UNIVERSITÀ
DEGLI STUDI
DI BERGAMO

Dipartimento
di Ingegneria Gestionale,
dell'Informazione e della Produzione

22059 – APPLIED TOPICS IN MANAGEMENT ENGINEERING

Excel, Access and Matlab

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AGENDA

Lecture III

- VLOOKUP

- PIVOT TABLES

- FURTHER MATERIAL

VLOOKUP (CERCA.VERT)

- VLOOKUP allows to lookup and retrieve data from a specific column within a table.

- This is only possible if the two tables have one column in common.

VLOOKUP (value, table, col_index, [range_lookup])

- Value: The value to look for in the first column of the table.
- Table: The table from which to retrieve the value.
- Col_index: The column in the table from which to retrieve the value.
- [range_lookup]:
  - TRUE: The function looks for an approximate match.
  - FALSE: The function looks for an exact match.

	A	B	C	D	E	F
1	NAME	SURNAME	CITY	REGION		
2	Elena	=CERCA.VERT(C2;Geography!$A$2:$B$5;2;FALSO)				
3	Luca	C CERCA.VERT(valore; **matrice_tabella**; indice; [intervallo])				
4	Claudia	Oropallo	Salerno			
5	Marco	Parodi	Alassio			

Fig.1: Example of VLOOKUP

	A	B
1	CITY	REGION
2	Dalmine	Lombardia
3	Salerno	Campania
4	Vercurago	Lombardia
5	Alassio	Liguria

1   2

Col_index

	A	B	C	D
1	NAME	SURNAME	CITY	REGION
2	Elena	Bonazzi	Dalmine	Lombardia
3	Luca	Colombo	Vercurago	Lombardia
4	Claudia	Oropallo	Salerno	Campania
5	Marco	Parodi	Alassio	Liguria

WARNINGS

1. VLOOKUP retrieves the value in the left-most column of the table.

2. VLOOKUP always retrieves the first value that it finds in the left-most column. It means that, if there are two same values, the function returns the first one also if uncorrect.

3. The "V" in VLOOKUP stands for *vertical* (Data are arranged in columns).

4. If the data are organized horizontally, you must use HLOOKUP function.

PIVOT TABLES (PT)

- A pivot table allows you to create summary tables from very complex data sets.

- To insert a pivot table:

1. Click on any cell in the spreadsheet.
2. On the Insert Tab, in the Tables group, select Pivot Tables.
3. The "Create Pivot Table" box will appear. You must select the data range. After, you can choose where to put the PT: in a new worksheet or in the existing one.
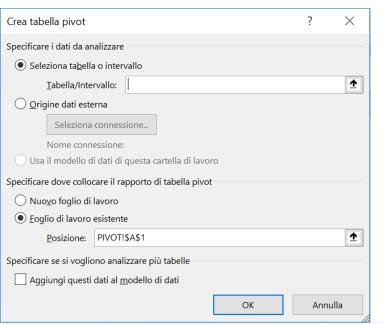
Fig.2: Step 2

Fig.3: Step 3

Fig.4: Dataset

4. You can choose fileds to add to report.

Fig.5: Pivot Tables Fieilds

PIVOT TABLES

- The pivot table is presented as follows:

Somma di Quantity	Etichette di colonna ▼				
Etichette di riga ▼	Germany	Russia	UK	USA	Totale complessivo
1			3313		3313
2			123	1129	1252
3	341				341
4		822			822
Totale complessivo	341	822	3436	1129	5728

Fig.6: The Pivot Table

Analysing this table, we can esay understand that the most quantity of products comes form the UK and the lower from Germany!
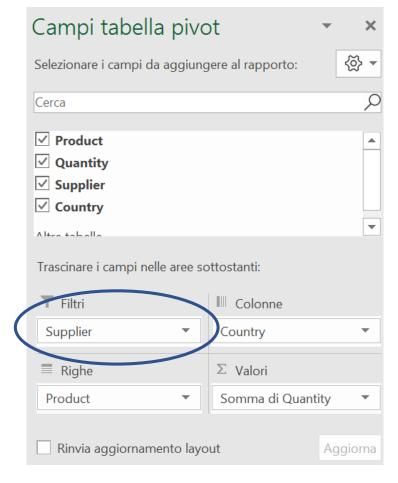
PIVOT TABLES

- You can also add a *Filter*.

Fig.7: The Pivot Table with filter on Supplier field
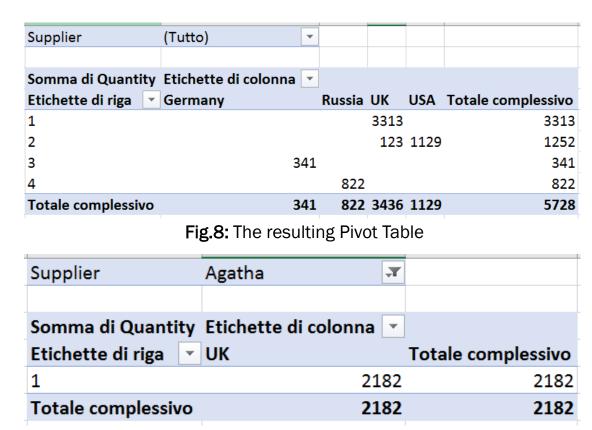

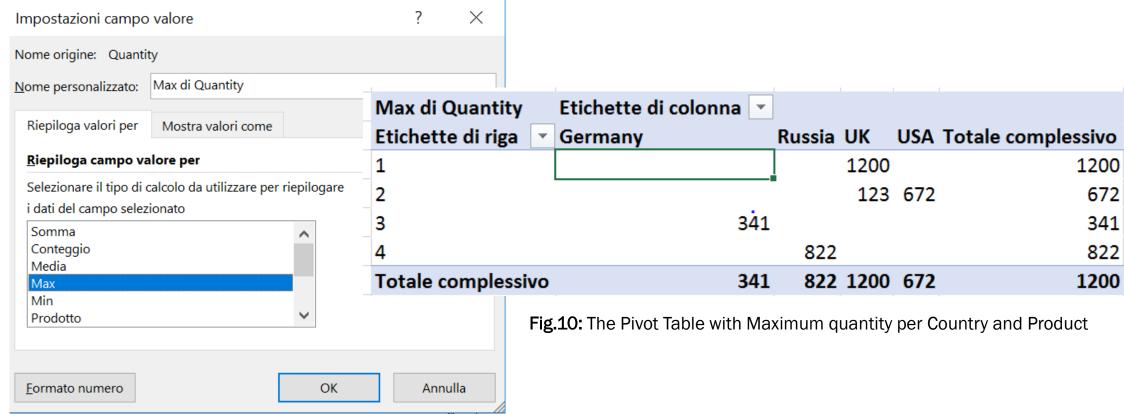Fig.8: The resulting Pivot Table

Fig.9: The Pivot Table with «Agatha» filter on Procuct 1

Analysing this table, we can easy state that Supplier «Agatha» from UK sells 2182 units of Product 1.

- Moreover, you can change the type of calculation you want to use:

  - Select «Impostazione campo valori» («Value field settings»)

Fig.10: The Pivot Table with Maximum quantity per Country and Product

FURTHER MATERIAL

To review and deepen the topics of this lecture

1. https://www.youtube.com/watch?v=8okA22yMwTs

2. https://www.youtube.com/watch?v=m0wI61ahfLc

3. Alexander, M., Kusleika, R., & Walkenbach, J. (2018). Excel 2019 Bible. John Wiley & Sons