

Practice

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

Level 1

1. Using the LARGEST and ROUND Functions

The **pg2.np_lodging** table contains statistics for lodging from 2010 through 2017. Each column name starts with **CL** followed by the year. (For example, **CL2010** contains the number of nights stayed in 2010 for that park.)

- **a.** Open the **p203p01.sas** program from the **practices** folder. Highlight the PROC PRINT step and run the selected code. Examine the column names and the 10 rows printed from the **np lodging** table.
- **b.** Use the LARGEST function to create three new columns (**Stay1**, **Stay2**, and **Stay3**) whose values are the first, second, and third highest number of nights stayed from 2010 through 2017.

Note: Use column list abbreviations to avoid typing each column name.

- **c.** Use the MEAN function to create a column named **StayAvg** that is the average number of nights stayed for the years 2010 through 2017. Use the ROUND function to round values to the nearest integer.
- **d.** Add a subsetting IF statement to output only rows with **StayAvg** greater than zero. Highlight the DATA step and run the selected code.

	Park	Stay1	Stay2	Stay3	StayAvg
1	Badlands NP	9,875	9,646	9,474	8,047
2	Big Bend NP	50,747	48,280	47,378	45,274
3	Big South Fork NRRA	5,207	3,703	3,079	2,782
4	Blue Ridge PKWY	53,688	50,257	49,906	45,290
5	Bryce Canyon NP	56,844	54,525	53,792	52,068
6	Buffalo NR	3,614	3,150	2,782	2,406
7	Canyon de Chelly NM	27,363	25,146	23,259	18,289
	C C INC	4.220	4.170	4 1 4 1	2.742

Level 2

2. Working with Date/Time Values

The **pg2.np_hourlyrain** table contains hourly rain amounts for the Panther Junction, TX, station located in Big Bend National Park. The **DateTime** column contains date/time values.

- a. Open the p203p02.sas program from the practices folder. Run the program and notice that each row includes a datetime value and rain amount. The MonthlyRainTotal column represents a cumulative total of Rain for each value of Month.
- **b.** Uncomment the subsetting IF statement to continue processing a row only if it is the last row within each month. After the subsetting IF statement, create the following new columns:
 - 1) **Date** the date portion of the **DateTime** column
 - 2) **MonthEnd** the last day of the month

c. Format Date and MonthEnd as a date value and keep only the StationName, MonthlyRainTotal, Date, and MonthEnd columns.

	StationName	MonthlyRainTotal	₩ Date	MonthEnd
1	PANTHER JUNCTION TX	0.3	24JAN2017	31JAN2017
2	PANTHER JUNCTION TX	0	01FEB2017	28FEB2017
3	PANTHER JUNCTION TX	0	01MAR2017	31MAR2017
4	PANTHER JUNCTION TX	0	16APR2017	30APR2017
5	PANTHER JUNCTION TX	2	27MAY2017	31MAY2017
C	DANTHED HINCTION TV	12	20 H IN 2017	20 H IN 2017

Challenge

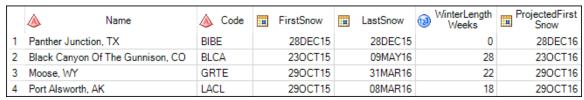
3. Creating Projected Date Values

The **pg2.np_weather** table contains weather-related statistics for locations in four national parks. Determine the number of weeks between the first and last snowfall in each park for the 2015-2016 winter season.

- a. Open the p203p03.sas program from the practices folder. The program contains a PROC SORT step that creates the winter2015_2016 table. This table contains rows with dates with some snowfall between October 1, 2015, and June 1, 2016, sorted by Code and Date. Only the Name, Code, Date, and Snow columns are kept.
- **b.** Modify the DATA step to create the **snowforecast** table based on the following specifications:
 - 1) Process the data in groups by Code.
 - For the first row within each Code group, create a new column named FirstSnow that is the date of the first snowfall for that code.
 - For the last row within each Code group, do the following:
 - a) Create a new column named **LastSnow** that is the date of the first snowfall for that code.
 - b) Create a new column named **WinterLengthWeeks** that counts the number of full weeks between the **FirstSnow** and **LastSnow** dates.
 - c) Create a new column named **ProjectedFirstSnow** that is the same day of the first snowfall for the next year.
 - d) Output the row to the new table.

Note: Be sure to retain the values of **FirstSnow** in the PDV so that they will be included with the rows that are in the output table.

 Apply the DATE7. format to the FirstSnow, LastSnow, and ProjectedFirstSnow columns and drop the Date and Snow columns.



End of Practices