Practical 4: Data Modelling and Analytics with Pivot Table in Excel

Data Model is used for building a model where data from various sources can be combined by creating relationships among the data sources. A Data Model integrates the tables, enabling extensive analysis using PivotTables, Power Pivot, and Power View.

A **Data Model** is created automatically when you import two or more tables simultaneously from a database. The existing database relationships between those tables is used to create the Data Model in Excel.

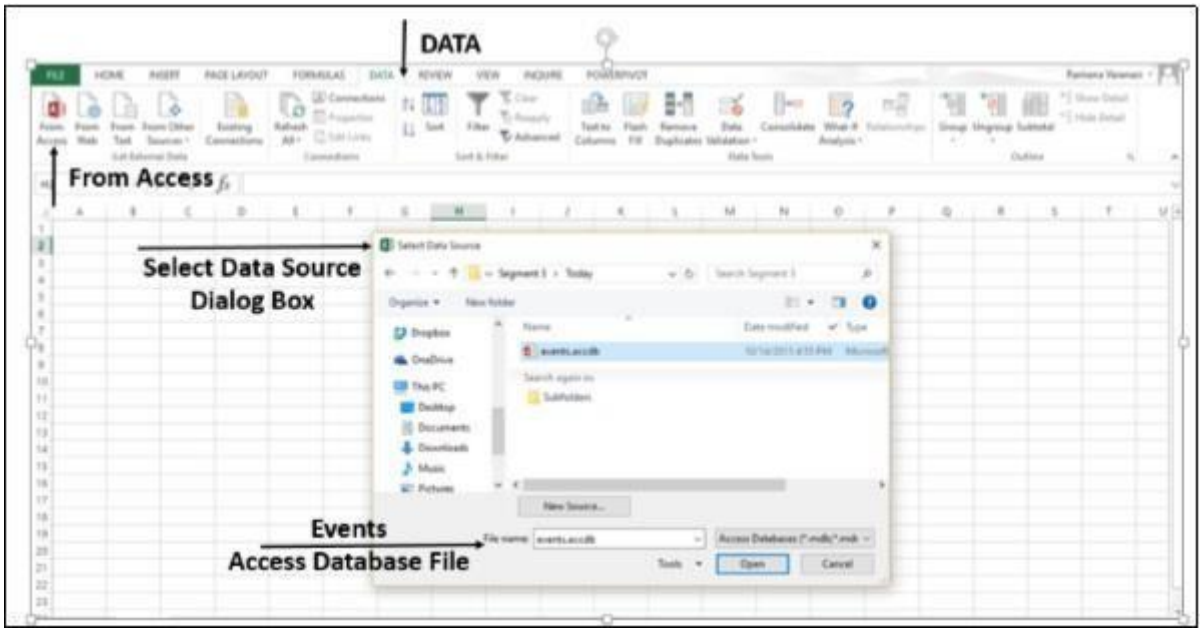
Step 1 − Open a new blank Workbook in Excel.

Step 2 − Click on the **DATA** tab.

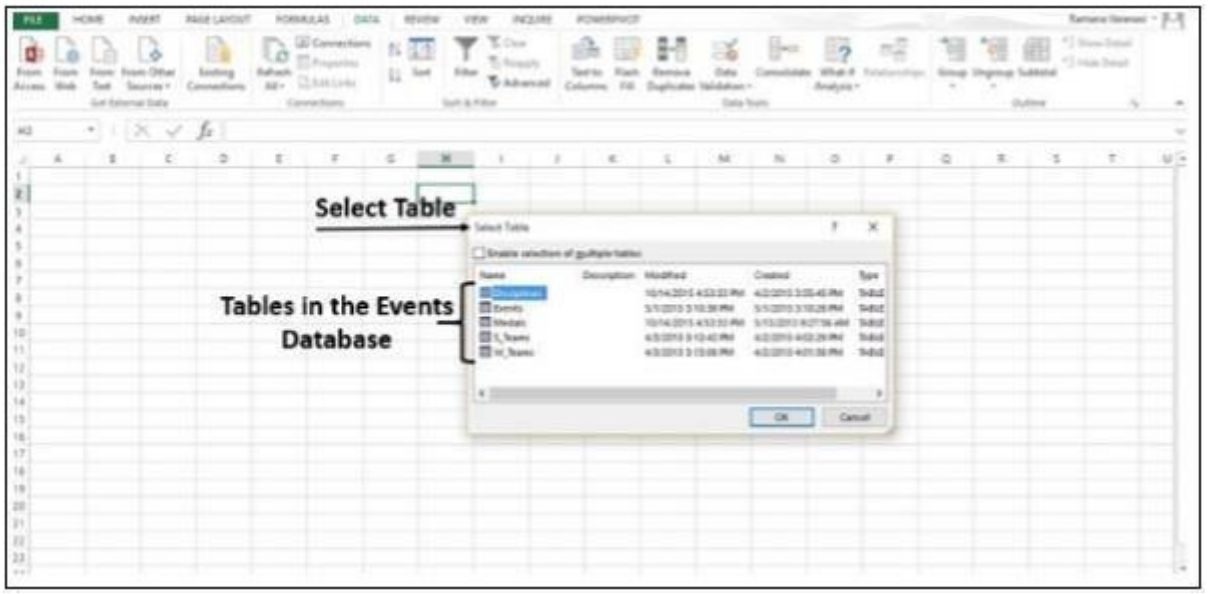
Step 3 − In the **Get External Data** group, click on the option **From Access**. The **Select Data Source** dialog box opens.

Step 4 − Select **Events.accdb**, Events Access Database file.

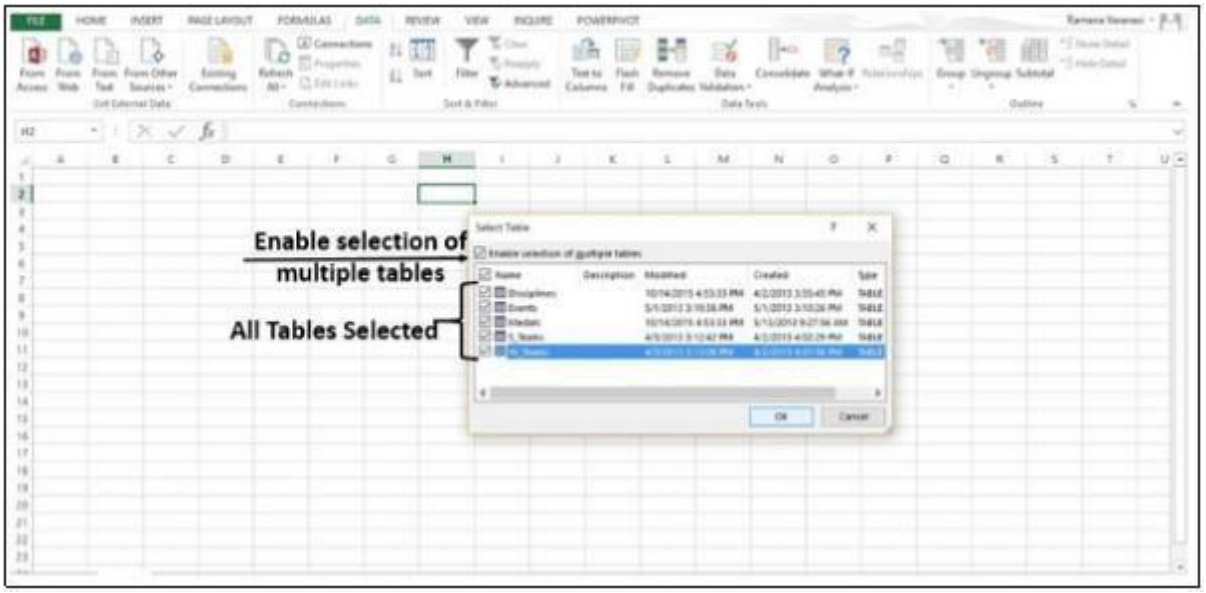
(url:/ https://fcschools.instructure.com/courses/373/files/10607)



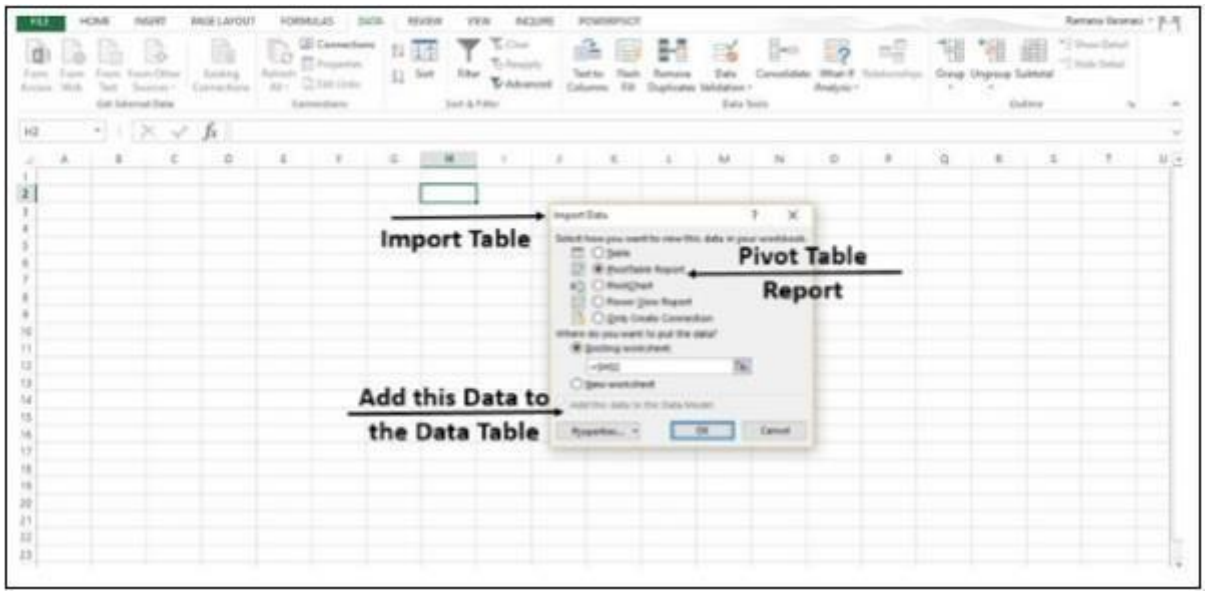
Step 5 − The **Select Table** window, displaying all the **tables** found in the database, appears.



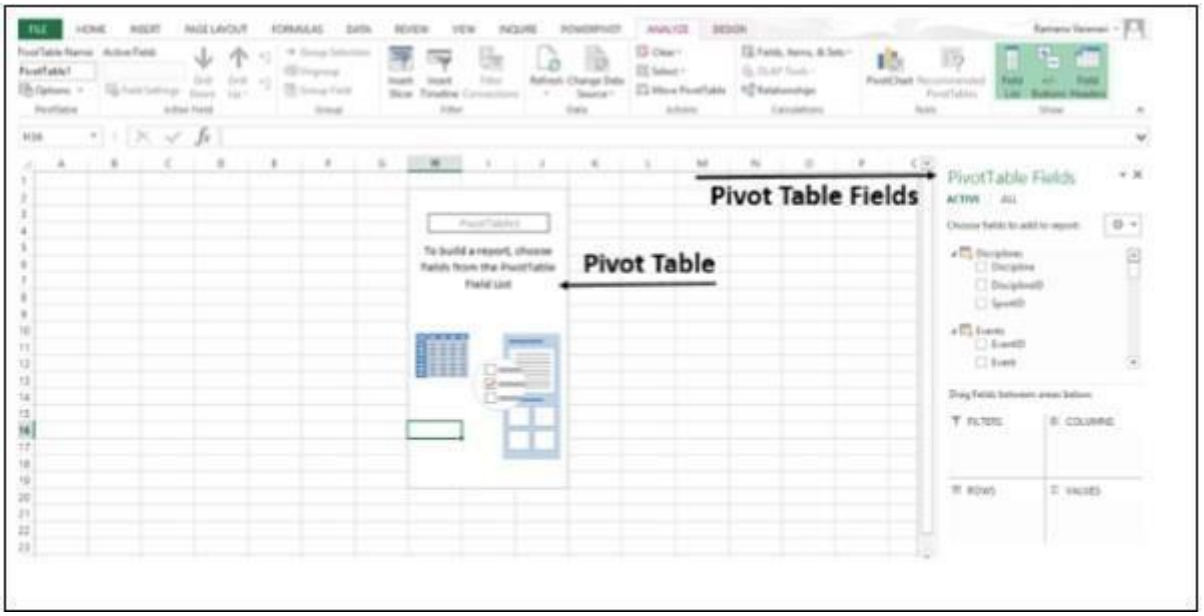
Step 6 − Tables in a database are similar to the tables in Excel. Check the **'Enable selection of multiple tables'** box, and select all the tables. Then click **OK**.



Step 7 − The **Import Data** window appears. Select the **PivotTable Report** option. This option imports the tables into Excel and prepares a PivotTable for analyzing the imported tables. Notice that the checkbox at the bottom of the window - **'Add this data to the Data Model'** is selected and disabled.



Step 8 − The data is imported, and a **PivotTable** is created using the imported tables.



Explore Data Using PivotTable

Step 1 − You know how to add fields to PivotTable and drag fields across areas. Even if you are not sure of the final report that you want, you can play with the data and choose the best-suited report.

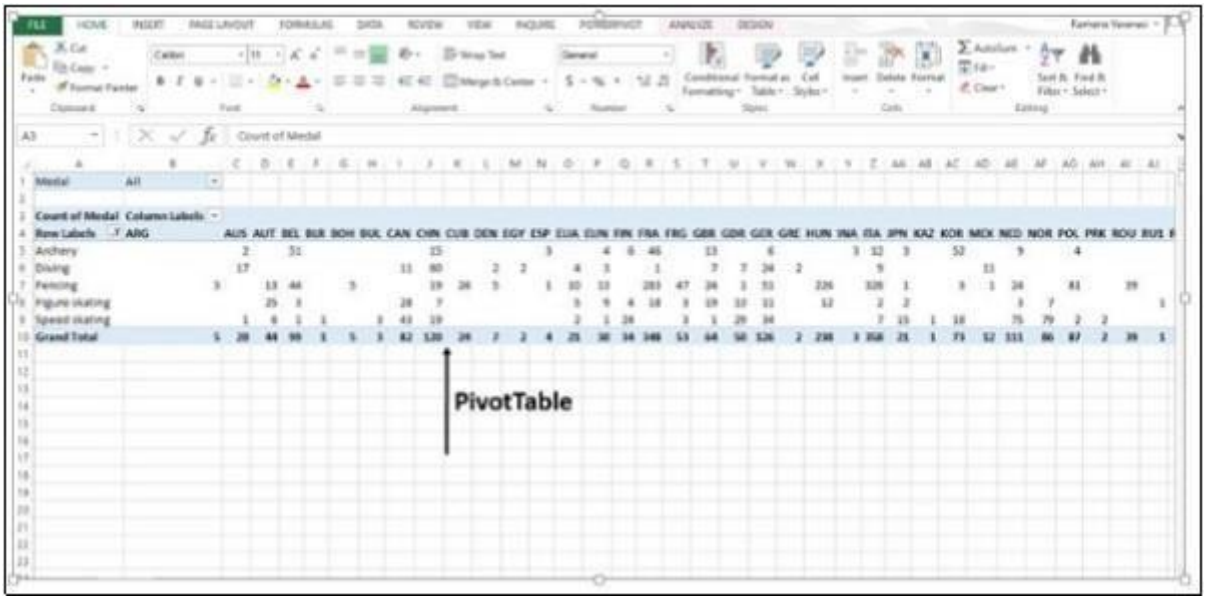
In **PivotTable Fields**, click on the arrow beside the table - **Medals** to expand it to show the fields in that table. Drag the **NOC_CountryRegion** field in the **Medals** table to the **COLUMNS** area.

Step 2 − Drag **Discipline** from the **Disciplines** table to the **ROWS** area.

Step 3 − Filter **Discipline** to display only five sports: Archery, Diving, Fencing, Figure Skating, and Speed Skating. This can be done either in **PivotTable Fields** area, or from the **Row Labels** filter in the PivotTable itself.

Step 4 − In **PivotTable Fields**, from the **Medals** table, drag Medal to the **VALUES** area.

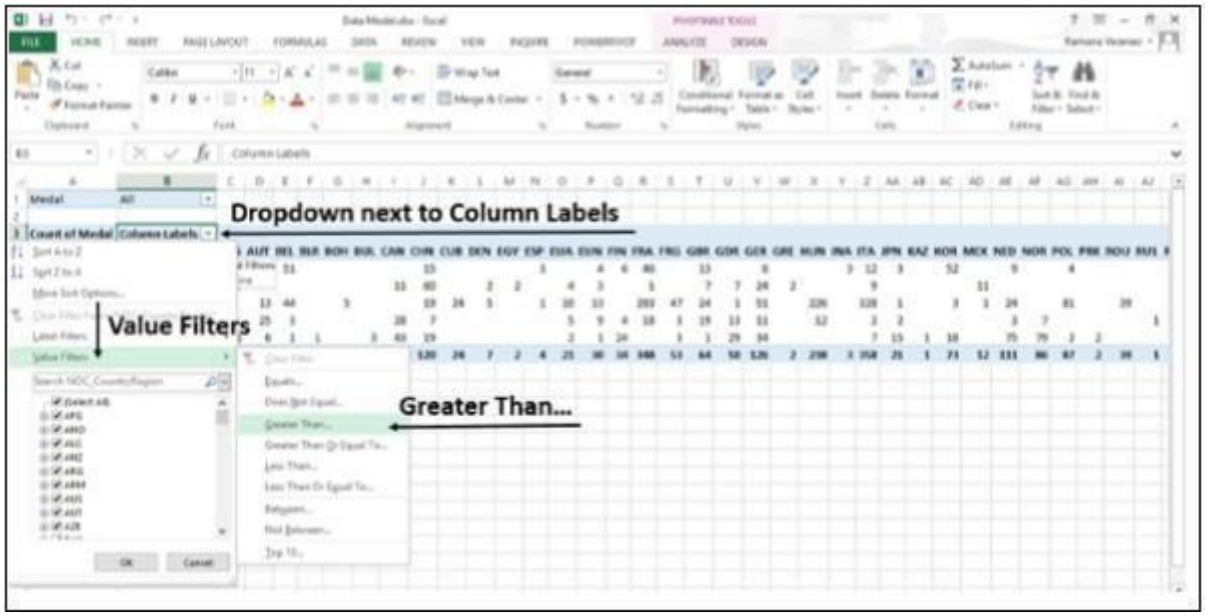
Step 5 − From the **Medals** table, select **Medal** again and drag it into the **FILTERS** area.



Step 6 − Click the dropdown list button to the right of the **Column** labels.

Step 7 − Select **Value Filters** and then select **Greater Than**…

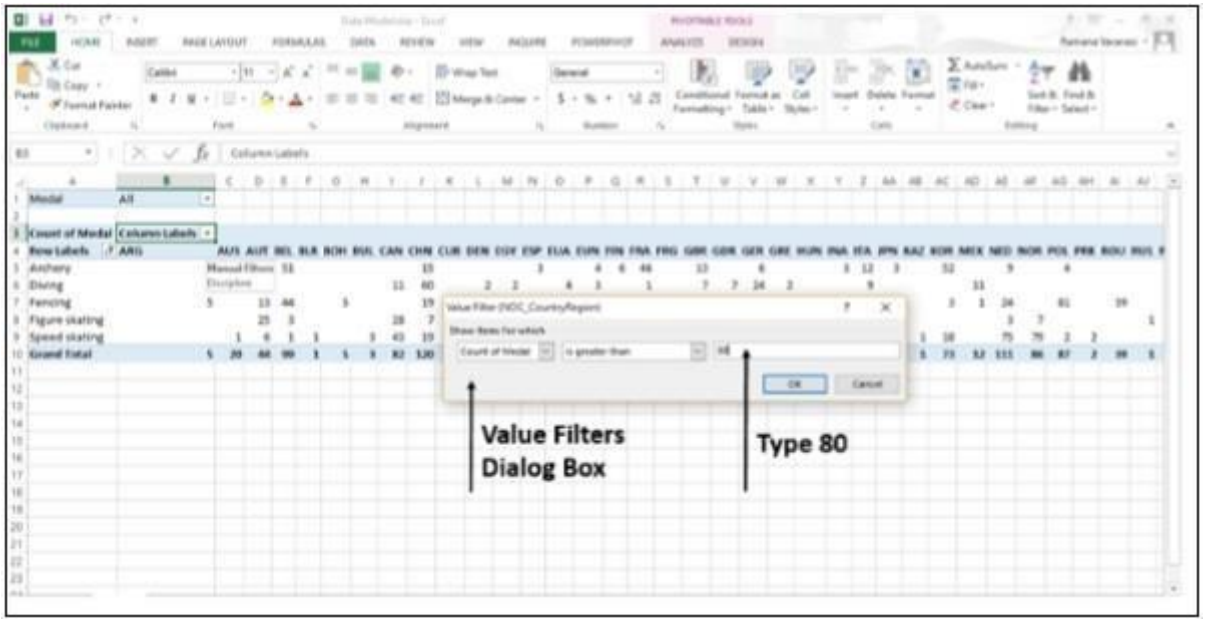
Step 8 − Click **OK**.



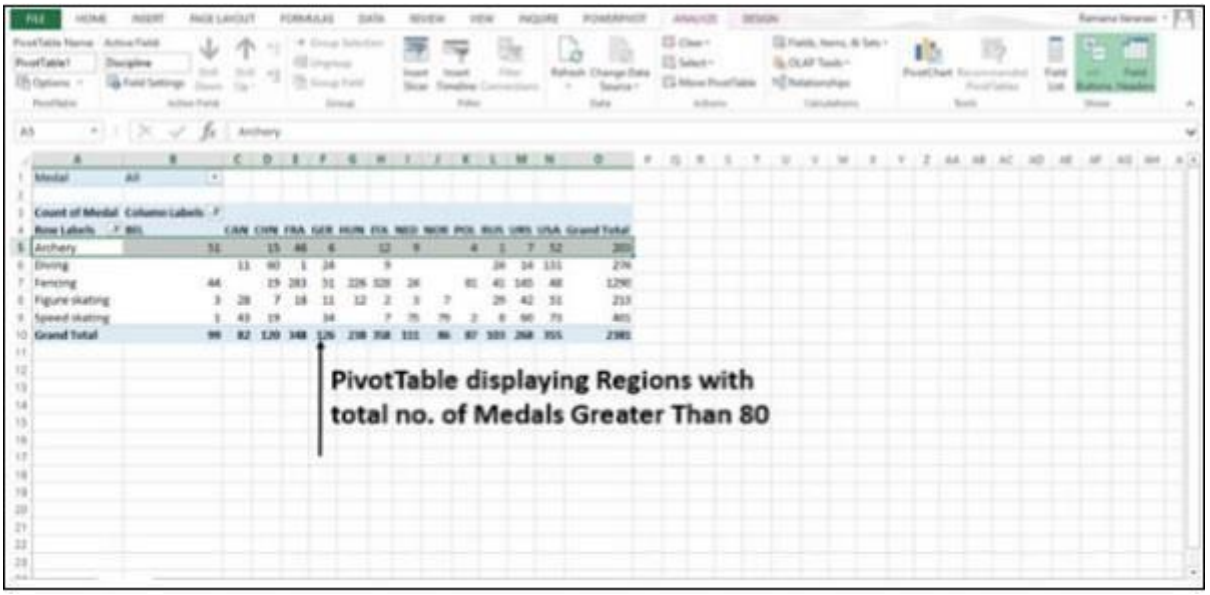
The Value **Filters dialog** box for the count of Medals **is greater than** appears.

Step 9 − Type **80** in the **Right Field**.

Step 10 − Click **OK**.



The PivotTable displays only those regions, which has more than total 80 medals.

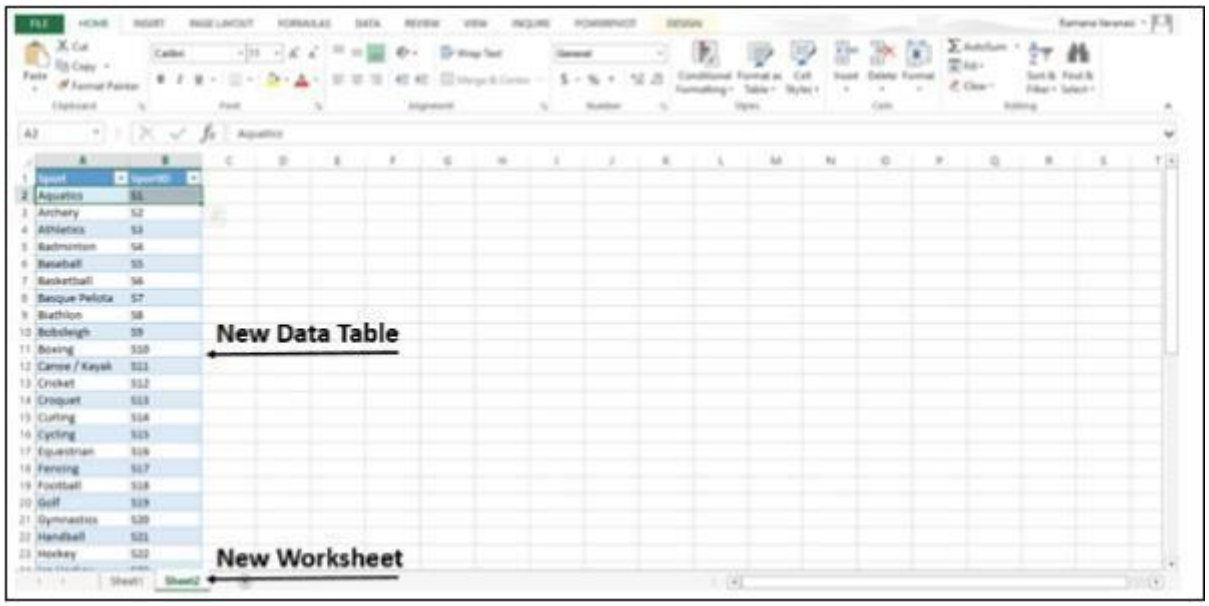


Create Relationship between Tables

Relationships let you analyze your collections of the data in Excel, and create interesting and aesthetic reports from the data you import.

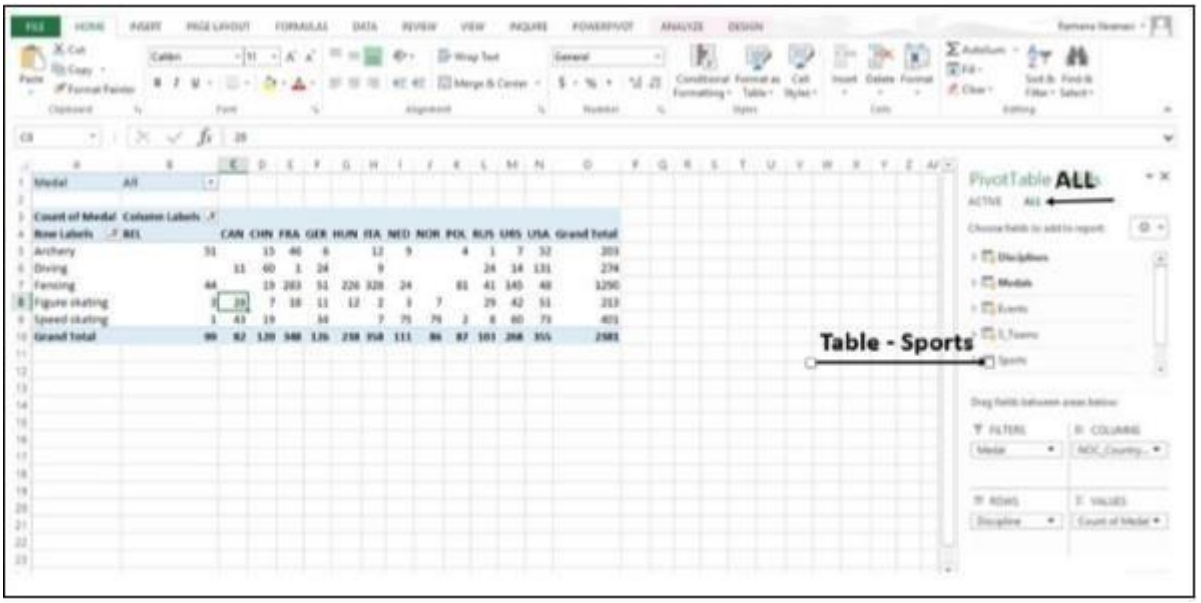
Step 1 − **Insert** a new Worksheet.

Step 2 − Create a new table with new data. Name the new table as **Sports**.

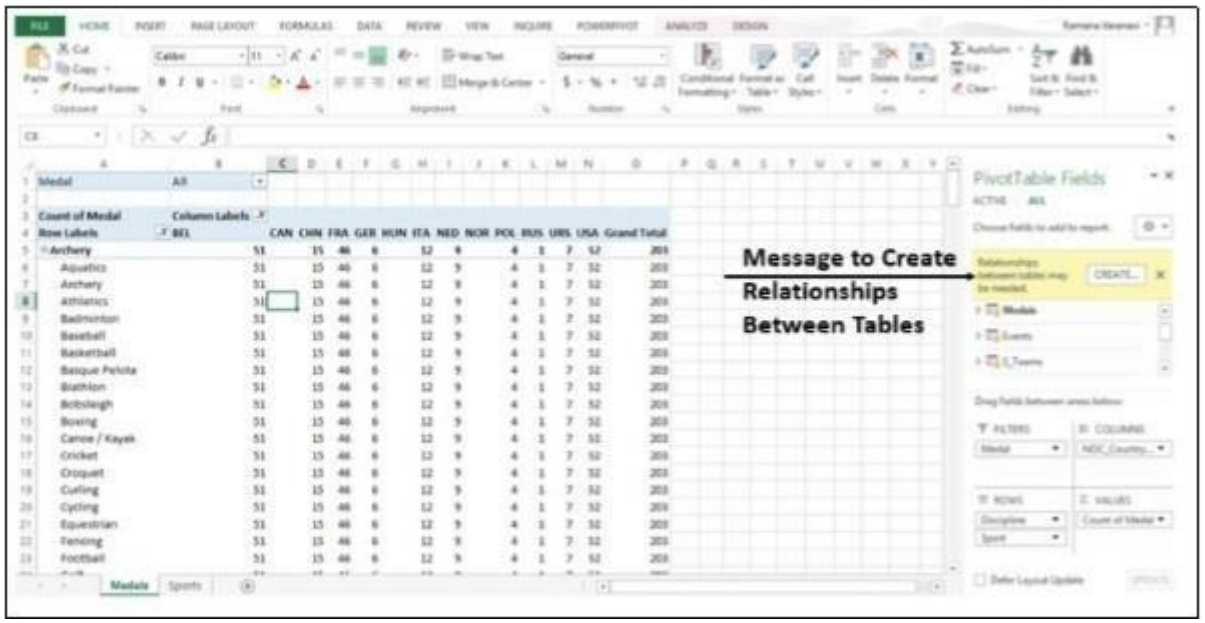


Step 3 − Now you can create relationship between this new table and the other tables that already exist in the **Data Model** in Excel. Rename the Sheet1 as **Medals** and Sheet2 as **Sports**.

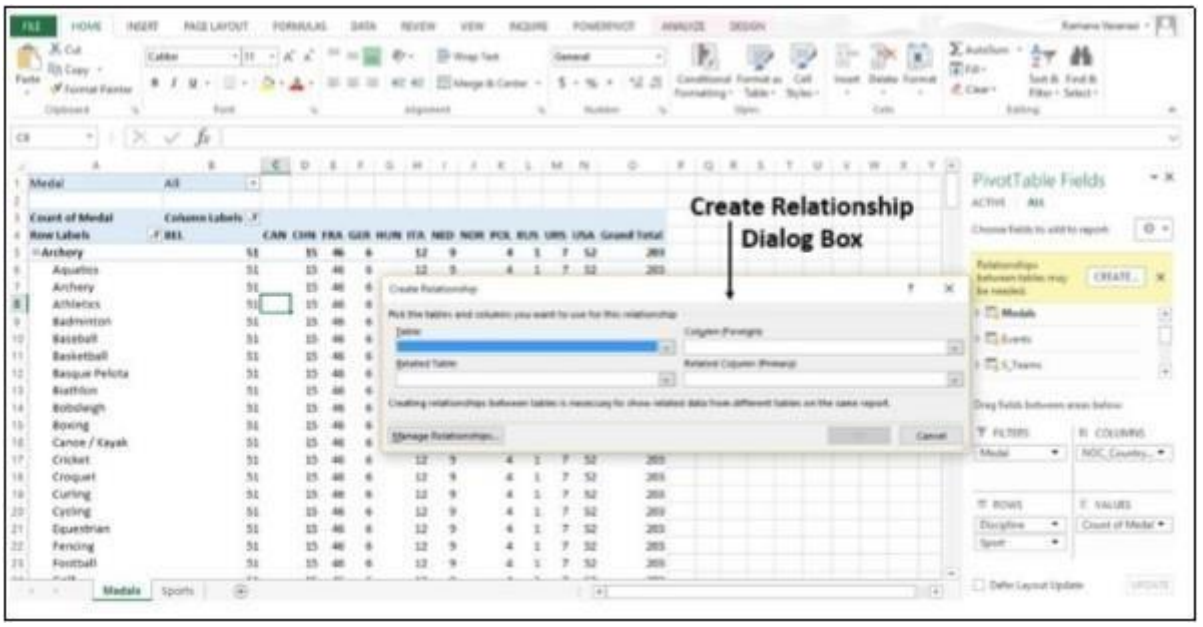
On the **Medals sheet**, in the **PivotTable Fields List**, click **All**. A complete list of available tables will be displayed. The newly added table - **Sports** will also be displayed.



Step 4 − Click on **Sports**. In the expanded list of fields, select **Sports**. Excel messages you to create a relationship between tables.



Step 5 – Click on **CREATE**. The **Create Relationship** dialog box opens.



Step 6 − To create the relationship, one of the tables must have a column of unique, non-repeated, values. In the **Disciplines** table, **SportID** column has such values. The table **Sports** that we have created also has the **SportID** column. In **Table**, select **Disciplines**.

Step 7 − In **Column (Foreign)**, select SportID.

Step 8 − In **Related Table**, select **Sports**.

Step 9 − In **Related Column (Primary)**, SportID gets selected automatically. Click **OK**.

Step 10 − The **PivotTable** is modified to reflect the addition of the new **Data Field** Sport. Adjust the order of the fields in the Rows area to maintain the **Hierarchy**. In this case, **Sport**

should be first and **Discipline** should be the next, as **Discipline** will be nested in Sport as a sub-category.