Solution

SP4R03s03.sas

Use the **Cars** data set in the **SP4R** library to complete this exercise.

1. **Creating and Using a SAS Function**

   a. Create a function called **tier** with a single numeric argument, which returns a character value. The function should return values according to the following table:

input	output
<20	Low
20-29	Medium
>30	High

   ```
   proc fcmp outlib=work.functions.newfuncs;
      function tier(val) $;
         length newval $ 6;
         if val < 20 then newval = 'Low';
         else if val <30 then newval='Medium';
          else newval='High';
         return(newval);
      endsub;
   quit;
   ```

   b. Use the function that you created to create a new variable in the **Cars** data set. Name the new variable **mpg_quality2** and name the argument of the function **tier** as **mpg_average**. As a result, **mpg_quality** and **mpg_quality2** are identical.

   ```
   options cmplib=work.functions;
   data sp4r.cars;
      set sp4r.cars;
      mpg_quality2=tier(mpg_average);
   run;
   ```

   c. Print observations 65 through 70 for the variables **mpg_average**, **mpg_quality**, and **mpg_quality2** to ensure that the variable is created.

   ```
   proc print data=sp4r.cars (firstobs=65 obs=70);
      var mpg_average mpg_quality mpg_quality2;
   run;
   ```

   ```
                         mpg_      mpg_       mpg_
                 Obs    average   quality    quality2

                 65      16.0     Low        Low
                 66      18.5     Low        Low
                 67      20.5     Medium     Medium
                 68      31.0     High       High
                 69      31.0     High       High
   ```