Demo: Fitting a Multiple Linear Regression Model Using the Linear Regression Task

Perform a linear regression of **SalePrice** with **Lot_Area** and **Basement_Area** as predictor variables.

1. In the Navigation pane, select **Tasks and Utilities**.
2. Expand **Tasks**.
3. Expand **Statistics** and select the **Linear Regression** task.
4. Select the **stat1.ameshousing3** table.
5. Assign **SalePrice** as the Dependent variable, and **Basement_Area** and **Lot_Area** as the Continuous variables.
6. On the MODEL tab, click the **Edit** button to open the Model Effects Builder. Add **Basement_Area** and **Lot_Area** to Model Effects, and click **OK** to close the Model Effects Builder.
7. On the OPTIONS tab, expand **Scatter Plots** and clear the **Observed values by predicted values** check box.
8. Run the code.

Generated Code

```
ods noproctitle;
ods graphics / imagemap=on;

proc reg data=STAT1.AMESHOUSING3 alpha=0.05 plots(only)=(diagnostics residuals);
        model SalePrice=Basement_Area Lot_Area /;
        run;
quit;
```

Note: Additional plots can be obtained when you submit the code below. It is available in the **st103d03.sas** file.

```
/*st103d03.sas*/ /*Part B*/
proc glm data=STAT1.ameshousing3
     plots(only)=(contourfit);
   model SalePrice=Basement_Area Lot_Area;
   store out=multiple;
   title "Model with Basement Area and Gross Living Area";
run;

/*st103d03.sas*/ /*Part C*/
proc plm restore=multiple plots=all;
   effectplot contour (y=Basement_Area x=Lot_Area);
   effectplot slicefit(x=Lot_Area sliceby=Basement_Area=250 to 1000 by 250);
run;
```