Solution

SP4R04s01.sas

1. **Using the DO loop and Creating Random Data Sets**

   a. Navigate to the **SAS RAND function** page and choose a few functions to practice generating random numbers. Create a data table with at least two variables of random numbers and at least 10 observations. Be sure to use a random seed of your choice.

```
data sp4r.random;
   call streaminit(123);
   do i=1 to 10;
      rt = rand('T',5);
      rf = rand('F',3,4);
      ru = int(rand('Uniform')*10);
      output;
   end;
run;

proc print data=sp4r.random;
run;
```

Obs	i	rt	rf	ru
1	1	0.15554	0.57611	3
2	2	-0.71020	0.15053	2
3	3	-0.02583	0.04516	9
4	4	0.73364	0.25261	7
5	5	0.18336	0.88293	4
6	6	0.13730	1.50425	9
7	7	0.90893	2.18254	9
8	8	0.04611	0.10342	8
9	9	2.41523	0.55436	5
10	10	0.20044	1.59396	1

   b. Create a new data table with the same random variables that you specified from the previous step. Create a variable called **Class** that groups the first five observations into class 1 and the second five into class 2. Drop the nested DO loop index variable from the data table and add a sequence from 1 to 10. Print the data upon completion.

```
data sp4r.random (drop=j);
   call streaminit(123);
   do class=1 to 2;
      do j=1 to 5;
         sequence + 1;
         rt = rand('T',5);
         rf = rand('F',3,4);
         ru = int(rand('Uniform')*10);
         output;
      end;
   end;
run;

proc print data=sp4r.random;
run;
```

Obs	class	sequence	rt	rf	ru
1	1	1	0.15554	0.57611	3
2	1	2	-0.71020	0.15053	2
3	1	3	-0.02583	0.04516	9
4	1	4	0.73364	0.25261	7
5	1	5	0.18336	0.88293	4
6	2	6	0.13730	1.50425	9
7	2	7	0.90893	2.18254	9
8	2	8	0.04611	0.10342	8
9	2	9	2.41523	0.55436	5
10	2	10	0.20044	1.59396	1

c. Run the SAS code below. What do you notice?

```
data test;
   do i=1 to 2;
      output;
   end;
run;

proc print data=test;
run;

data test;
   set test;
   do j=1 to 5;
      output;
   end;
run;

proc print data=test;
run;
```

Obs	i
1	1
2	2

Obs	i	j
1	1	1
2	1	2
3	1	3
4	1	4
5	1	5
6	2	1
7	2	2
8	2	3
9	2	4
10	2	5

The loop iterates through each observation in the data table.