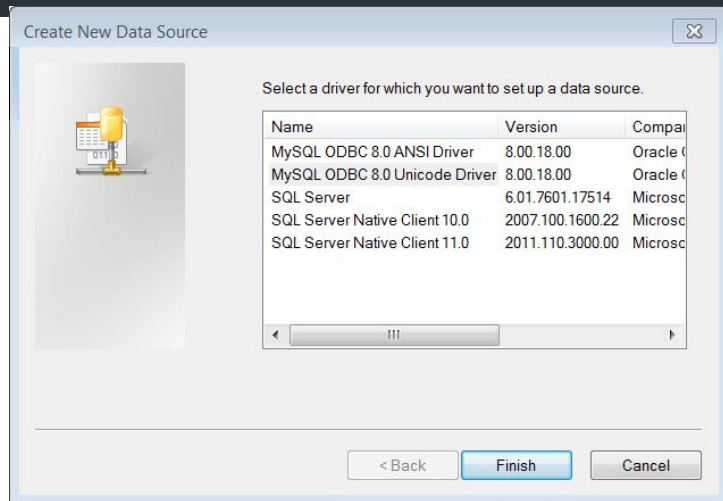


Demonstrate different OLAP Schema and Operations Using OLAP tool.

Lab Assignment 04

Data Preparation

- Install MySQL
- Import sample data required for this assignment into MySQL database using attached sql dump file .
- Download dump.sql
- Copy it in mysql bin folder
- Login to mysql
 - Mysql>source dump.sql
 - Mysql>Show databases
 - Mysql>Use movedb
 - Mysql>Show tables

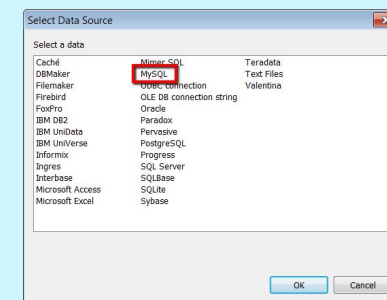
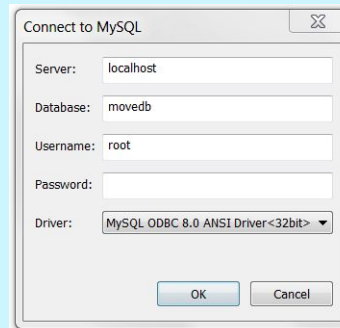
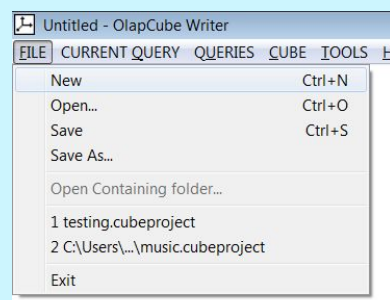


Install ODBC Drivers

Ensure ODBC drivers are installed on the windows machine where OLAPCUBE is installed

Connect to Data Source

- Open OlapCube
- Select File ☐ New and connect to MySQL data source



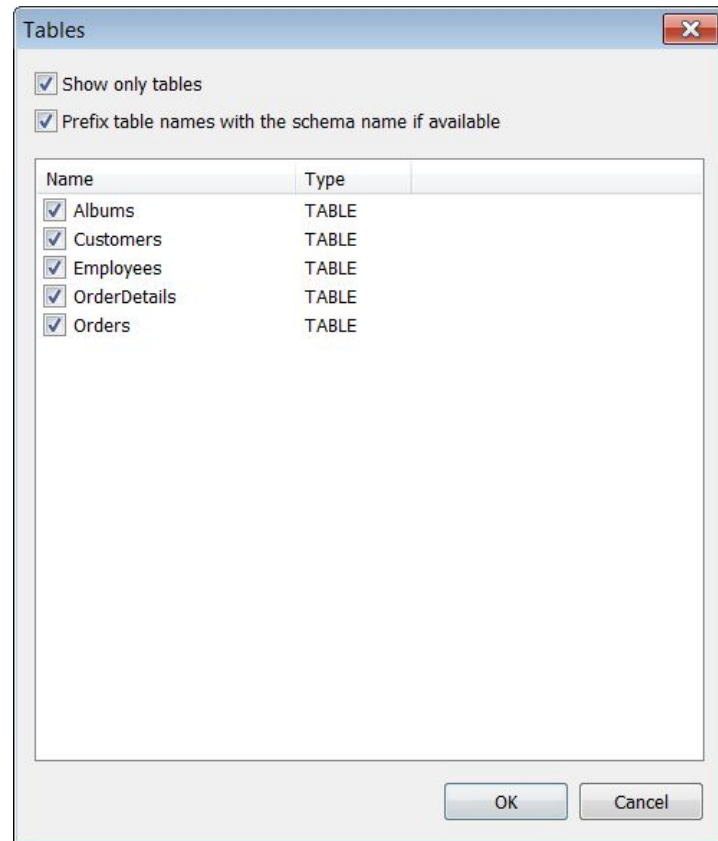
To get started, you can:

[connect to your data source](#)

[open a sample project](#)

Source Tables

Select all tables from source database



[build cube](#) [open cube](#) [open in Excel](#) [filters](#) [add more tables](#) [new relationship](#) [refresh](#) [database](#)

Albums	Customers	Employees	OrderDetails	Orders
AlbumID	CustomerID	EmployeeID	OrderID	OrderID
AlbumName	CustomerName	LastName	AlbumID	CustomerID
Artist	RegionCode	FirstName	UnitPrice	EmployeeID
LabelName	Country	Title	Quantity	OrderDate
CategoryName		ReportsTo		
UnitPrice				
ReleaseDate				

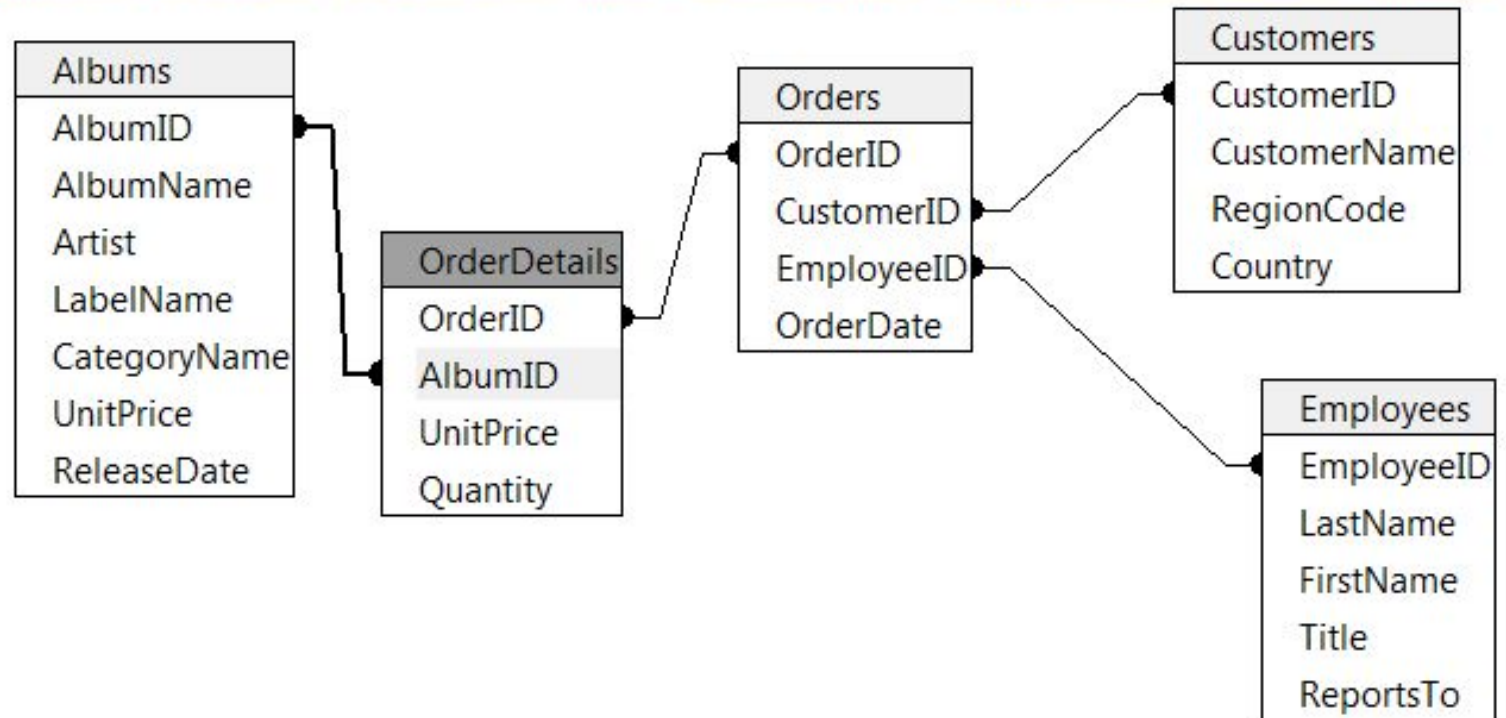
Preview of Albums

AlbumID	AlbumName	Artist	LabelName	CategoryName	UnitPrice	ReleaseDate
5303	Josh Groban	Groban, Josh	Reprise	POP	5.39	4/23/2002
5306	Shaman's Healing	Shastro	Malimba Records	RELAXATION	11.26	4/25/2002
5307	Leaves Of Hope	Ginkgo Garden	BSC Music	NEW AGE	13.2	4/27/2002
5309	Russian Soul	Shafran, Daniil: vc	The Classics Label (Launch sub)	CELLO	15.19	5/1/2002
5310	Live At The Safari Club	Chimps, The	MuSick Recordings, Inc.	ALT ROCK	11.19	5/1/2002
5311	Toddler Favorites Too!	Music For Little People	Music For Little People	CHILDREN	4.72	5/1/2002
5312	Celebration of America	Child's Celebration Series	Music For Little People	CHILDREN	10.12	5/1/2002
5322	Futureperfect	VNV Nation	Metropolis Records	ALT ROCK	13.2	5/5/2002
5323	Joined at the Hip	Williams, Buster	TCP Music	ALT ROCK	13.2	5/7/2002

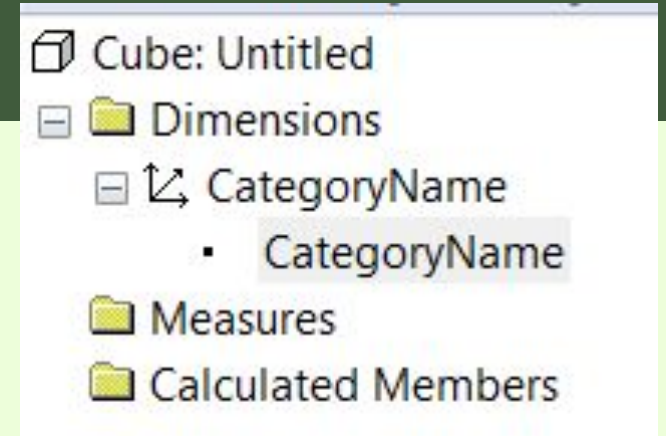
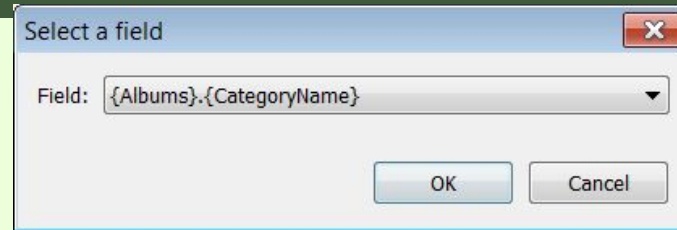
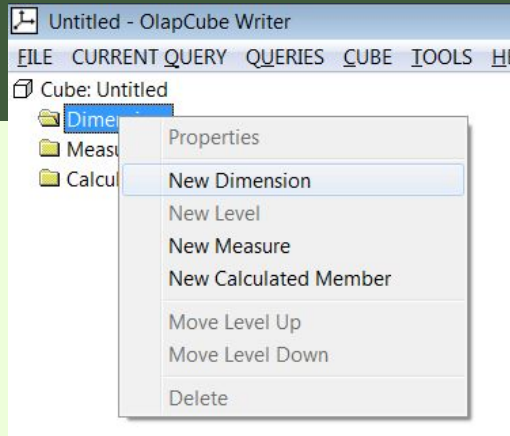
* Clicking on any table will show its data

Creating STAR Schema

[build cube](#) [open cube](#) [open in Excel](#) [filters](#) [add more tables](#) [new relationship](#) [refresh](#) [database](#)



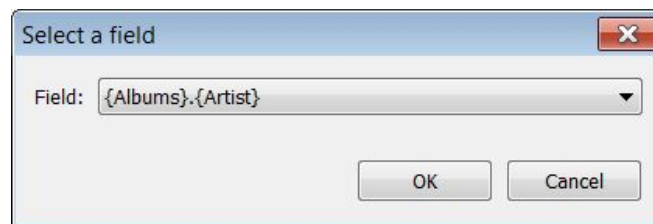
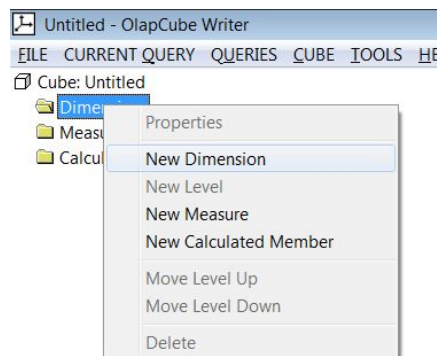
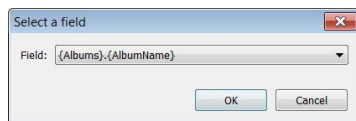
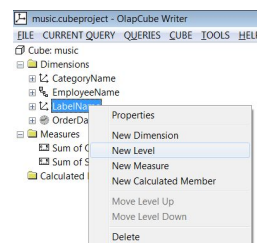
- Drag and drop fields from Orders table to join with other tables
 - Order table is the key table holding facts about the business transaction
 - Albums, Customers, Employees tables hold additional attributes



Create Dimensions

- In left hand side tree, select Dimensions ☐ New Dimension
 - Select CategoryName from Albums table as a dimension

LabelName
• LabelName
• Artist
• AlbumName



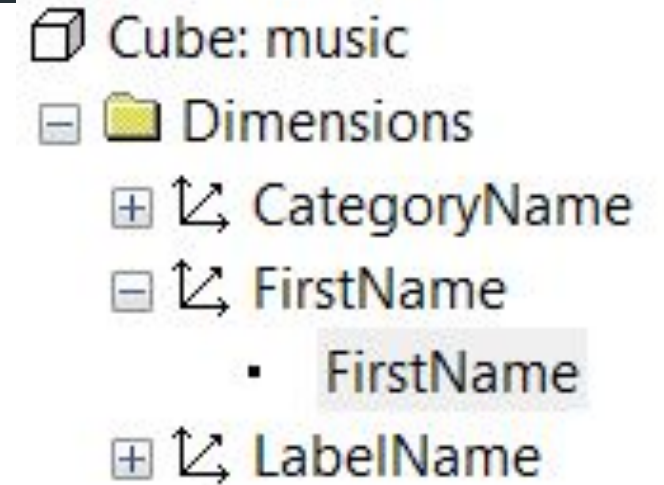
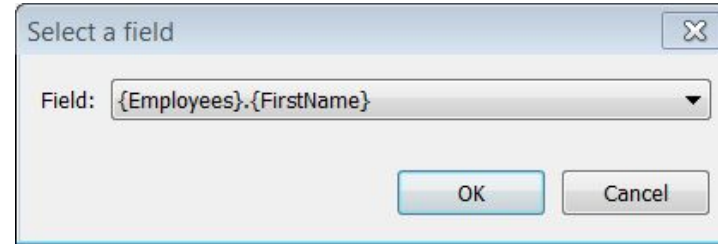
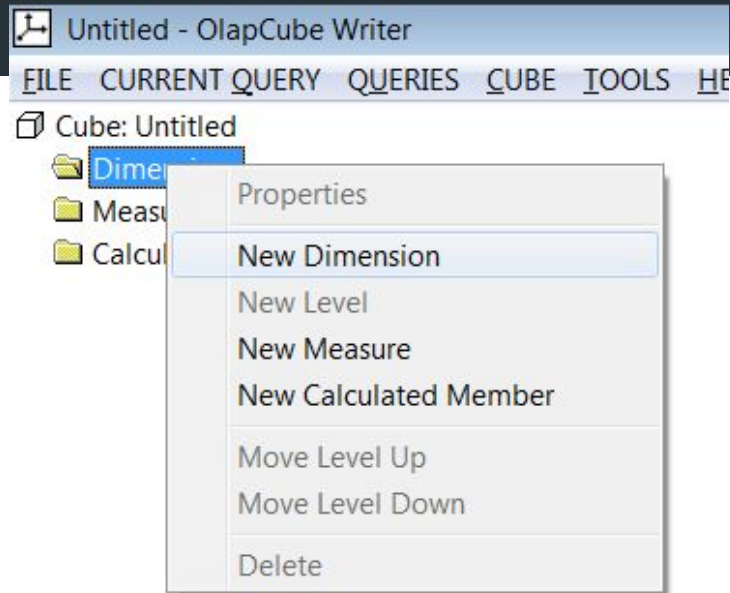
Create Hierarchical Dimensions

- Create New Dimension with field Albums.LabelName
 - Add new level Albums.Artist followed by another level Albums.AlbumName



Create Hierarchical Dimensions

Similarly create Hierarchical Date dimension as shown below



Create Relational Dimension

Add new dimension using field Employee.FirstName

Create Relational Dimension

Dimension

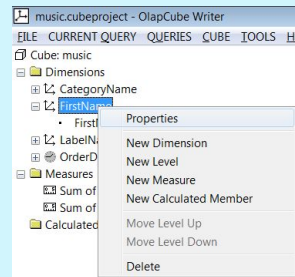
Name: Employee

☐ This is a STANDARD dimension

☐ This is a TIME dimension

☒ This is a PARENT-CHILD dimension

OK Cancel



Dimension

Name: FirstName

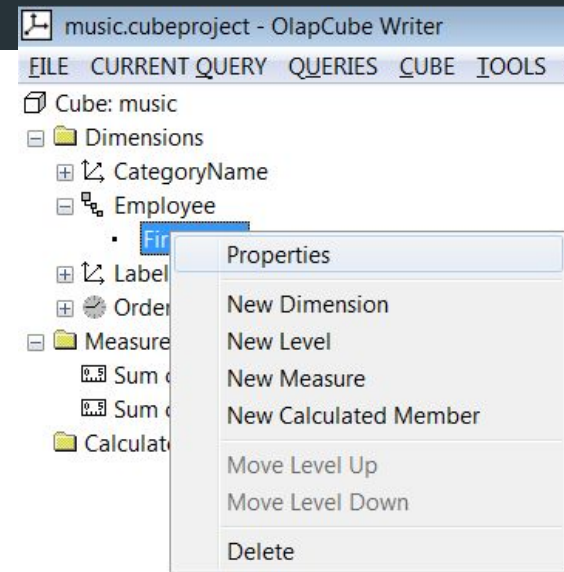
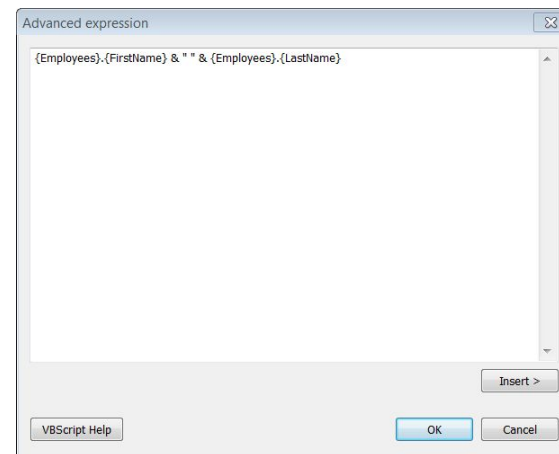
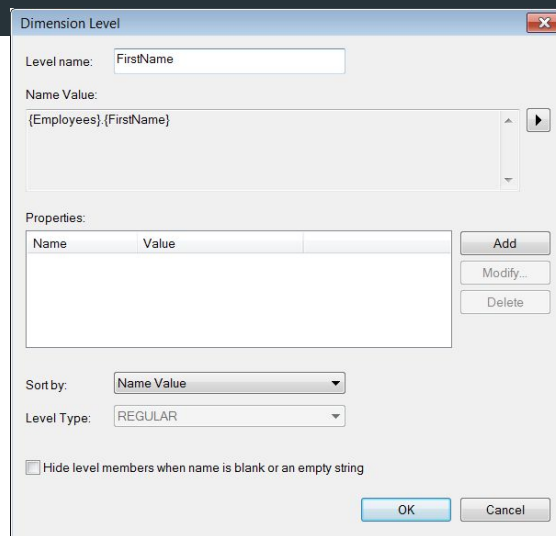
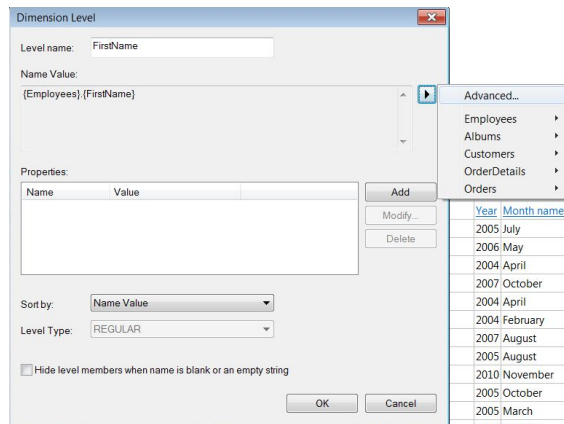
☒ This is a STANDARD dimension

☐ This is a TIME dimension

☐ This is a PARENT-CHILD dimension

OK Cancel

- Rename Dimension name selecting properties option
- Also, change type of dimension from STANDARD to PARENT-CHILD



Create Relational Dimension

Right click level item and select properties

Property

Property name:
KEY

Value:
{Employees}. {EmployeeID}

OK Cancel

Dimension Level

Level name: FirstName

Name Value:
{Employees}. {FirstName} & " " & {Employees}. {LastName}

Properties:

Name	Value
KEY	{Employees}. {EmployeeID}
PARENT	{Employees}. {ReportsTo}

Add
Modify...
Delete

Sort by: Name Value

Level Type: REGULAR

☐ Hide level members when name is blank or an empty string

OK Cancel

Dimension Level

Level name: FirstName

Name Value:
{Employees}. {FirstName} & " " & {Employees}. {LastName}

Properties:

Name	Value
KEY	{Employees}. {EmployeeID}
PARENT	{Employees}. {ReportsTo}

Add
Modify...
Delete

Sort by: Name Value

Level Type: REGULAR

☐ Hide level members when name is blank or an empty string

OK Cancel

Custom Property

Geographic Coordinates
KEY
PARENT
2006 May 05 19
2004 April 04 18
2007 October 10 42
2004 April 04 14
2004 February 02 09
2007 August 08 31
2005 August 08 35
2010 November 11 48

Property

Property name:
PARENT

Value:
{Employees}. {ReportsTo}

OK Cancel

Create Relational Dimension

Create Measures

The 'Measure' dialog box is shown with the following settings:

- Name: Sales
- Value: `{OrderDetails}.UnitPrice*{OrderDetails}.Quantity`
- Function: Sum
- ☒ Automatically include Function in Measure name
- Format: `#,##0`
- ☐ This measure is hidden (it can still be used in "Calculated members")

Buttons: OK, Cancel

The 'Measure' dialog box is shown with the following settings:

- Name: Quantity
- Value: `{OrderDetails}.Quantity`
- Function: Sum
- ☒ Automatically include Function in Measure name
- Format: `<optional - not used by Excel>`
- ☐ This measure is hidden (it can still be used in "Calculated members")

Buttons: OK, Cancel

- Create measures for
 - Sum of Order Quantity
 - Sum of Sale

Click on build cube option to
build the build from the
schema

Build Cube

Preview of Cube data build cube open cube open in Excel refresh view sql query hide data					
CategoryName	LabelName			OrderDate	
CategoryName	LabelName	Artist	AlbumName	Year	Month name
POP	Reprise	Groban, Josh	Josh Groban	2005	July
POP	Reprise	Groban, Josh	Josh Groban	2006	May
POP	Reprise	Groban, Josh	Josh Groban	2004	April
POP	Reprise	Groban, Josh	Josh Groban	2007	October
POP	Reprise	Groban, Josh	Josh Groban	2004	April

Reports



Sales Per Category

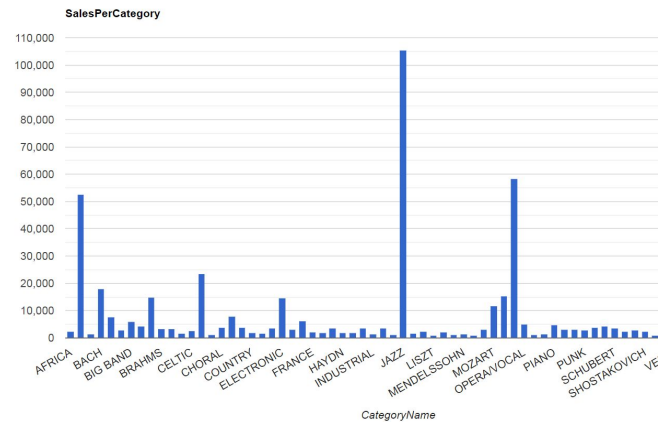
Third Dimension:

Select a dimension for series (optional):

- ☐ Employee
- ☐ LabelName
- ☐ OrderDate

Stacked Chart:

< Back Finish Cancel



First Dimension

Select a dimension for the horizontal axis:

- ☒ CategoryName
- ☐ Employee
- ☐ LabelName
- ☐ OrderDate

< Back Next > Cancel

Second Dimension

Select a dimension for page filters (optional):

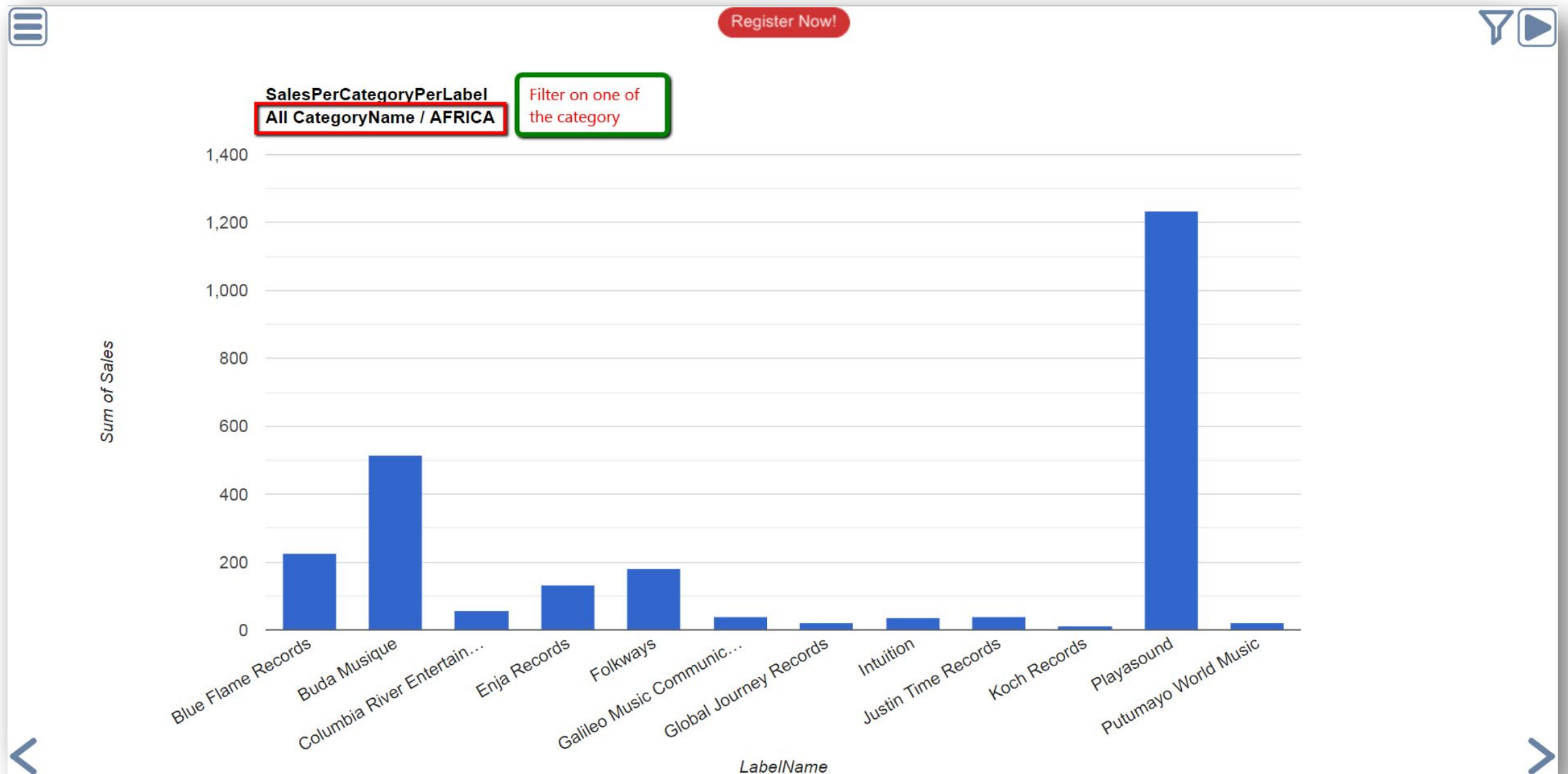
- ☐ Employee
- ☐ LabelName
- ☐ OrderDate

☐ Include the All Member

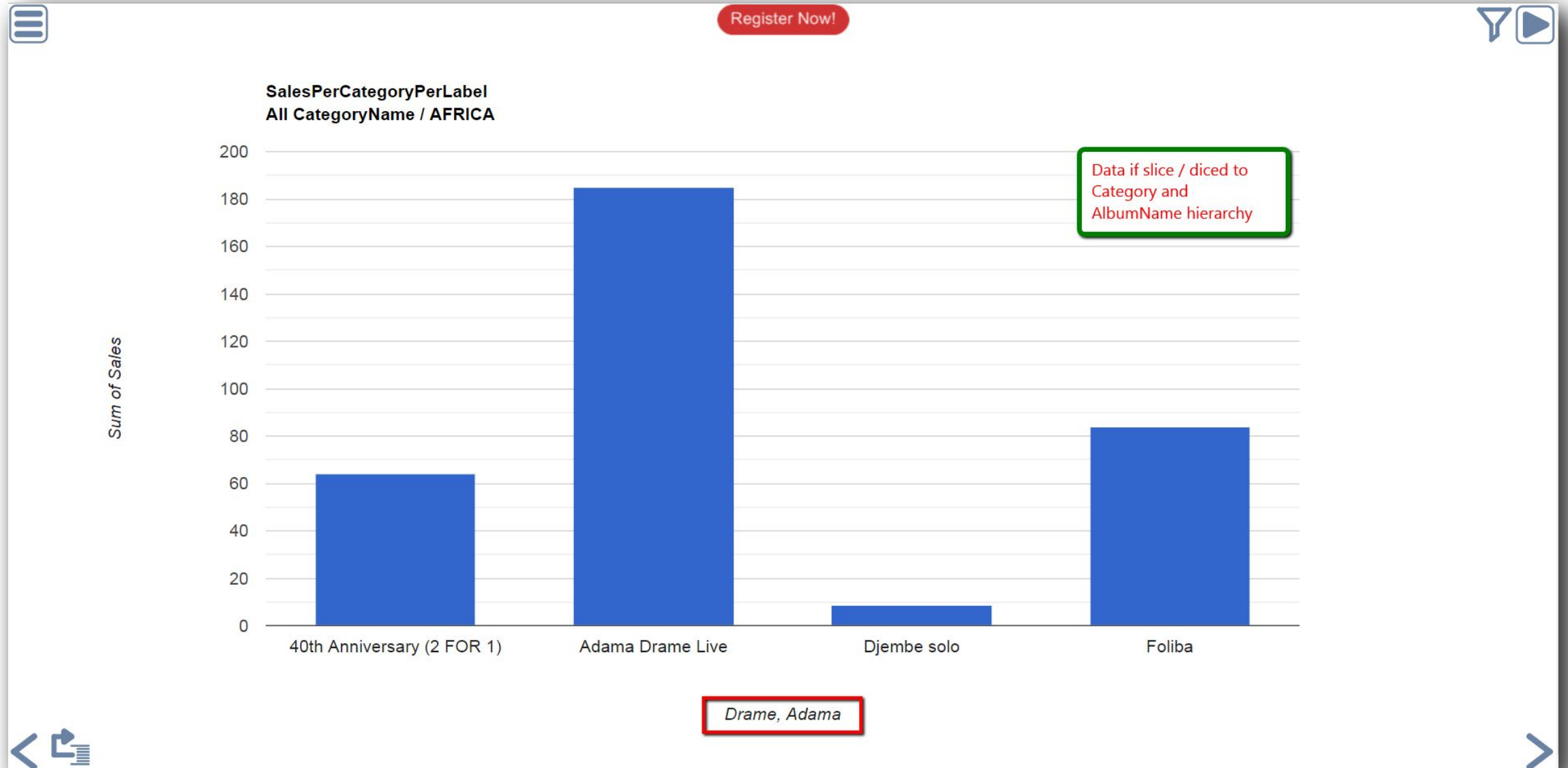
< Back Next > Cancel

Add New Bar Chart to show total sales per category

Sales Per Category Per LabelName



Slice Data on Hierarchical Dimension



Slice Data on Hierarchical Date Dimension



Register Now!

