Sri Lanka Institute of Information Technology

Data Warehousing & Business Intelligence

Assignment 2

Gamage M.G.U.D.

IT19169736

Year 3 Semester 1

Group 05 (Weekday)

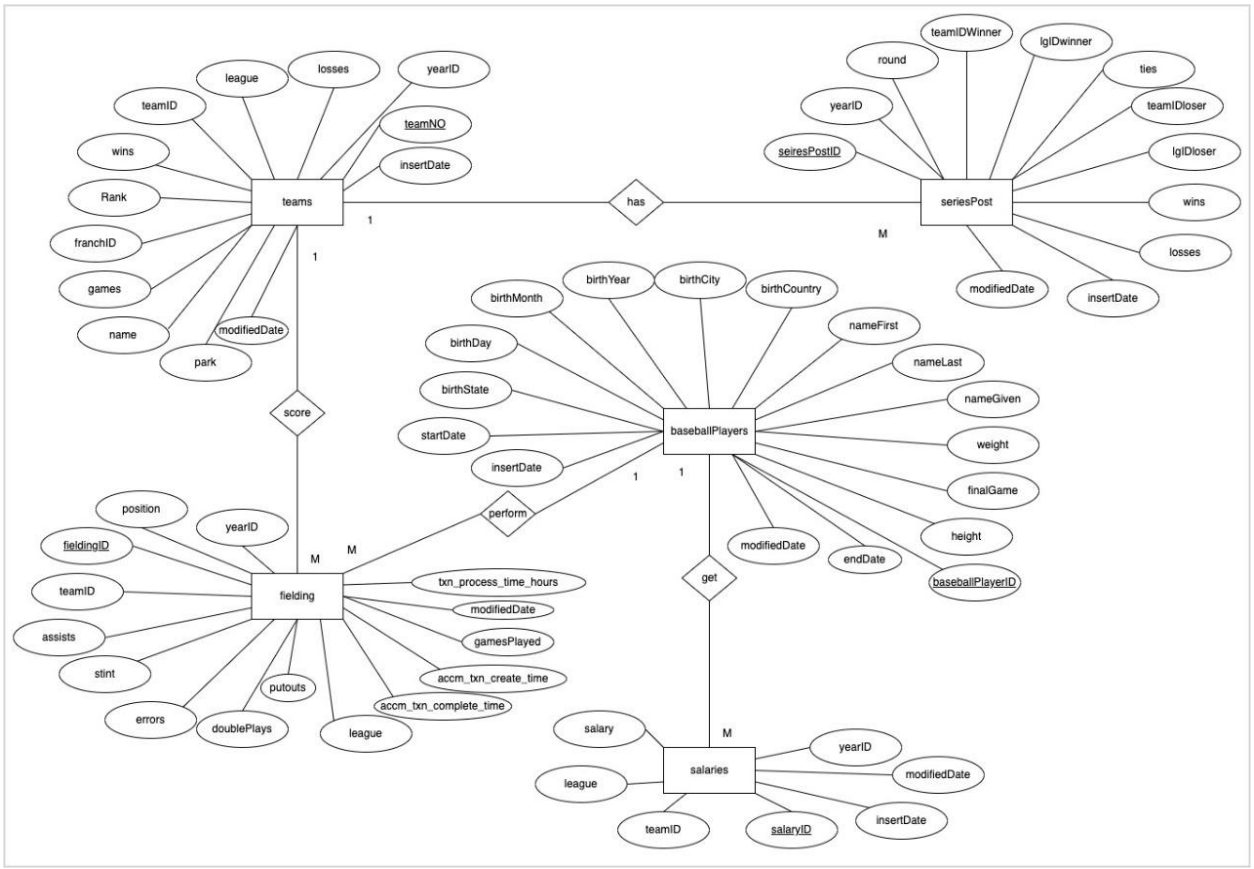
Step 1: Data source for the assignment 2

For the Data Warehouse of the Baseball Logs dataset, DimBaseballPlayers, DimSalaries, DimSeriesPost and DimTeams are implemented as the dimensions with DimDate as the Date dimension. FactFielding is implemented as the fact table. DimBaseballPlayers is implemented as the slowly changing dimension. DimBaseballPlayers contains details of Baseball players. DimSalaries contains salary details and has a foreign key reference to DimBaseballPlayers. DimSeriesPost contains details about Baseball series and has two foreign key references to DimTeams. DimTeams contains details about Baseball teams. DimDate contains date and date key. FactFielding contains fielding details and has foreign key reference to DimTeams, DimBaseballPlayers, DimDate.

InsertDate and ModifiedDate have been added above tables.

DimBaseballPlayers has new two attributes as StartDate and EndDate.

Additionally, FactFielding table has accm_txn_create_time, accm_txn_complete_time and txn_process_time_hours as new attributes.



Step 2: SSAS Cube implementation

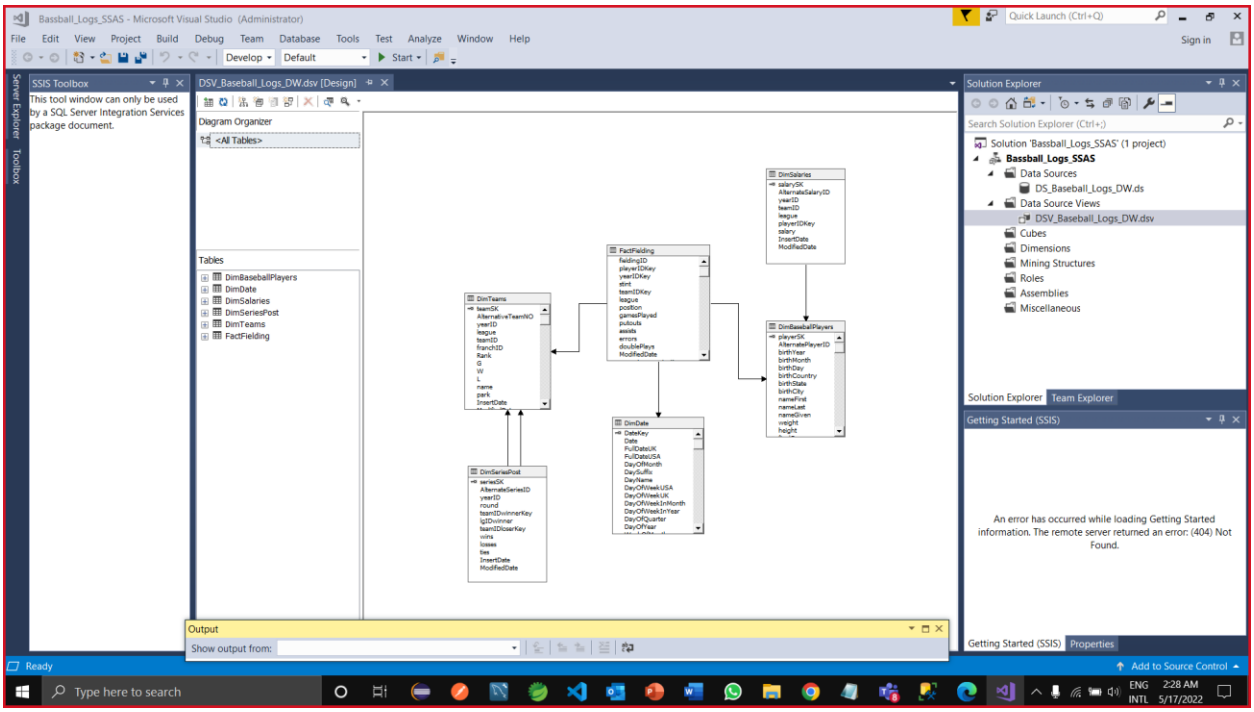
Hierarchy is Birth Country > Birth State > Birth City in DimBaseballPlayer dimension.

Creating a data source

The cube is extracting data from this source. In this case, the name of the data source is DS_Baseball_Logs_DW.

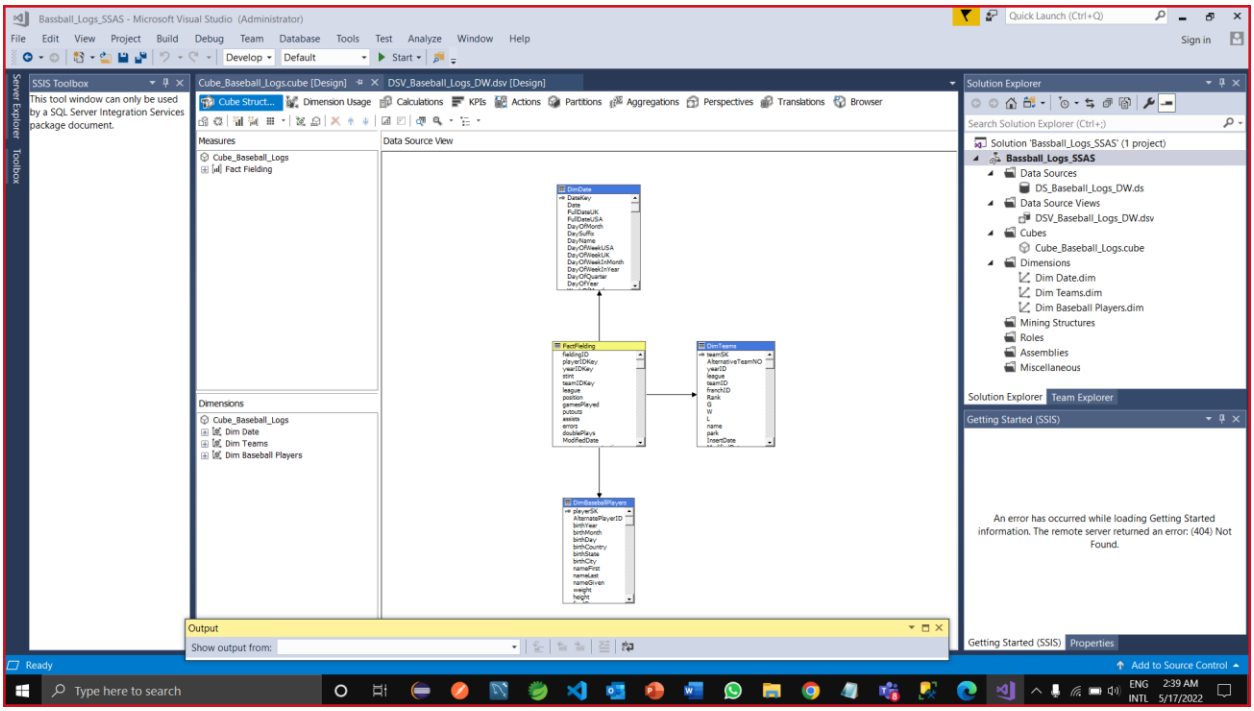
Creating data source view

The data source view is DSV_Baseball_Logs_DW in this project. The table links are created as follows.



Creating and deploying the cube

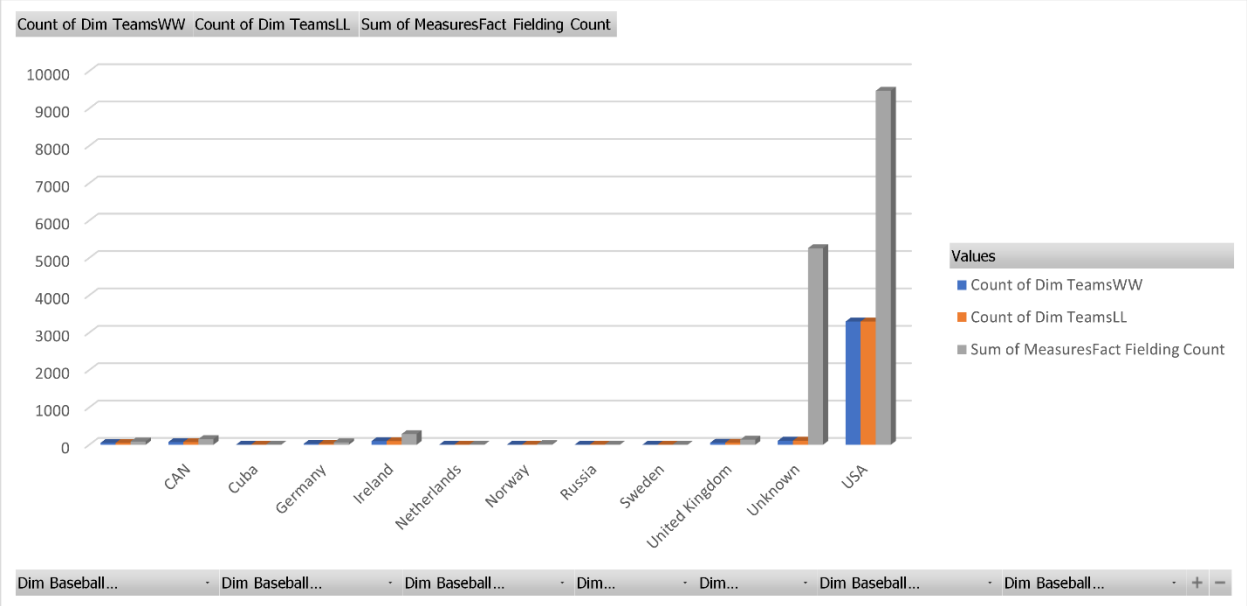
After creating the cube, the snowflake schema can be seen as a cube named Cube_Baseball_Logs



Step 3: Demonstration of OLAP operations

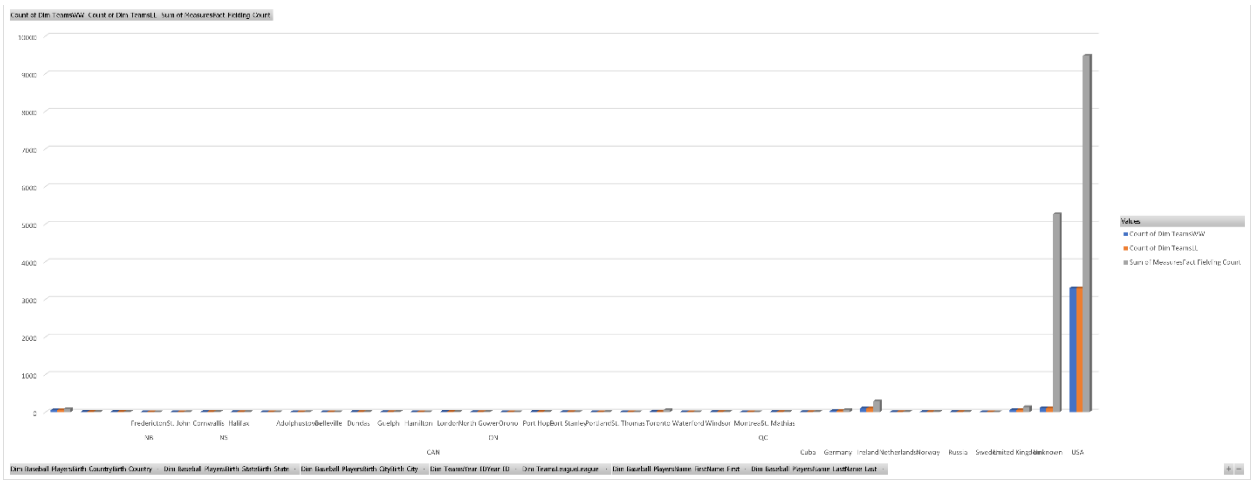
➢ Roll-up – According to the Birth Country

Row Labels	Count of Dim TeamsWW	Count of Dim TeamsLL	Sum of MeasuresFact Fielding Count
⊞	50	50	87
⊞ CAN	72	72	152
⊞ Cuba	2	2	7
⊞ Germany	27	27	64
⊞ Ireland	97	97	287
⊞ Netherlands	2	2	6
⊞ Norway	3	3	16
⊞ Russia	3	3	7
⊞ Sweden	1	1	1
⊞ United Kingdom	54	54	138
⊞ Unknown	110	110	5261
⊞ USA	3299	3299	9473
Grand Total	3720	3720	15499



➢ Drill-Down - according to the hierarchy

Row Labels	Count of Dim TeamsWW	Count of Dim TeamsLL	Sum of MeasuresFact Fielding Count
⊟			
⊟			
⊞	50	50	87
⊟CAN			
⊟			
⊞	5	5	15
⊟NB			
⊞	5	5	7
⊞Fredericton	1	1	1
⊞St. John	1	1	2
⊟NS			
⊞Cornwallis	3	3	7
⊞Halifax	2	2	3
⊟ON			
⊞	1	1	1
⊞Adolphustown	1	1	2
⊞Belleville	1	1	1
⊞Dundas	3	3	4
⊞Guelph	2	2	8
⊞Hamilton	1	1	1
⊞London	5	5	10
⊞North Gower	2	2	6
⊞Orono	1	1	1
⊞Port Hope	6	6	11
⊞Port Stanley	2	2	2
⊞Portland	1	1	3
⊞St. Thomas	1	1	1

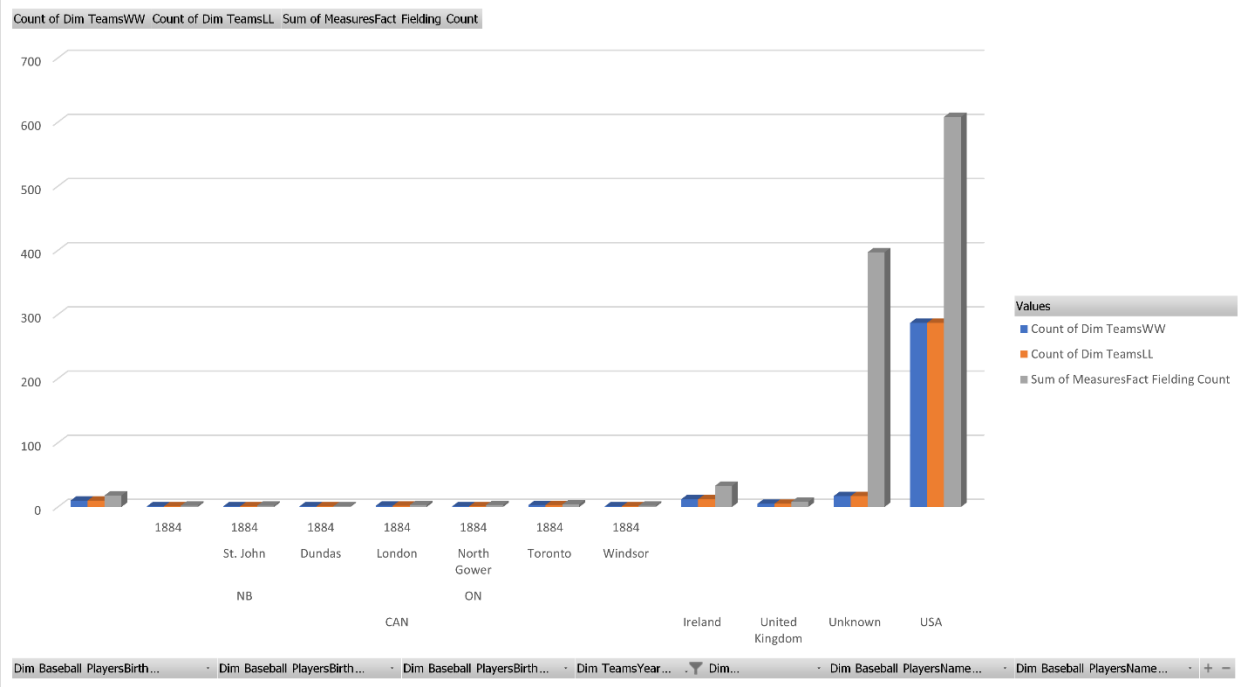


➢ Slice – According to the year

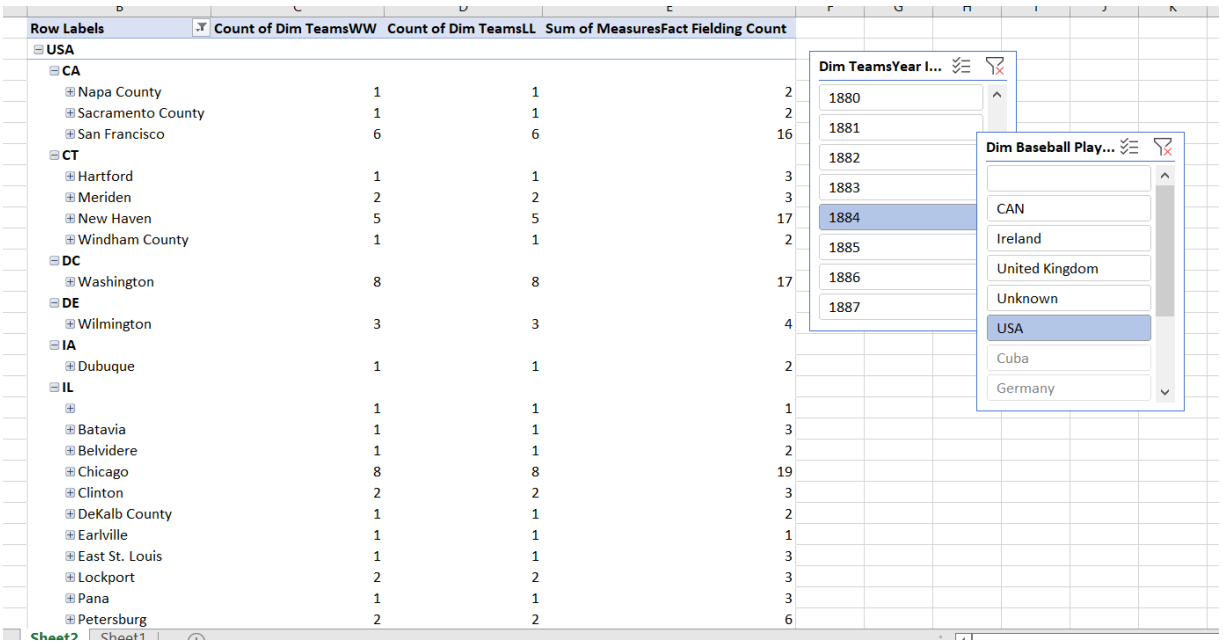
Row Labels	Count of Dim TeamsWW	Count of Dim TeamsLL	Sum of MeasuresFact Fielding Count
⊞	10	10	18
⊟ CAN			
⊟			
⊟			
⊞ 1884	1	1	2
⊟ NB			
⊟ St. John			
⊞ 1884	1	1	2
⊟ ON			
⊟ Dundas			
⊞ 1884	1	1	1
⊟ London			
⊞ 1884	2	2	3
⊟ North Gower			
⊞ 1884	1	1	3
⊟ Toronto			
⊞ 1884	3	3	4
⊟ Windsor			
⊞ 1884	1	1	2
⊞ Ireland	12	12	33
⊞ United Kingdom	5	5	8
⊞ Unknown	17	17	397
⊞ USA	287	287	608
Grand Total	341	341	1081

Dim TeamsYear I...

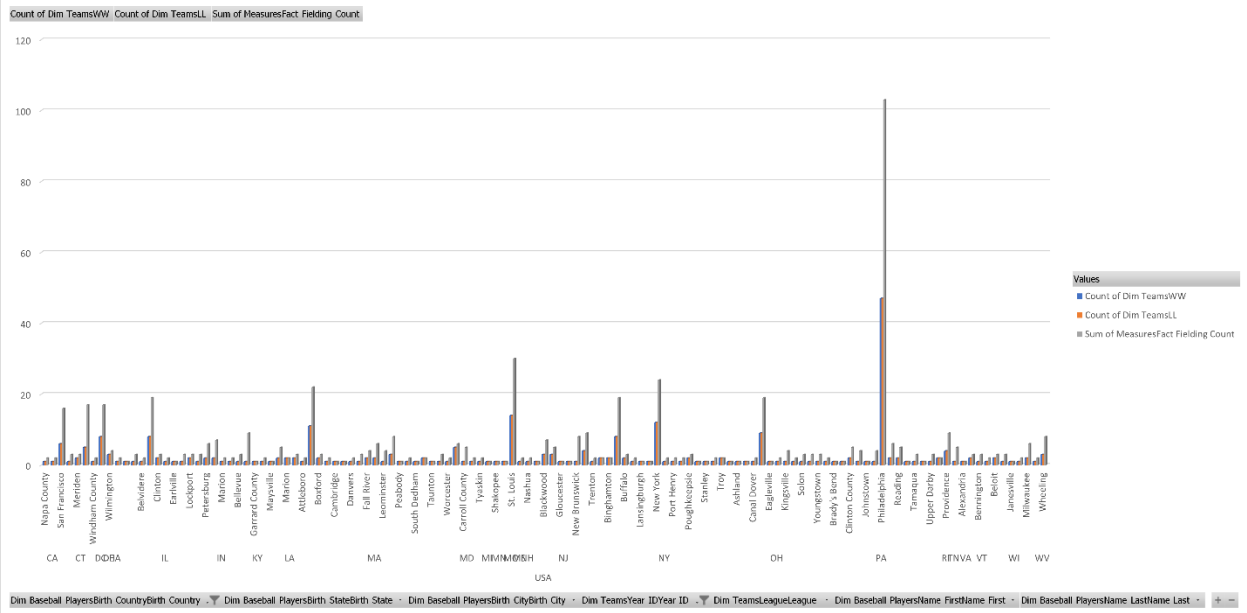
1880
1881
1882
1883
1884
1885
1886
1887



➢ Dice – according to the year and country

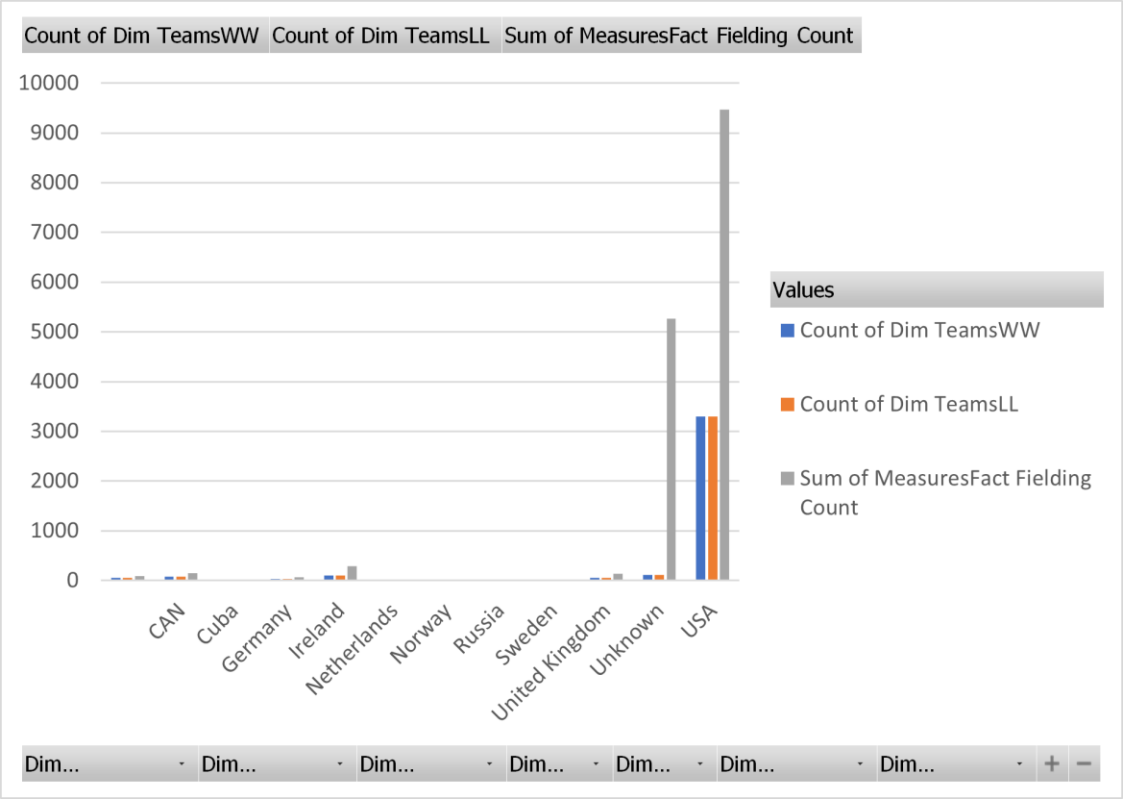


Row Labels	Count of Dim TeamsWW	Count of Dim TeamsLL	Sum of MeasuresFact Fielding Count
USA			
CA			
Napa County	1	1	2
Sacramento County	1	1	2
San Francisco	6	6	16
CT			
Hartford	1	1	3
Meriden	2	2	3
New Haven	5	5	17
Windham County	1	1	2
DC			
Washington	8	8	17
DE			
Wilmington	3	3	4
IA			
Dubuque	1	1	2
IL			
	1	1	1
Batavia	1	1	3
Belvidere	1	1	2
Chicago	8	8	19
Clinton	2	2	3
DeKalb County	1	1	2
Earlville	1	1	1
East St. Louis	1	1	3
Lockport	2	2	3
Pana	1	1	3
Petersburg	2	2	6



➢ Pivot

	B	C	D	E	F
	Row Labels	**Count of Dim TeamsWW**	**Count of Dim TeamsLL**	**Sum of MeasuresFact Fielding Count**	
	⊞	**50**	**50**	**87**	
	⊞ **CAN**	**72**	**72**	**152**	
	⊞ **Cuba**	**2**	**2**	**7**	
	⊞ **Germany**	**27**	**27**	**64**	
	⊞ **Ireland**	**97**	**97**	**287**	
	⊞ **Netherlands**	**2**	**2**	**6**	
	⊞ **Norway**	**3**	**3**	**16**	
	⊞ **Russia**	**3**	**3**	**7**	
	⊞ **Sweden**	**1**	**1**	**1**	
	⊞ **United Kingdom**	**54**	**54**	**138**	
	⊞ **Unknown**	**110**	**110**	**5261**	
	⊞ **USA**	**3299**	**3299**	**9473**	
	Grand Total	**3720**	**3720**	**15499**	


Count of Dim TeamsWW
Count of Dim TeamsLL
Sum of MeasuresFact Fielding Count
10000
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
CAN
Cuba
Germany
Ireland
Netherlands
Norway
Russia
Sweden
United Kingdom
Unknown
USA
Values
Count of Dim TeamsWW
Count of Dim TeamsLL
Sum of MeasuresFact Fielding Count
Dim...
Dim...
Dim...
Dim...
Dim...
Dim...
Dim...