
Grouping and Aggregation

Grouping a List Report
Understanding Aggregation
Level Spanning
Sections

Grouping a List Report

Grouping a column of data makes it easier to find data, as all like items are placed within the same grouping. After grouping data, the columns can have a count, total, average or the like applied to them.

GOAL: To group the columns.

STEPS:

1. **Open the Personal Data Report.**
2. **Save the report as Personal Data Report grouped.**
3. Move the **Primary University Affiliation Description** and **Primary University Affiliation Group Description** (the last two columns) to the beginning of the report.

The screenshot shows a report designer interface with a menu bar (File, Edit, View, Structure, Table, Data, Run, Tools, Help) and a toolbar. On the left, the 'Insertable Objects' pane shows a tree structure under 'Report Net Training' with sub-items like 'Personal Data' and 'Citizenship Data'. The main report area displays a table titled 'Personal Data Report' with the following structure:

Primary University Affiliation Description	Primary University Affiliation Group Description	Full Name	Country Code	Street Address 1	City	State	Postal Code	ID
<Primary University Affiliation Description>	<Primary University Affiliation Group Description>	<Full Name>	<Country Code>	<Street Address 1>	<City>	<State>	<Postal Code>	<ID>
<Primary University Affiliation Description>	<Primary University Affiliation Group Description>	<Full Name>	<Country Code>	<Street Address 1>	<City>	<State>	<Postal Code>	<ID>
<Primary University Affiliation Description>	<Primary University Affiliation Group Description>	<Full Name>	<Country Code>	<Street Address 1>	<City>	<State>	<Postal Code>	<ID>

At the bottom of the report area, there are footer elements: '<% AsOfDate() %>', '- <% PageNumber() %> -', and '<% AsOfTime() %>'.

4. **Run** the report. Note the repeating data in the first two columns

Pamela Rubbo (prubbo@Princeton.EDU)

Report Viewer Close About

Personal Data Report

Primary University Affiliation Description	Primary University Affiliation Group Description	Full Name	Country Code	Street Address 1	City	State	Postal Code	ID
Student	Undergraduate	Aden,Hitoshi	USA	504 South 4th Avenue	Chester	NJ	07930	000000701
Miscellaneous	Miscellaneous	Adler,Meiko		486 Fairfield Road				000000779
Employee	Human Resources	Agyeman,Annette R.	USA	19 Shirley Lane	Erie	PA	16505	000000230
Student	Undergraduate	Ahearn,Amy B.	USA	77 Van Sant Drive	East brunswick	NJ	08816	000000666
Student	Graduate	Ahmad,Heinz-Dieter	USA	42 Rolling Lane	Palo Alto	CA	94306	000000369
Employee	Human Resources	Ahmed,Michael D.	USA	12 Shell Turn	Salina	KS	67401	000000166
Employee	Human Resources	Aidoo,Roy	USA	99 Chesterfield	Stone Harbor	NJ	08247	000000039
Employee	Human Resources	Alatalo,Thomas		150 Locust Ave.				000000060
Student	Graduate	Alexander,Jiping	USA	5 Tanager Lane	Golden Valley	MN	55416	000000484
Employee	Human Resources	Alyea,Mark	USA	3 Kirk Avenue	Princeton	NJ	08540	000000023
Miscellaneous	Departmental Computer User	Amerian,Access	USA	713 Lake Drive	Lawrenceville	NJ	08648	000000905
Employee	Human Resources	Amobi,Maria I.	USA	116 Niagara Lane	Bloomfield Hills	MI	48301	000000236
Miscellaneous	Miscellaneous	Amon,Shiren	USA	9 Saylor Court	Woodside	CA	94062	000000762
Miscellaneous	Plasma Physics Lab	Amon,Ze-Ke	USA	36 Juniper Row	Flower Mound	TX	75022	000000981

Top Page up Page down Bottom

5. Close the **Report Viewer**.

6. Click once on the **Primary University Affiliation Description** column.

7. Click the **Group/Ungroup** icon .

Personal Data Report

Primary University Affiliation Description	Primary University Affiliation Group Description	Full Name	Country Code	Street Address 1	City	State	Postal Code	ID
< Primary University Affiliation Description >	<Primary University Affiliation Group Description >	<Full Name >	<Country Code >	<Street Address 1 >	<City >	<State >	<Postal Code >	<ID >
<Primary University Affiliation Description >	<Primary University Affiliation Group Description >	<Full Name >	<Country Code >	<Street Address 1 >	<City >	<State >	<Postal Code >	<ID >

8. **Run** the report. The first column is grouped.

Pamela Rubbo (prubbo@Princeton.EDU)

Report Viewer Close About

Personal Data Report

Primary University Affiliation Description	Primary University Affiliation Group Description	Full Name	Country Code	Street Address 1	City	State	Postal Code	ID
Employee	Human Resources	Agyeman, Annette R.	USA	19 Shirley Lane	Erie	PA	16505	000000230
	Human Resources	Ahmed, Michael D.	USA	12 Shell Turn	Salina	KS	67401	000000166
	Human Resources	Aidoo, Roy	USA	99 Chesterfield	Stone Harbor	NJ	08247	000000039
	Human Resources	Alatalo, Thomas		150 Locust Ave.				000000060
	Human Resources	Alyea, Mark	USA	3 Kirk Avenue	Princeton	NJ	08540	000000023
	Human Resources	Amobi, Maria I.	USA	116 Niagara Lane	Bloomfield Hills	MI	48301	000000236
	Human Resources	Andler, Gregory G.	USA	70 Clay Street	New York	NY	10022	000000120
	Human Resources	Andrews, Waka	USA	Post Office Box 261	Minersville	PA	17954	000000235
	Human Resources	Anker, Katsuaki	USA	2334 Strawberry Court	Woodstock	MD	21163	000000121
	Human Resources	Bakhtiar, Joan	USA	82 Sycamore Court	Houston	TX	77005	000000223
	Human Resources	Barnes, Steve SFC	USA	40 Fox Chase Run	New York	NY	100172303	000000017
	Human Resources	Bayri, John	USA	56 Viburnum Court	Morris Plains	NJ	07950	000000124
	Human Resources	Bearse, Thomas	HKG	61 Runyon Drive	Lucky Plaza			000000013

Top Page up Page down Bottom

9. **Close** the Report Viewer.

10. Click **Save**.

11. Click in the column heading of **Primary University Affiliation Group Description**.

12. Click the **Group/Ungroup** icon .

13. **Run** the report.

Pamela Rubbo (prubbo@Princeton.EDU)

Report Viewer Close About

Personal Data Report

Primary University Affiliation Group Description	Primary University Affiliation Group Description	Full Name	Country Code	Street Address 1	City	State	Postal Code	ID
Employee	Human Resources	Agyeman,Annette R.	USA	19 Shirley Lane	Erie	PA	16505	000000230
		Ahmed,Michael D.	USA	12 Shell Turn	Salina	KS	67401	000000166
		Aidoo,Roy	USA	99 Chesterfield	Stone Harbor	NJ	08247	000000039
		Alatalo,Thomas		150 Locust Ave.				000000060
		Alyea,Mark	USA	3 Kirk Avenue	Princeton	NJ	08540	000000023
		Amobi,Maria I.	USA	116 Niagara Lane	Bloomfield Hills	MI	48301	000000236
		Andler,Gregory G.	USA	70 Clay Street	New York	NY	10022	000000120
		Andrews,Waka	USA	Post Office Box 261	Minersville	PA	17954	000000235
		Anker,Katsuaki	USA	2334 Strawberry Court	Woodstock	MD	21163	000000121
		Bakhtiar,Joan	USA	82 Sycamore Court	Houston	TX	77005	000000223
		Barnes,Steve SFC	USA	40 Fox Chase Run	New York	NY	100172303	000000017
		Bayri,John	USA	56 Viburnum Court	Morris Plains	NJ	07950	000000124
		Bearse,Thomas	HKG	61 Runyon Drive	Lucky Plaza			000000013

Top Page up Page down Bottom

14. **Page down** through the report or click **Bottom** to see the various types of data available.

15. **Close** the Report Viewer.

16. **Save** the report.

Understanding Aggregation

What is aggregation?

Aggregation is the summarization of grouped items. By default, Report Studio automatically groups non-numeric (text or date) data and summarizes numeric data. This means that the numbers you see in your reports are probably a summarization of the raw data in the database.

The User can turn off the Automatic aggregation. (This option is covered in more detail in the ReportNet Level II course.)

Types of aggregation:

Some of the common types of aggregation are:

Total	Sums the items in the group
Average	Averages the items in the group
Minimum	Shows the smallest number in the group
Maximum	Shows the largest number in the group
Count	Counts the number of items in the group

The default type of aggregation for each numeric data item is set in the package.

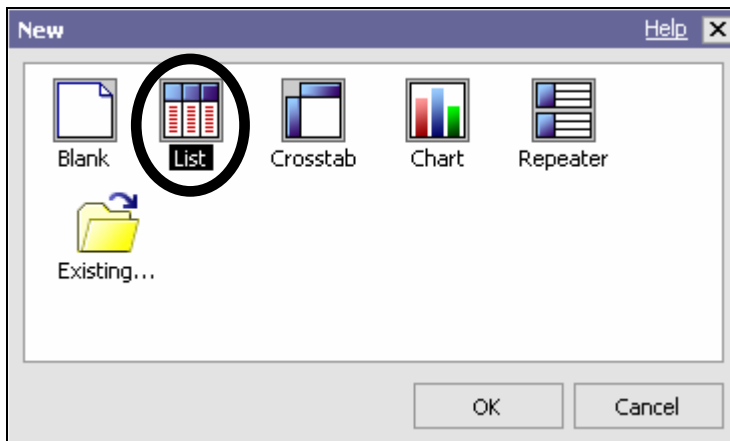
Level Spanning

Level Span controls how often the report creator or user chooses to show a particular item within a group.

GOAL: To create a Level Span with citizenship data.

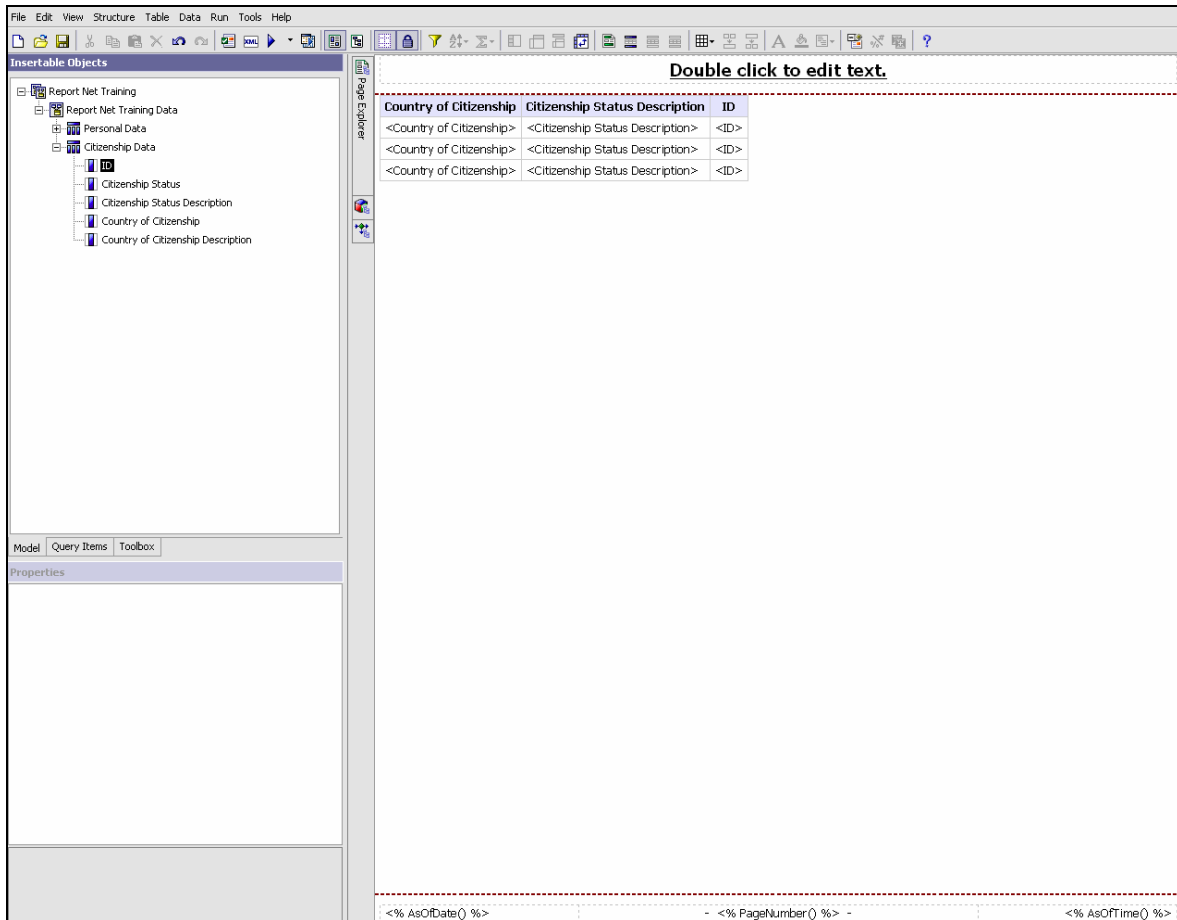
STEPS:

1. We will create a new report for this exercise. From the **File** menu, select **New**. Select **List** and click **OK**.



2. Open the **Citizenship Data** folder.

3. Add the following columns: **Country of Citizenship**, **Citizenship Status Description**, and **ID**.



4. Save the report as **Level Spanning**.

5. **Run** the report.

The screenshot shows the 'Report Viewer' interface for Pamela Rubbo (prubbo@Princeton.EDU). The window title is 'Report Viewer' and it includes 'Close' and 'About' buttons. A toolbar with various icons is visible. The main content is a table with three columns: 'Country of Citizenship', 'Citizenship Status Description', and 'ID'. The table contains 20 rows of data. At the bottom, the date is 'Sep 29, 2005', the page number is '- 1 -', and the time is '9:35:44 AM'. Navigation links for 'Top', 'Page up', 'Page down', and 'Bottom' are also present.

Country of Citizenship	Citizenship Status Description	ID
	Alien Permanent	000000337
	Alien Permanent	000000537
	Not Indicated	000000572
	Not Indicated	000000574
ALB	Alien Temporary/International	000000237
ARG	Alien Temporary/International	000000078
ARG	Alien Temporary/International	000000485
ARG	Alien Temporary/International	000000637
ARG	Alien Temporary/International	000000864
ARG	Alien Temporary/International	000001008
ARG	Alien Temporary/International	000001018
AUS	Alien Permanent	000000538
AUS	Alien Temporary/International	000000008
AUS	Alien Temporary/International	000000076
AUS	Alien Temporary/International	000000158
AUS	Alien Temporary/International	000000173
AUS	Alien Temporary/International	000000428
AUS	Alien Temporary/International	000000444
AUS	Alien Temporary/International	000000951
AUT	Alien Temporary/International	000000309

6. **Close** the Report Viewer.

7. **Group** the **Country of Citizenship** column.

8. **Run** the report.

Country of Citizenship	Citizenship Status Description	ID
	Alien Permanent	000000337
	Alien Permanent	000000537
	Not Indicated	000000572
	Not Indicated	000000574
ALB	Alien Temporary/International	000000237
ARG	Alien Temporary/International	000000078
	Alien Temporary/International	000000485
	Alien Temporary/International	000000637
	Alien Temporary/International	000000864
	Alien Temporary/International	000001008
	Alien Temporary/International	000001018
AUS	Alien Temporary/International	000000008
	Alien Temporary/International	000000076
	Alien Temporary/International	000000158
	Alien Temporary/International	000000173
	Alien Temporary/International	000000428
	Alien Temporary/International	000000444
	Alien Permanent	000000538
	Alien Temporary/International	000000951
AUT	Alien Temporary/International	000000309

9. **Close** the Report Viewer.

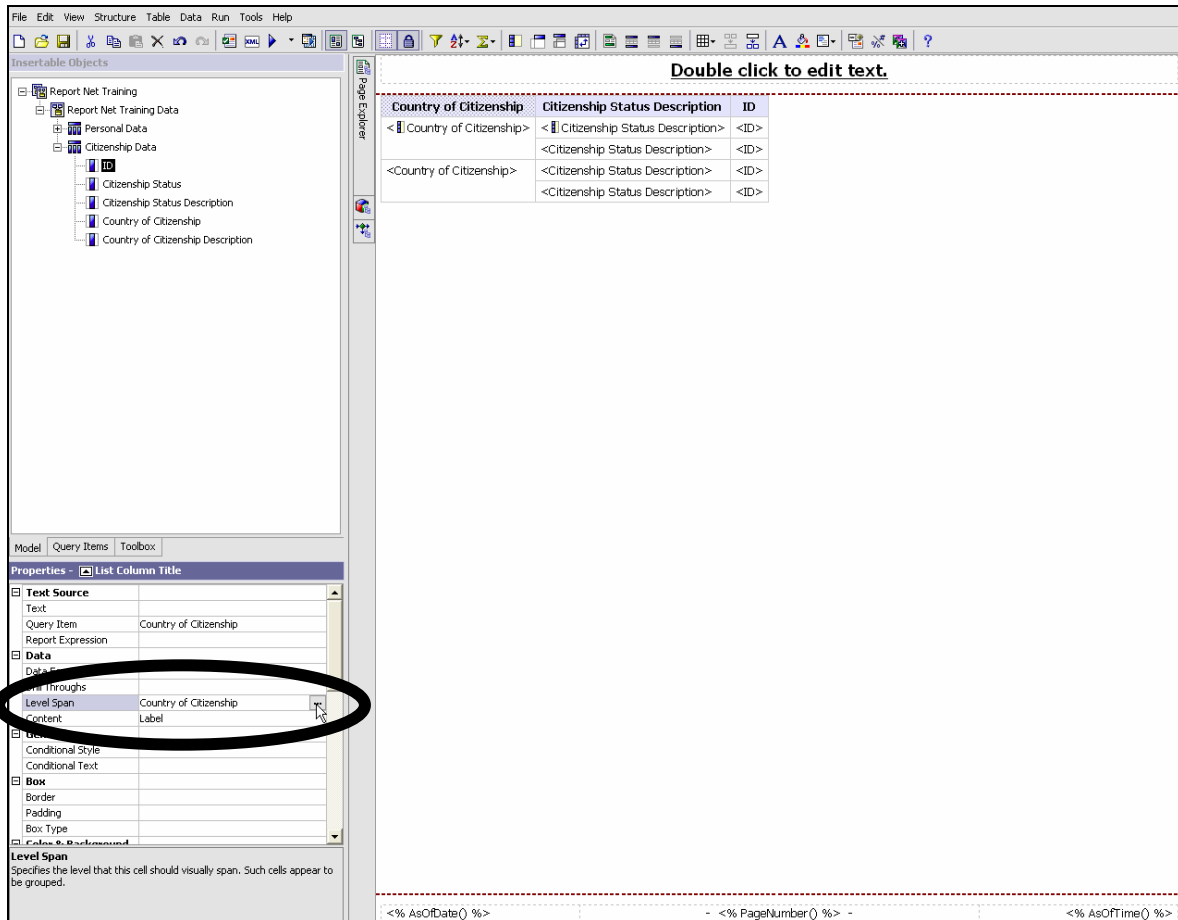
10. Group the **Citizenship Status Description** column. **Run** the report. Both columns are grouped.

Country of Citizenship	Citizenship Status Description	ID
	Alien Permanent	000000337
		000000537
	Not Indicated	000000572
		000000574
ALB	Alien Temporary/International	000000237
ARG	Alien Temporary/International	000000078
		000000485
		000000637
		000000864
		000001008
		000001018
AUS	Alien Permanent	000000538
	Alien Temporary/International	000000008
		000000076
		000000158
		000000173
		000000428
		000000444
		000000951
AUT	Alien Temporary/International	000000309

11. **Close** the Report Viewer.

12. In order for the Country of Citizenship to repeat each time the Citizenship Status Description changes; the Level Span association must be changed.

13. Highlight the **Country of Citizenship** column heading and locate **Level Span** in the Properties window.



14. Double-click the words **Level Span** or click the ellipsis.

15. In the Choose Level window, choose **Citizenship Status Description**.



16. Click **OK**.

17. **Run** the report and note how the report has changed. (AUS now repeats each time a new citizenship status is listed.)

Country of Citizenship	Citizenship Status Description	ID
	Alien Permanent	000000337
		000000537
	Not Indicated	000000572
		000000574
ALB	Alien Temporary/International	000000237
ARG	Alien Temporary/International	000000078
		000000485
		000000637
		000000864
		000001008
		000001018
AUS	Alien Permanent	000000538
AUS	Alien Temporary/International	000000008
		000000076
		000000158
		000000173
		000000428
		000000444
		000000951
AUT	Alien Temporary/International	000000309

18. **Close** the Report Viewer.

19. Click **Save**.

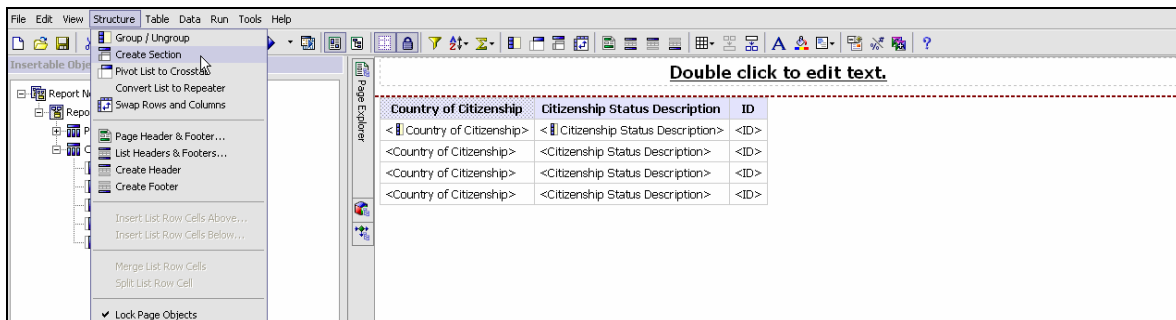
Sections

Sections are similar to grouping; however, a section differs in the fact that it shows the query item as the heading of a section or area within the report.

GOAL: To create a section based on Country of Citizenship.

STEPS:

1. Save the Level Spanning report as **Sections**.
2. Highlight the **Country of Citizenship** column heading.
3. From the **Structure** menu, locate **Create Section**.



4. Click **Create Section**.

The screenshot shows a report design tool interface. The main workspace displays a section titled "< Country of Citizenship >". Inside this section, there is a table with two columns: "Citizenship Status Description" and "ID". The table contains five rows of placeholder text: "< Citizenship Status Description >" followed by "< ID >". Above the table, the text "Double click to edit text." is visible. The left-hand pane, titled "Insertable Objects", shows a tree view of report components. Under "Report Net Training Data", there is a "Citizenship Data" folder containing "ID", "Citizenship Status", "Citizenship Status Description", "Country of Citizenship", and "Country of Citizenship Description". The "Country of Citizenship" item is currently selected. At the bottom of the workspace, there are three footer placeholders: "<% AsOfDate() %>", "- <% PageNumber() %> -", and "<% AsOfTime() %>".

5. **Run** the report and notice that each time the Country changes, a new Country section is created.

The screenshot shows the Report Viewer interface for Pamela Rubbo (prubbo@Princeton.EDU). The report is titled 'Report Viewer' and contains four sections, each representing a different country: ALB, ARG, and AUS. Each section displays a table of Citizenship Status Descriptions and their corresponding IDs.

Citizenship Status Description	ID
Alien Permanent	000000337
	000000537
Not Indicated	000000572
	000000574

ALB

Citizenship Status Description	ID
Alien Temporary/International	000000237

ARG

Citizenship Status Description	ID
Alien Temporary/International	000000078
	000000485
	000000637
	000000864
	000001008
	000001018

AUS

Citizenship Status Description	ID
Alien Permanent	000000538
Alien Temporary/International	000000008
	000000076
	000000158

6. **Close** the Report Viewer.

7. Click **Save**.

Note: Country no longer repeats for each Citizenship Status Description, as it did for Level Spanning. If you wish to have a section for each grouping (ie. a section for Country and a “sub-section” for Citizenship Status Description within country), select both column headings in the report, and select **Create Section**.