



Power BI RLS & OLS Security Patterns

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DATA SATURDAY #20
Pordenone, Feb 26th, 2022



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Your sites

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- Slideshare: <https://www.slideshare.net/supergimi/presentations>
- GitHub: <https://github.com/lvercellati>



Agenda

- Row Level Security Concepts
- Static Row Level Security
- Dynamic Row Level Security
- Dynamic Row Level Security & Hierarchies
- Object Level Security

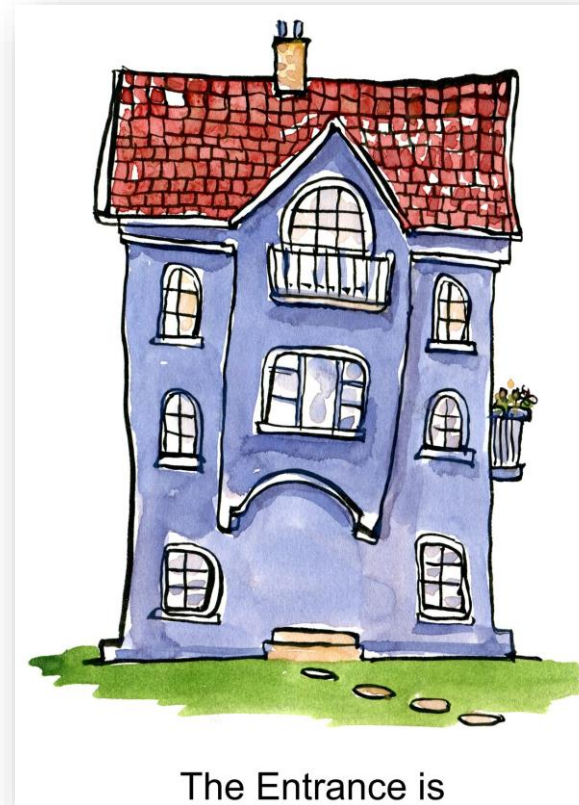
Row Level Security concepts

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The Basics

Don't Make Security
an Afterthought



...

The Basics

Plan Out Security



The Basics

Power BI report data security is based on **ROLES** and being a **MEMBER** of a Role



The Basics

Roles control **WHO** has access to the Power BI Dataset along with **WHAT DATA** they have access to within the Dataset



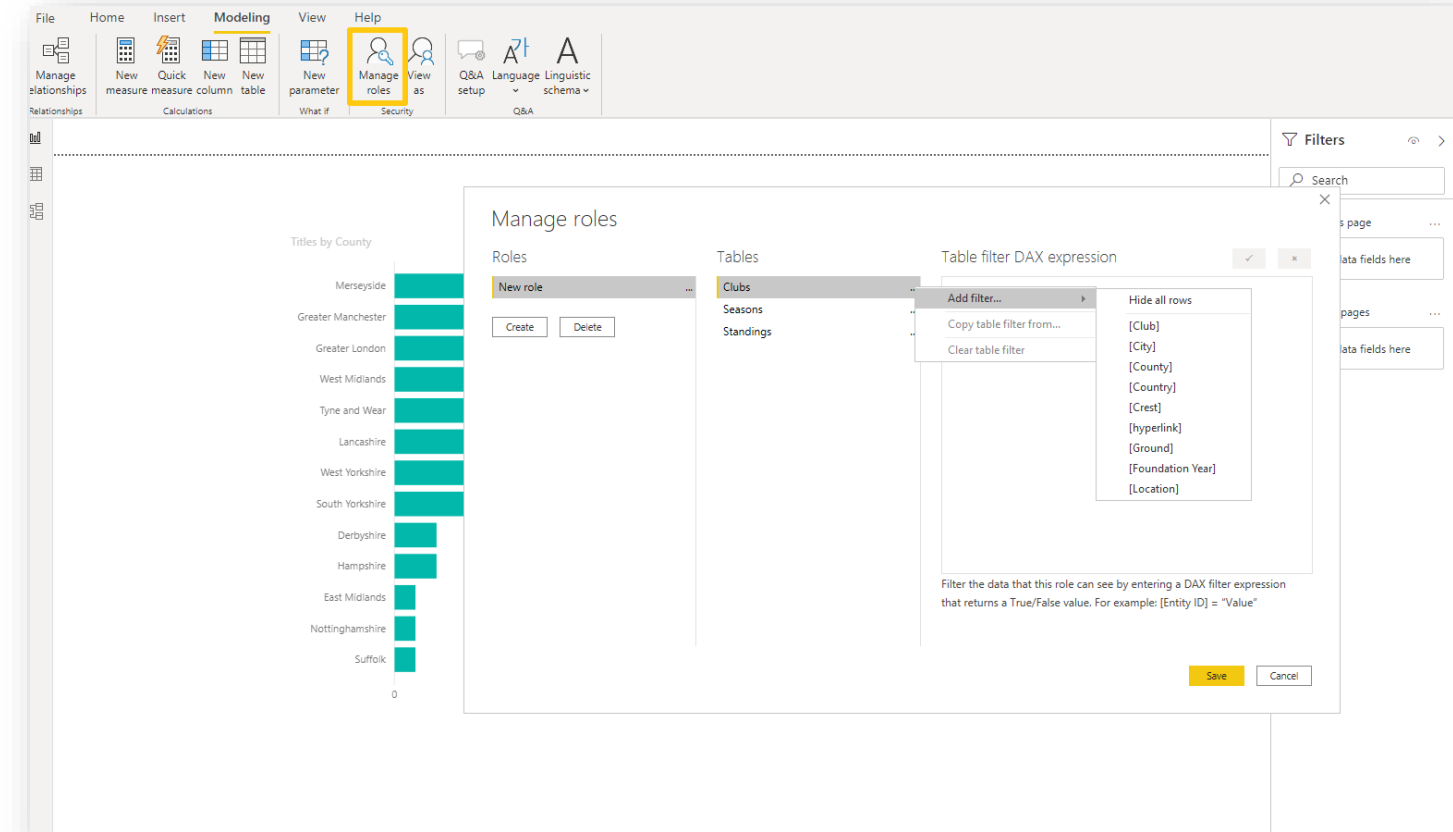
The Basics

Relies on
Azure Active Directory for
user IDENTIFICATION,
AUTHENTICATION and
AUTHORIZATION
to a Power BI Dataset



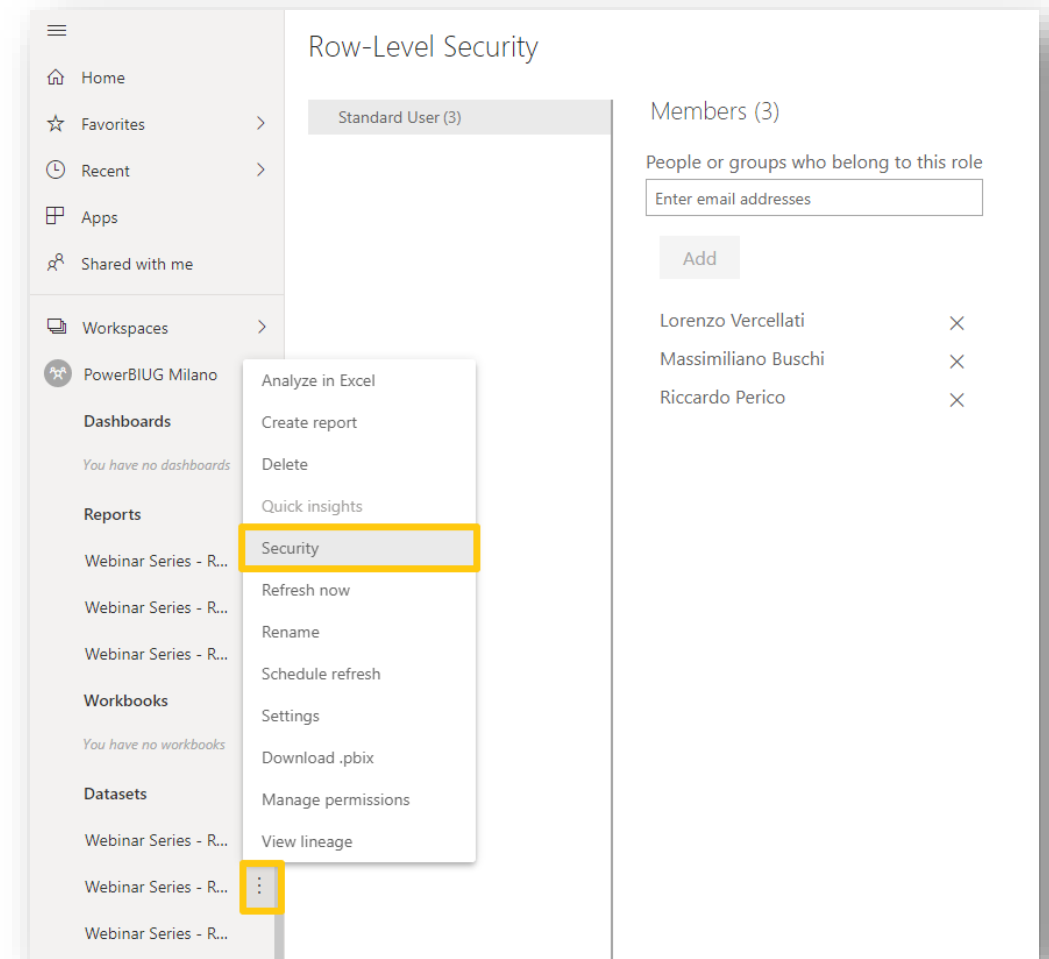
Roles

Roles are created in
Power BI Desktop
Client



Roles

Role Members are
assigned in
Power BI Service



Test Security

Check Before
Sharing

POWER BI DESKTOP

POWER BI SERVICE

Titles by County

County	Titles
Merseyside	10
Greater Manchester	9
Greater London	8
West Midlands	7
Tyne and Wear	6
Lancashire	5
West Yorkshire	4
South Yorkshire	3
Derbyshire	2
Hampshire	1
East Midlands	1
Nottinghamshire	1

View as roles

- ☐ None
- ☒ Row-Level Security

Greater London Role (1)

Greater Manchester Role (2)

Merseyside Role (2)

Members (1)

People or groups who belong to this role

Test as role

Add

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Choose Your Own Security Style

STATIC



DYNAMIC

Static Row Level Security

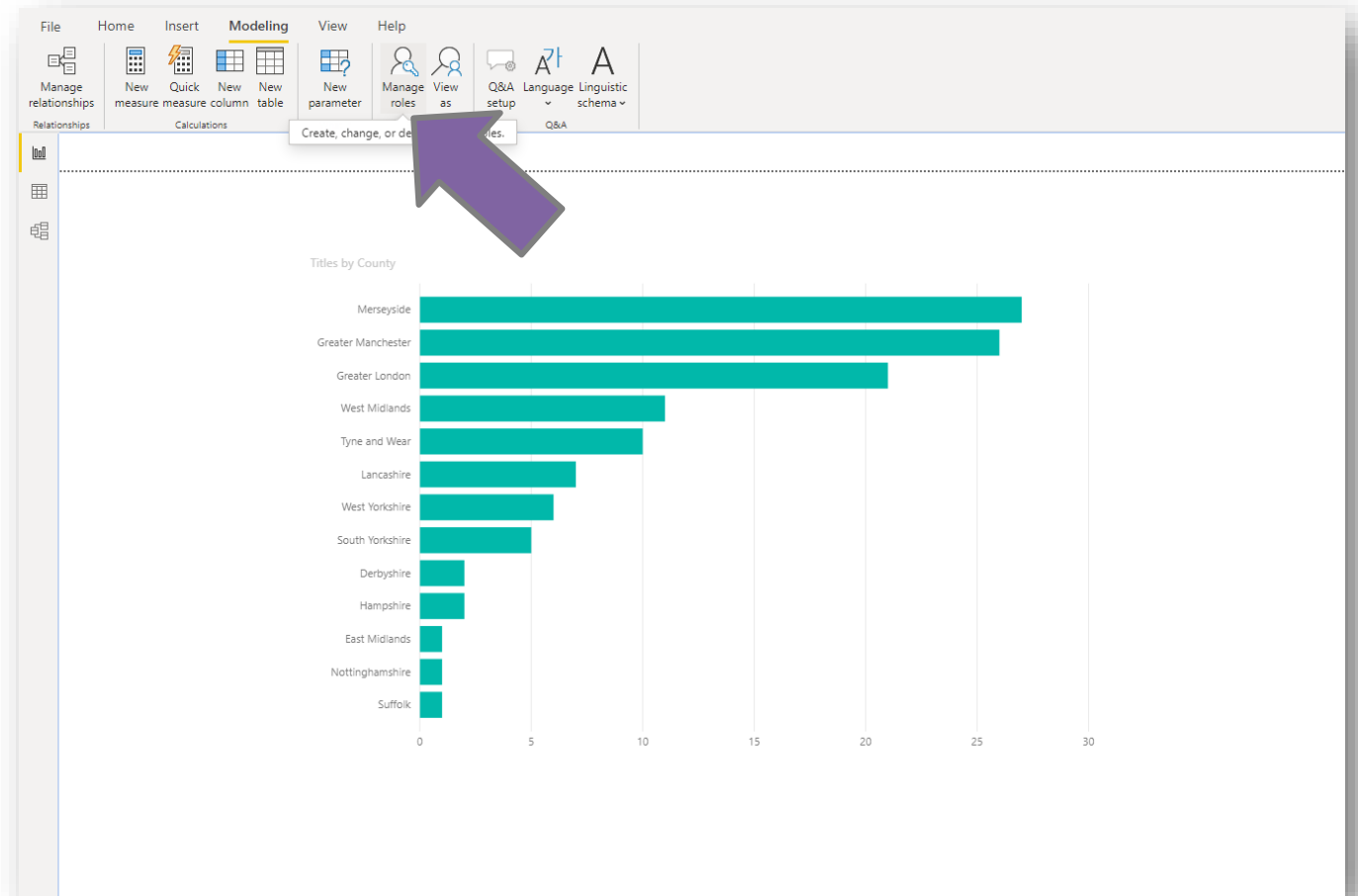
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IT moves your business

Real Comm
Easy for real

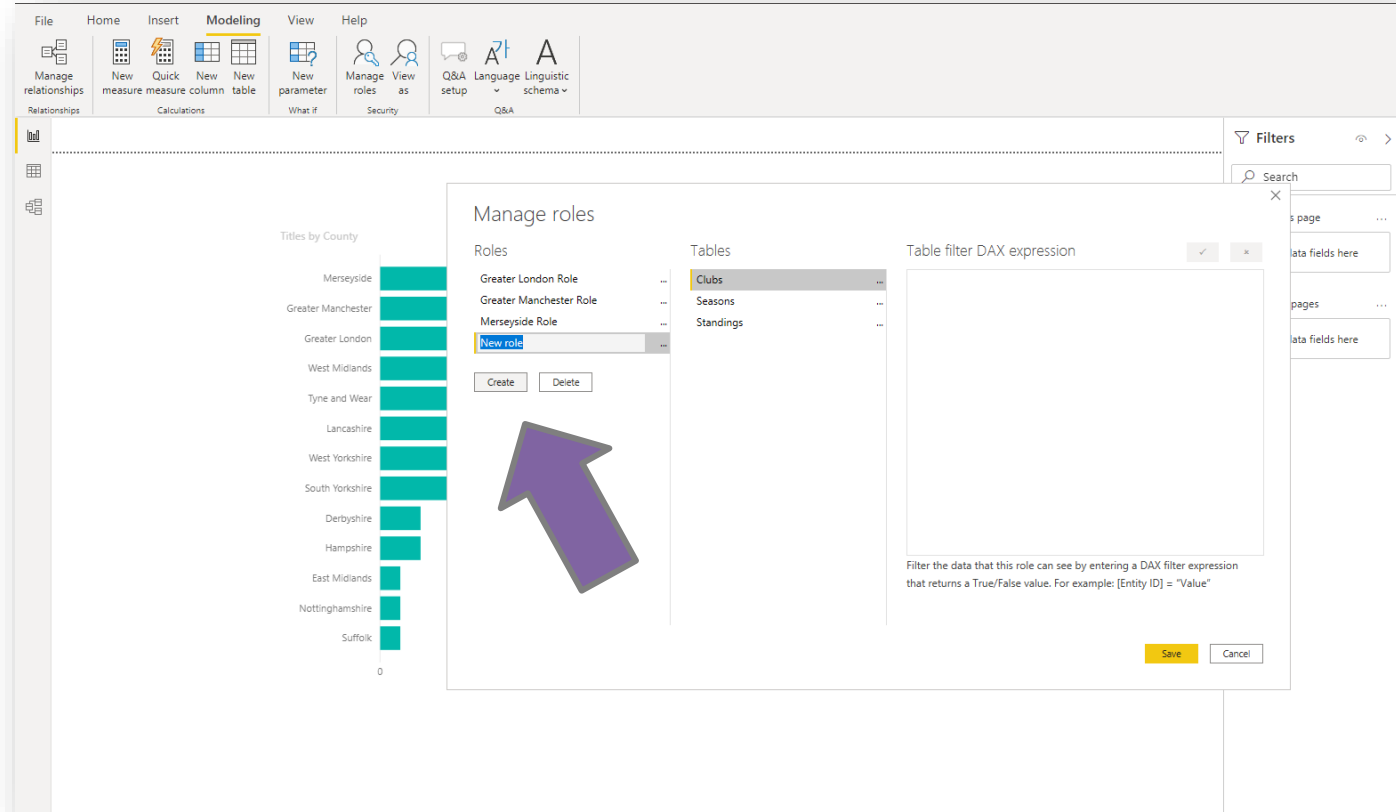
Static RLS

Click on
Manage roles



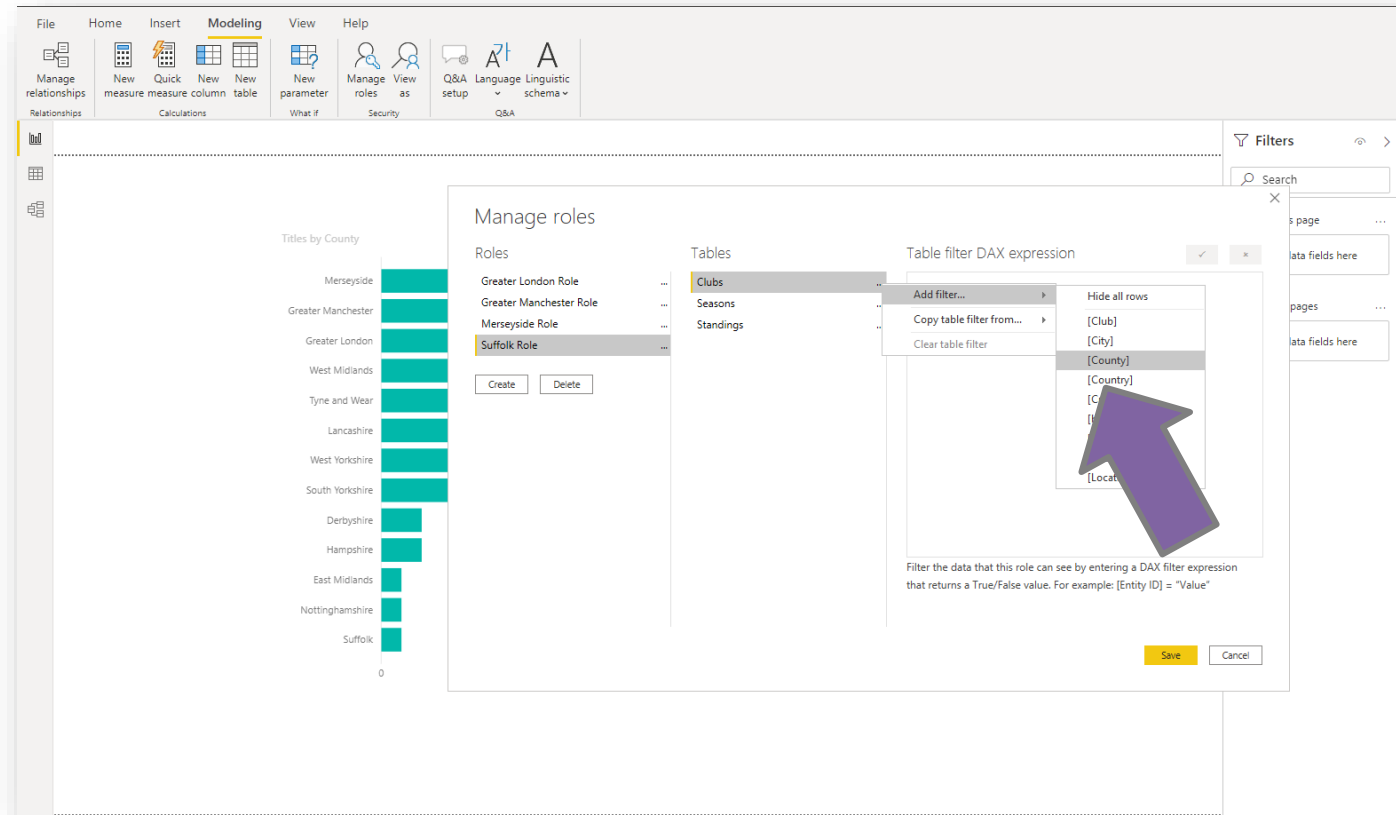
Static RLS

Click on
Create Button



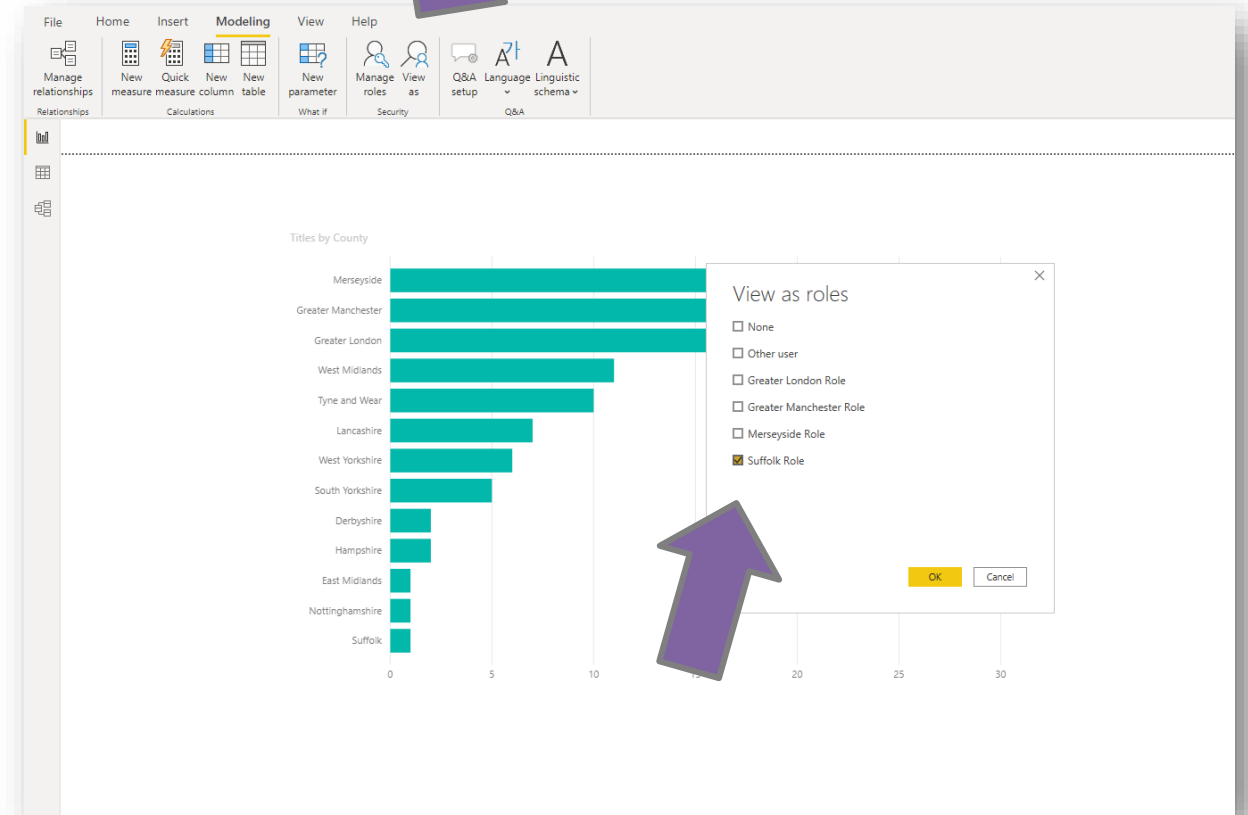
Static RLS

Select tables and columns you want apply the rules on



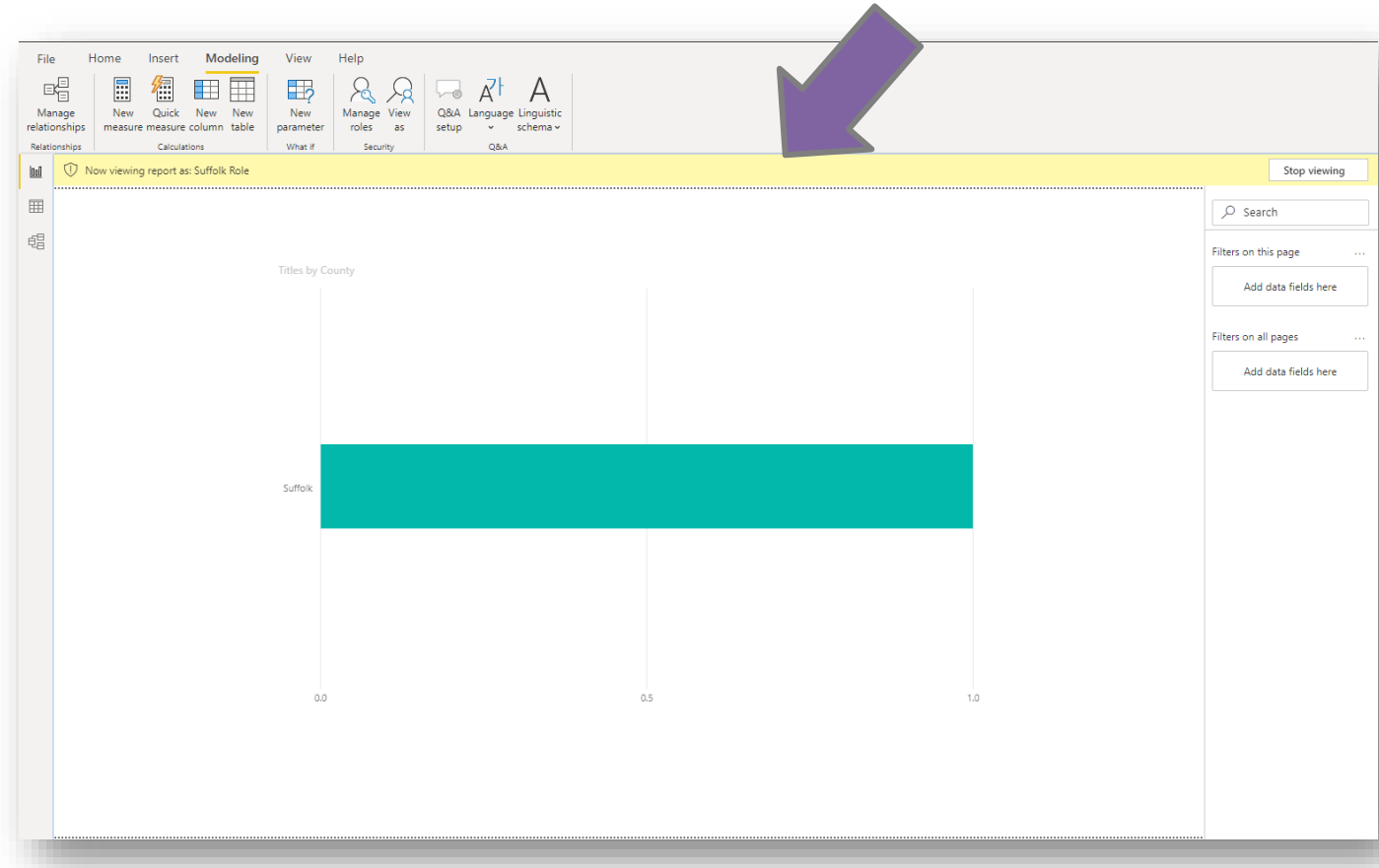
Static RLS

Select the role you want test



Static RLS

Test your rule



Demo

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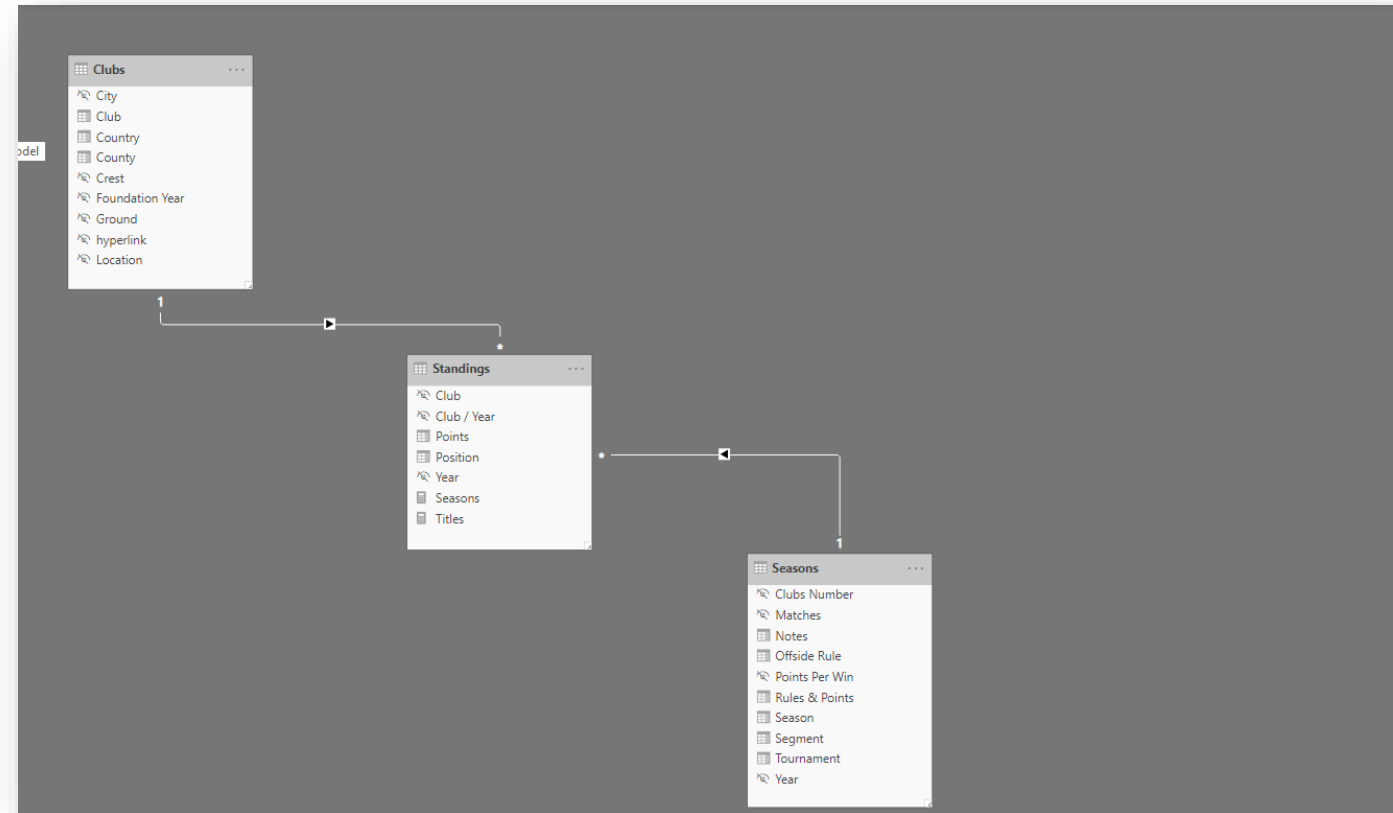
Dynamic Row Level Security

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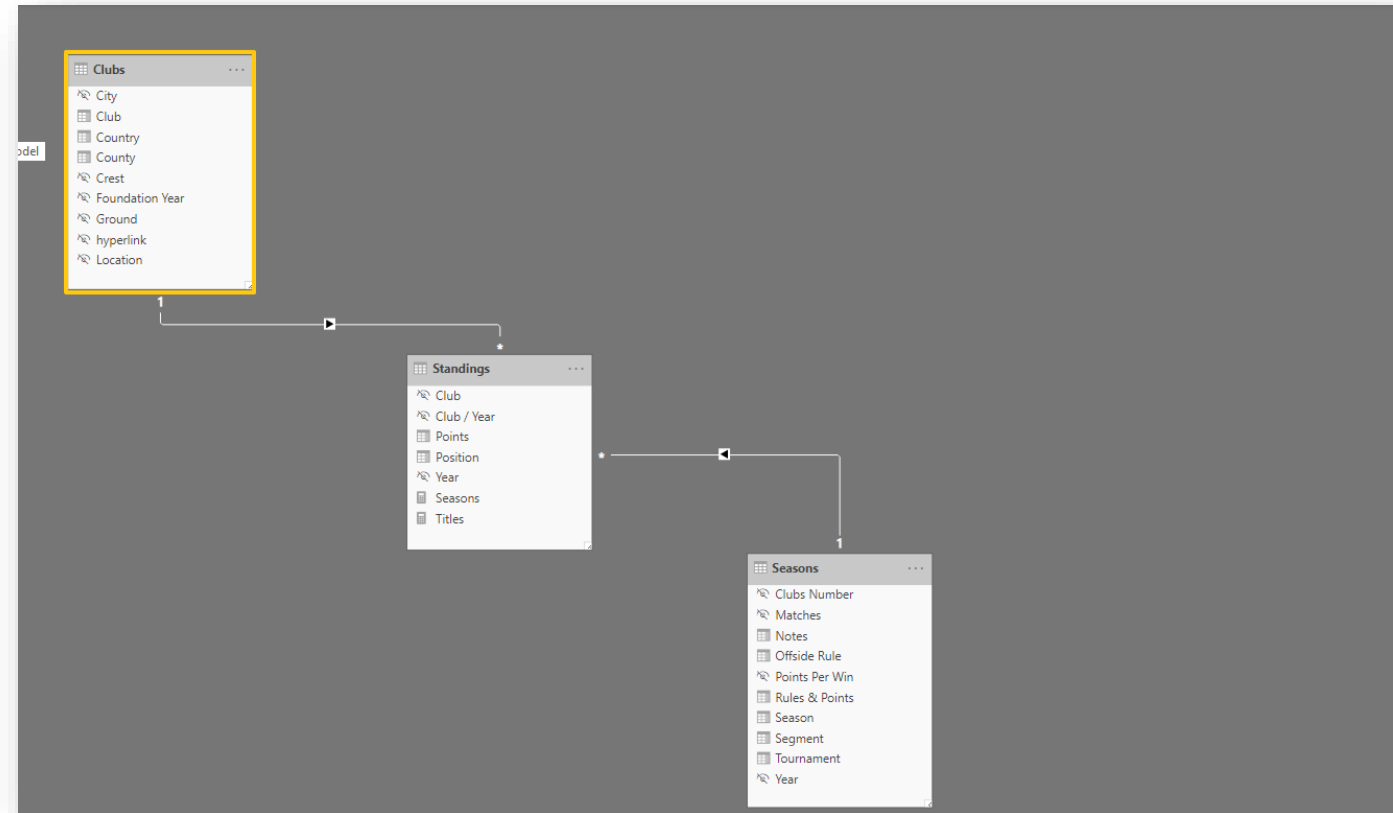
Dynamic RLS

We have to
RETHINK our
MODEL



Dynamic RLS

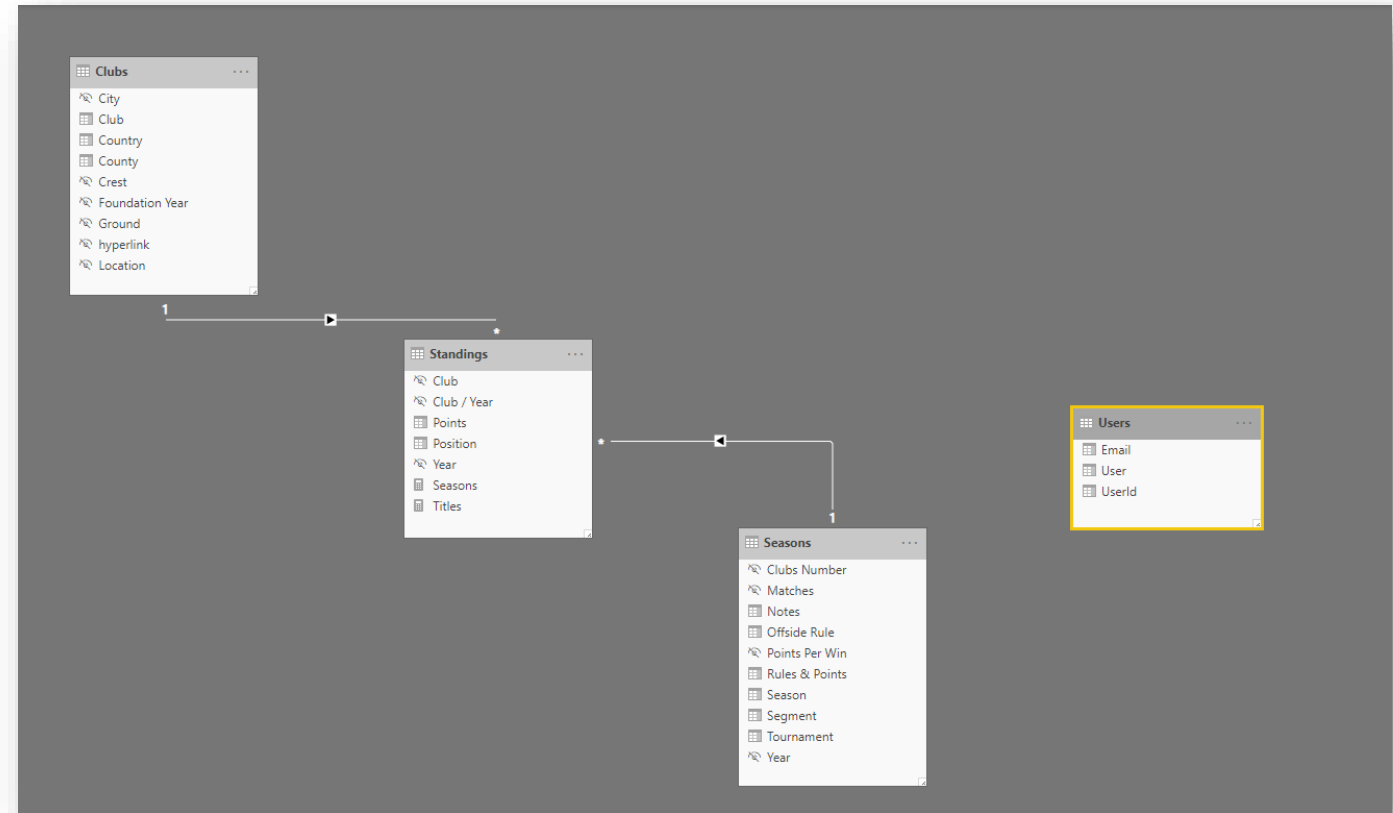
We need a system to
filter our data
DYNAMICALLY



Dynamic RLS

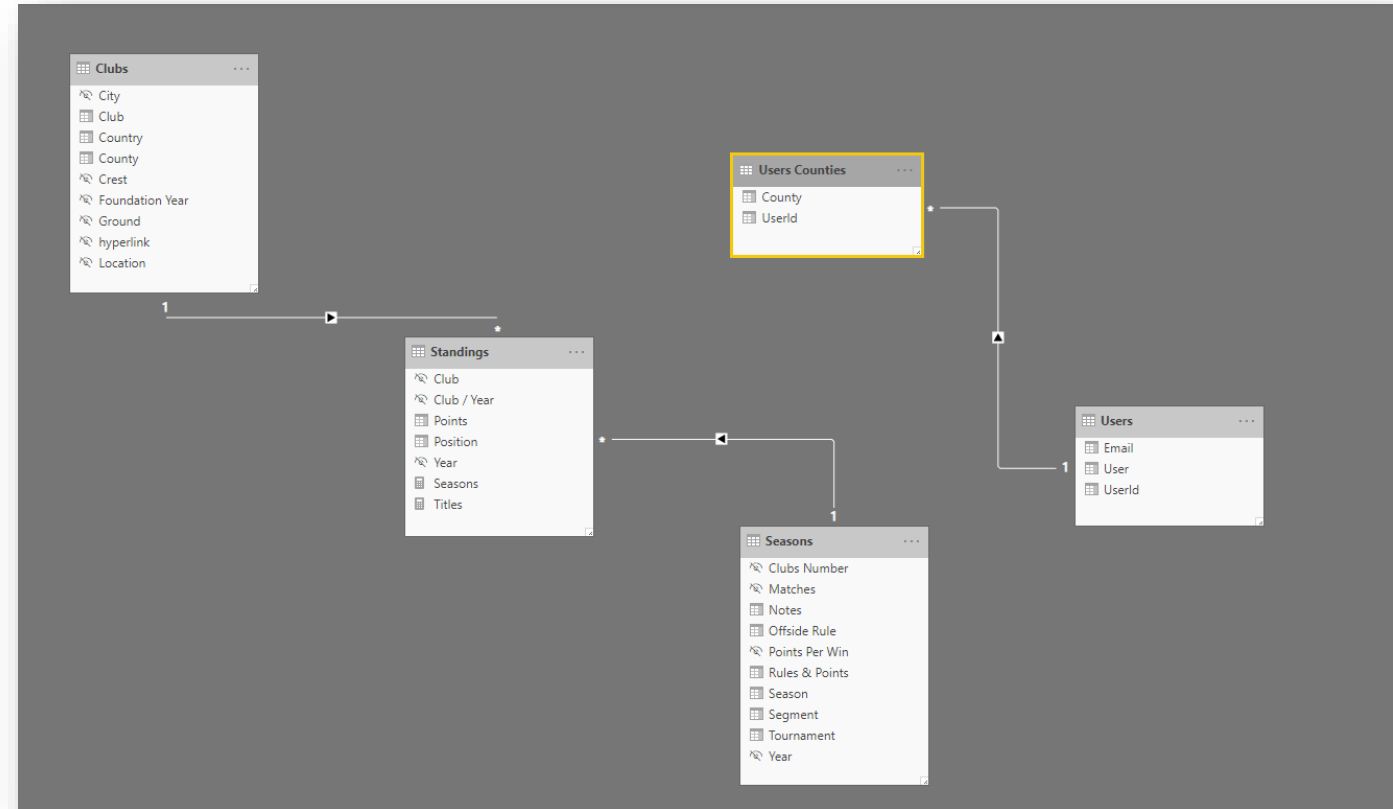
Users Table with the
Accounts used to
access to
Power BI Service

joe@contoso.com



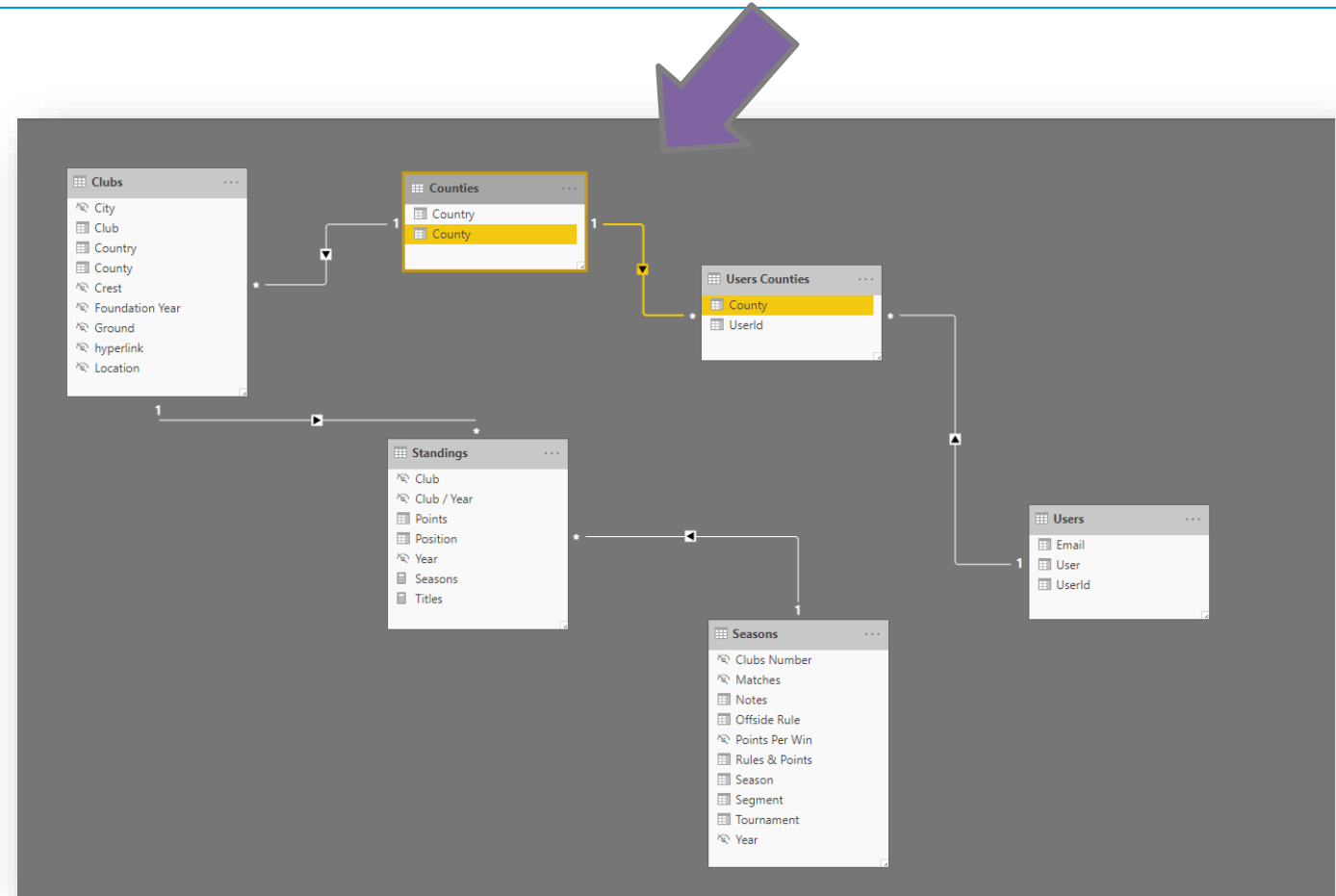
Dynamic RLS

A **BRIDGE TABLE** to
link users and profiles



Dynamic RLS

A profile table to
manage correctly the
MANY-TO-MANY
relationship

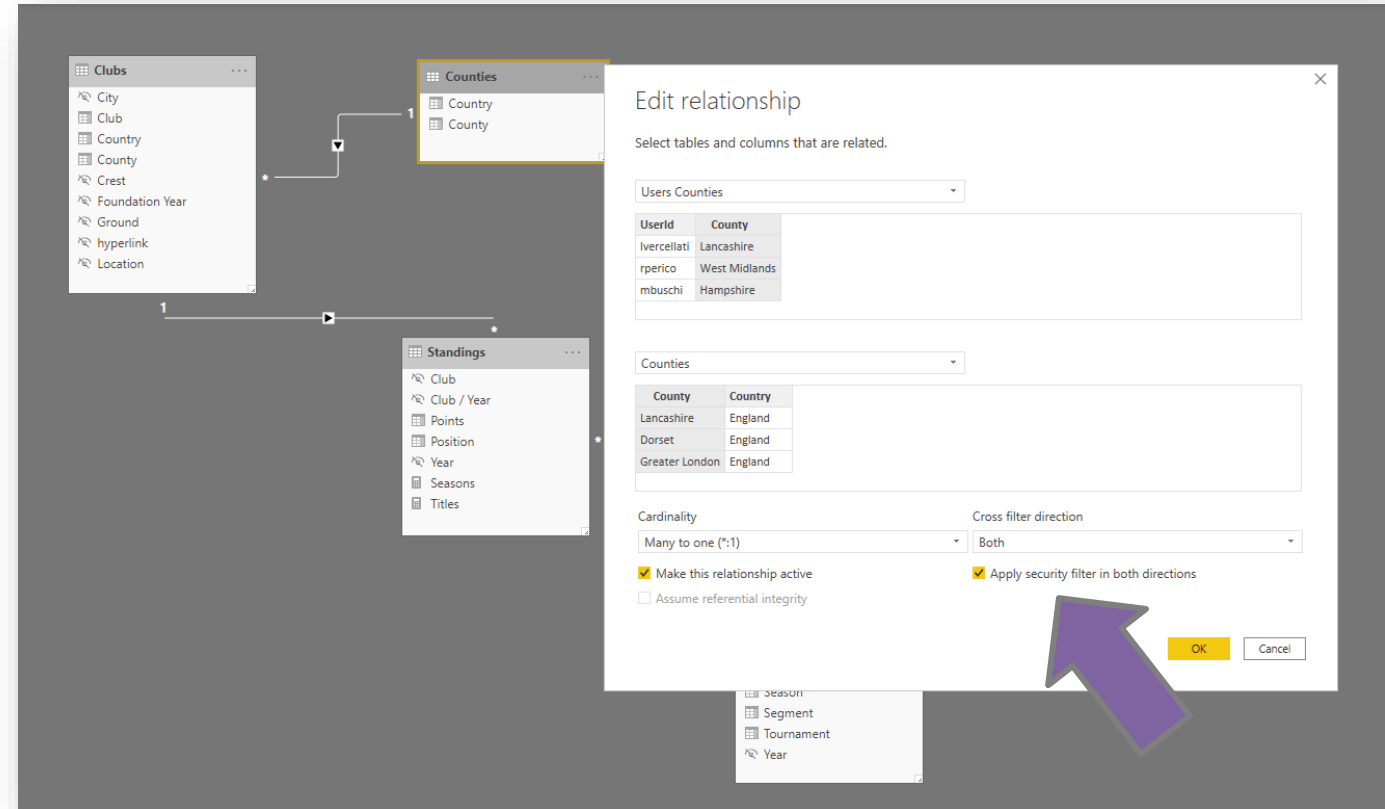


Dynamic RLS

BIDIRECTIONAL
crossfilter

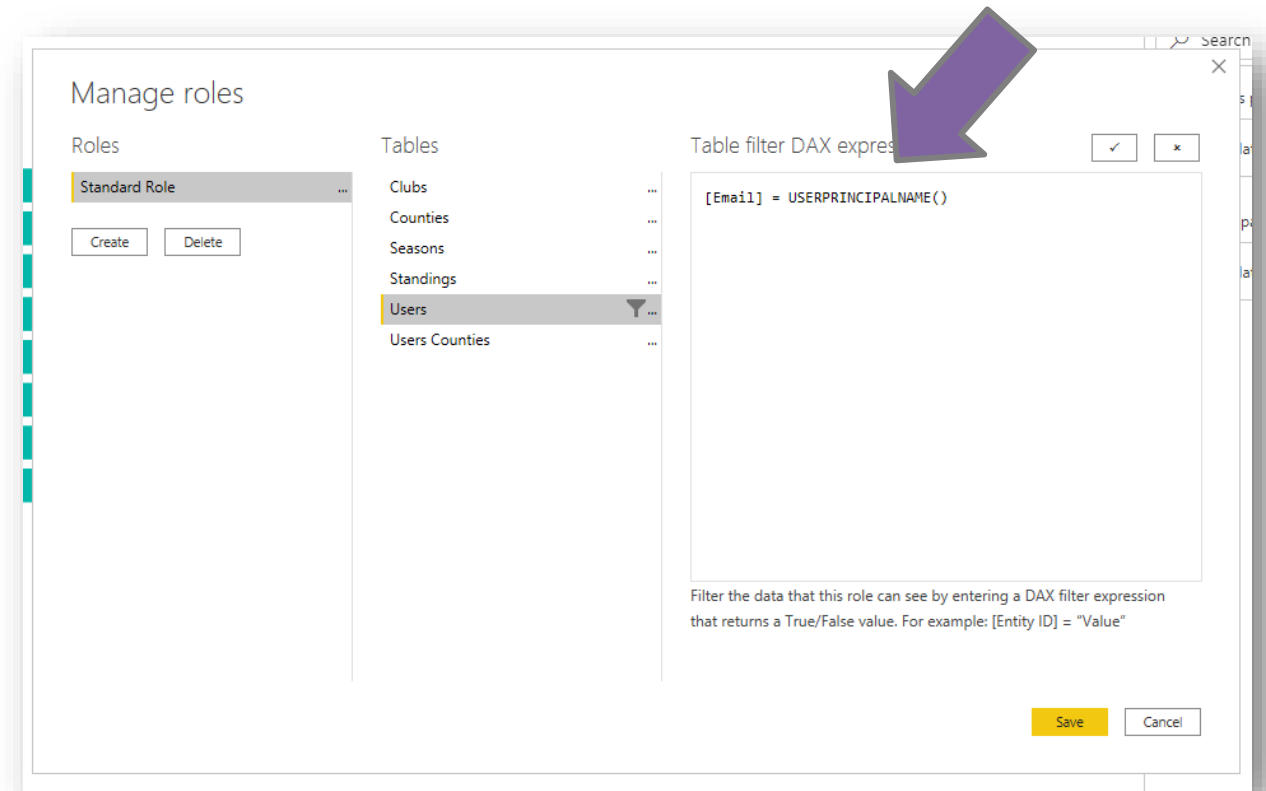
+

Apply security filter
in both direction
checkbox



Dynamic RLS

USERPRINCIPALNAME()
is the key



USERPRINCIPALNAME()

It's a DAX Function that returns the name of the user as their email address, aka user@domain.com.

Object Level Security

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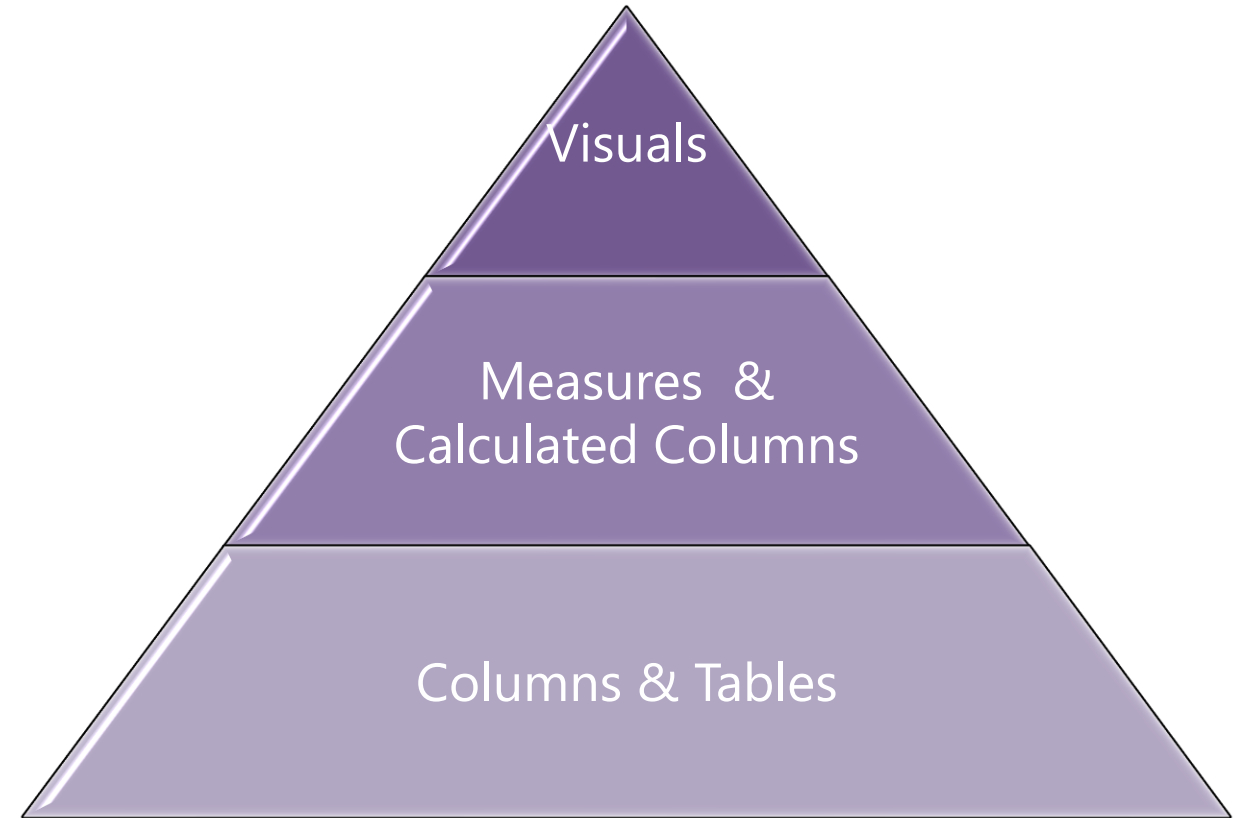
How OLS works

OBJECT LEVEL SECURITY

works on

COLUMNS and TABLES

All calculated objects related to hidden object are affected too.



How OLS works

You have to use
EXTERNAL TOOLS



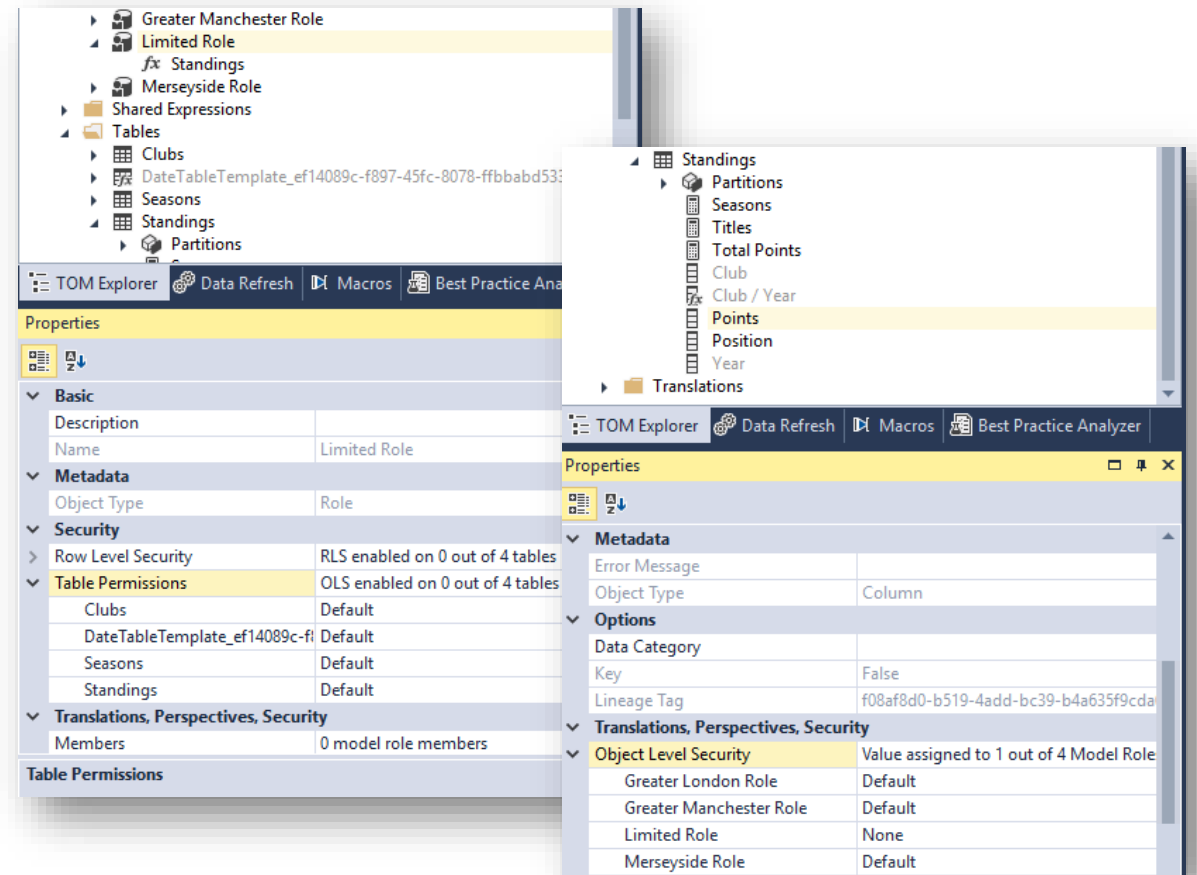
Tabular Editor



3

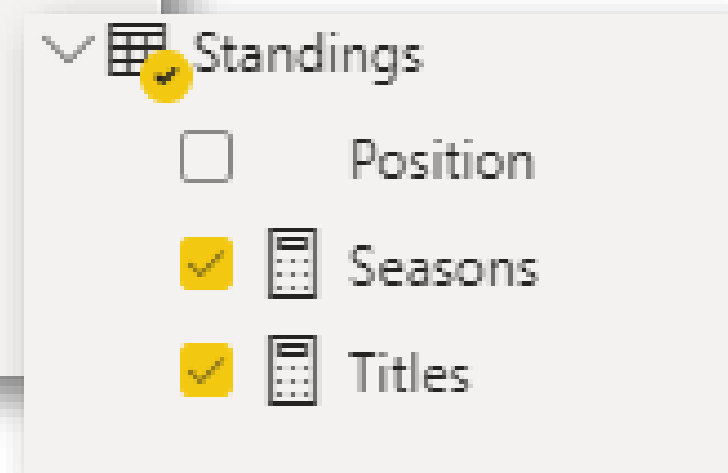
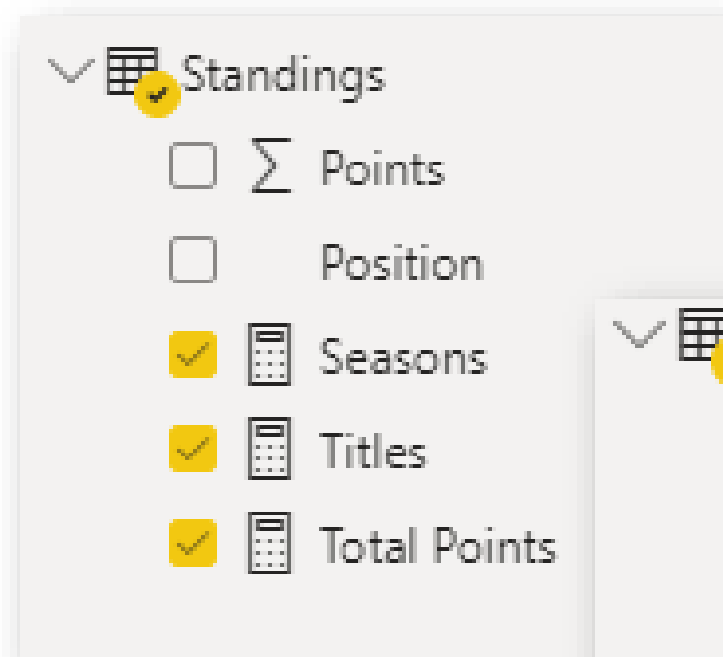
How OLS works

You have to use
EXTERNAL TOOLS



How OLS works

No more
hidden objects



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Bibliography & Links

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- <https://www.kasperonbi.com/power-bi-desktop-dynamic-security-cheat-sheet/>

Q&A

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Thanks!

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