//Printing Car Mpg Data  
proc print data=work.casestudy1;  
run;

// Generate Scatter Plot  
proc sgscatter data=WORK.casestudy1;  
matrix mpg cylinders size hp weight accel eng\_type / diagonal = (histogram);  
run;

//Multiple Imputations  
ods select misspattern;  
PROC MI data=WORK.casestudy1 nimpute=0;  
var mpg cylinders size hp weight accel eng\_type;  
run;  
quit;  
// Regression  
title ' Predicting MPG: Initial Analysis';  
PROC REG data=WORK.casestudy1;  
model mpg= cylinders size hp weight accel eng\_type;  
run;  
quit;  
// MI Analysis  
PROC MI data=WORK.casestudy1 nimpute=5  
out= miout seed=35399;  
var mpg cylinders size hp weight accel eng\_type;  
run;  
  
// Regression on the imputed data  
title ' PROC Reg imputation output ';  
PROC REG data=miout outest= outreg  
 covout;  
 model mpg=cylinders size hp weight accel eng\_type;  
by \_imputation\_;  
run;  
// Analysis of the imputed data   
  
PROC MIANALYZE data=outreg;  
modeleffects cylinders size hp weight accel eng\_type Intercept;  
run;  
  
proc sgscatter data=outreg;  
matrix mpg cylinders size hp weight accel eng\_type / diagonal = (histogram);  
run;  
  
// Mixed Imputation  
proc mixed data=WORK.casestudy1 namelen=25;  
class mpg cylinders size hp weight accel eng\_type;  
model mpg=cylinders|size |hp |weight |accel| eng\_type;  
run;