

Using Arrays to Restructure a Table

The **pg2.np_lodging_array** table contains statistics for stays at lodging facilities in 2015, 2016, and 2017. Create a table that contains two rows for each year (2015, 2016, and 2017), corresponding to the lodge counts for individual parks.

Note: An array enables you to perform the same action on a group of similar columns. In this example, **Lodge2015**, **Lodge2016**, and **Lodge2017** are all numeric columns that represent the same measure for different years. Using an array with a DO loop can simplify repetitive code. Access SAS Help for more information about arrays.

1. Examine the **np_lodging_array** table. In addition to **ParkName**, notice that there are three columns containing visitor lodging counts. **Lodge2015**, **Lodge2016**, and **Lodge2017** contain counts for visitors staying at lodges.
2. Open the **p207p03.sas** program from the **practices** folder. Submit the program and confirm that the output table stacks the values of the **Lodge** columns.
3. Modify the DATA step to use an array to simplify the repetitive processing.
 - Delete all statements between the FORMAT and RUN statements.
 - Add the following ARRAY statement after the FORMAT statement to define an array named **Lodge** that includes the columns **Lodge2015**, **Lodge2016**, and **Lodge2017**.
`array Lodge[2015:2017] Lodge2015-Lodge2017;`
 - Add a DO loop with an index variable, **Year**, that loops three times for the values 2015 to 2017.
 - Inside the DO loop, perform the following actions:
 - Create a column named **Stays** that will be equal to the value of each column in the **Lodge** array. **Note:** The array name can be used in combination with the DO loop index variable to represent each column in the array. For example, **Lodge[Year]** is replaced by **Lodge[2015]** the first time through the DO loop. **Lodge[2015]** represents the first column in the lodge array, which is **Lodge2015**.
 - Output the row to the new table.
 - Submit the program and verify that the table includes three rows for each value of **ParkName**.

```
data np_lodge_stack;
  set pg2.np_lodging_array;
  keep ParkName Year Stays;
  format Stays comma12.;
  array Lodge[2015:2017] Lodge2015-Lodge2017;
  do Year=2015 to 2017;
    Stays=Lodge[Year];
    output;
  end;
run;
```

4. How many rows are in the **np_lodge_stack** table?

The **np_lodge_stack** table has 147 rows.

