



## Practice

If you restarted your SAS session, open and submit the **libname.sas** program in the course files.

### Level 1

#### 3. Performing a One-to-Many Merge

The **pg2.np\_2016traffic** table contains monthly traffic statistics from the National Park Service for parks. Create a table that contains the monthly traffic statistics from the **pg2.np\_2016traffic** table and adds a column for the park name. Park name values can be found in the matching **pg2.np\_codelookup** table.

- Open the **p205p03.sas** program in the **practices** folder. Submit the two PROC SORT steps. Determine the name of the common column in the sorted tables.
- Modify the second PROC SORT step to use the **RENAME=** option after the **pg2.np\_2016traffic** table to rename **Code** to **ParkCode**. Modify the **BY** statement to sort by the new column name.

**Note:** You could also rename the column in the DATA step after the table in the MERGE statement.

- Write a DATA step to merge the sorted tables by the common column to create a new table, **work.trafficStats**. Drop the **Name\_Code** column from the output table.

	ParkCode	Year	Month	MonthCount	ParkName	Region	Type
1	ABLI	2016	1	2,159	Abraham Lincoln Birt...	Southeast	National Histori...
2	ABLI	2016	2	2,057	Abraham Lincoln Birt...	Southeast	National Histori...
3	ABLI	2016	3	4,630	Abraham Lincoln Birt...	Southeast	National Histori...
4	ABLI	2016	4	6,602	Abraham Lincoln Birt...	Southeast	National Histori...
5	ABLI	2016	5	6,459	Abraham Lincoln Birt...	Southeast	National Histori...
6	ABLI	2016	6	7,739	Abraham Lincoln Birt...	Southeast	National Histori...
7	ABLI	2016	7	14,016	Abraham Lincoln Birt...	Southeast	National Histori...
8	ABLI	2016	8	10,237	Abraham Lincoln Birt...	Southeast	National Histori...





### Level 2

#### 4. Writing Matches and Nonmatches to Separate Tables



The **pg2.np\_2016** table contains monthly public use statistics from the National Park Service for parks by **ParkCode**. The **pg2.np\_codelookup** table contains the full name for each **ParkCode** value. Create a table, **parkStats**, that contains all matching rows between the two tables. Create a second table, **parkOther**, that contains **ParkCode** values *not* found in the **np\_2016** table.

- Determine the name of the common column in the **pg2.np\_codelookup** and **pg2.np\_2016** tables.
- Create a new program. Ensure that the data in both tables is sorted by the matching column.
- Using a DATA step, merge the **pg2.np\_codelookup** and **pg2.np\_2016** tables to create two new tables:
  - The **work.parkStats** table should contain only **ParkCode** values that are in the **np\_2016** table. Keep only the **ParkCode**, **ParkName**, **Year**, **Month**, and **DayVisits** columns.
  - The **work.parkOther** table should contain all other rows. Keep only the **ParkCode** and **ParkName** columns.

**work.parkStats**

	 ParkCode	 Year	 Month	 DayVisits	 ParkName
1	ABLI	2016	1	5,954	Abraham Lincoln Birthplace National Historical Park
2	ABLI	2016	2	5,721	Abraham Lincoln Birthplace National Historical Park
3	ABLI	2016	3	13,005	Abraham Lincoln Birthplace National Historical Park
4	ABLI	2016	4	23,676	Abraham Lincoln Birthplace National Historical Park
5	ABLI	2016	5	23,890	Abraham Lincoln Birthplace National Historical Park
6	ABLI	2016	6	29,233	Abraham Lincoln Birthplace National Historical Park
7	ABLI	2016	7	52,771	Abraham Lincoln Birthplace National Historical Park
8	ABLI	2016	8	28,461	Abraham Lincoln Birthplace National Historical Park

**work.parkOther**






	 ParkCode	 ParkName
1	ADNM	Adams National Memorial
2	AFAM	African American Civil War Memorial
3	AIVC	Anchorage Interagency Visitor Center
4	AKLO	Alaska Public Lands Info Ctr - Fairbanks
5	AKR	Alaska Region
6	AKRO	Alaska Region Office
7	AKSO	Alaska Support Office
8	ALAC	Alaska Wild Diver

**Challenge****5. Combining Multiple Tables with Different Matching Columns**

Merge the **pg2.np\_codelookup**, **pg2.np\_final**, and **pg2.np\_species** tables to create a table that contains information about the common birds found at locations that have more than 5,000,000 visitors a year.

- Open the **p205p05.sas** program in the practices folder. The first three steps sort and merge the **pg2.np\_codelookup** and **pg2.np\_final** tables. Highlight the first two PROC SORT steps and the DATA step and run the selected code. Examine the **highuse** table.
- Add a subsetting IF statement in the DATA step to output only the rows in which **DayVisits** is greater than or equal to 5,000,000. Highlight the DATA step and run the selected code. Why must you use IF instead of a WHERE statement?
- Run the final PROC SORT step to sort and subset the **pg2.np\_species** table. Compare the columns in the output **birds** table with the **highuse** table to determine the matching column.
- Add a PROC SORT step to sort the **highuse** table by the matching column in the **birds** table.

- e. Add a DATA step to merge the **highuse** and **birds** tables and create a table named **birds\_largepark**. Include in the output table only **ParkCode** values that are in the **highuse** table.

	 Species_ID	 ParkCode	 Scientific_Name	 Common_Names	 ParkName
1	GRCA-1106	GRCA	Accipiter cooperii	Cooper's Hawk	Grand Canyon National Park
2	GRCA-1107	GRCA	Accipiter gentilis	Northern Goshawk	Grand Canyon National Park
3	GRCA-1108	GRCA	Accipiter striatus	Sharp-Shinned Hawk	Grand Canyon National Park
4	GRCA-1110	GRCA	Buteo albonotatus	Zone-Tailed Hawk	Grand Canyon National Park
5	GRCA-1111	GRCA	Buteo jamaicensis	Red-Tailed Hawk	Grand Canyon National Park
6	GRCA-1120	GRCA	Cathartes aura	Turkey Vulture	Grand Canyon National Park
7	GRCA-1121	GRCA	Gymnogyps californianus	California Condor	Grand Canyon National Park

**End of Practices**