## Calling R from SAS

Use the randomForest package in R. Send the **birth** data set to R. Use the randomForest() function to create a predictive model, and return the results to SAS.

1. Invoke SAS/IML and send the **birth** data set in the **Work** library to R. Name the data frame **birth** as well.

```
proc iml;
   call ExportDataSetToR("work.birth","birth");
```

2. Write your R code between the SUBMIT and ENDSUBMIT statements. Use the randomForest package in R and the randomForest() function to estimate a model with **BWT** as the dependent variable and **Smoke**, **HT**, **LWT**, and **PTL** as independent variables. Use the SUMMARY statement to print the details of the analysis to the console. Finally, create a data frame with the actual and predicted values, given the model, and name the variables **Actual** and **Predicted**.

```
      submit / r;
         library(randomForest)
         rf = randomForest(BWT ~ SMOKE + HT + LWT + PTL,
               data=birth,ntree=200,importance=TRUE)
         summary(rf)
         actual = birth$BWT
         pred = predict(rf,data=birth)
         actual.pred = cbind(actual,pred)
         colnames(actual.pred) <- c("Actual","Predicted")
      endsubmit;
```

```
                Length Class  Mode
call              5    -none- call
type              1    -none- character
predicted       189    -none- numeric
mse             200    -none- numeric
rsq             200    -none- numeric
oob.times       189    -none- numeric
importance        8    -none- numeric
importanceSD      4    -none- numeric
localImportance   0    -none- NULL
proximity         0    -none- NULL
ntree             1    -none- numeric
mtry              1    -none- numeric
forest           11    -none- list
coefs             0    -none- NULL
y               189    -none- numeric
test              0    -none- NULL
inbag             0    -none- NULL
terms             3    terms  call
```

The output generated in the R console was printed in the SAS Results page.

3. Return the data frame to a SAS data set with the name **Rdata**.

```
   call ImportDataSetFromR("Rdata","actual.pred");
quit;
```

If you are running SAS Studio in client-server mode, you do ***not*** have access to the **Work** library on a point-and-click basis. You must use the PRINT procedure to view the results.