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Practice: Using the Linear Regression Task to Fit a Simple Linear Regression Model

Using the **bodyfat2** data set, perform a simple linear regression model.

1. Use the Linear Regression task to perform a simple linear regression model with **PctBodyFat2** as the response variable and **Weight** as the predictor.

    1. In the Navigation pane, select **Tasks and Utilities**.
    2. Expand **Tasks**.
    3. Expand **Statistics** and open the **Linear Regression** task.
    4. Select the **stat1.bodyfat2** table.
    5. Assign **PctBodyFat2** to the Dependent variable role.
    6. Assign **Weight** to the Continuous variables role.
    7. On the MODEL tab, click the **Edit this model** icon to specify the Model effects.
    8. In the Model Effects Builder window, select **Weight** and click **Add** under Single Effects.
    9. Click **OK** to close the Model Effects Builder window..
    10. On the OPTIONS tab, under PLOTS, expand **Scatter Plots** and clear the check box **Observed values by predicted values**.
    11. Run the task.

    Here are the results.

2. What is the value of the *F* statistic and the associated *p*-value? How would you interpret this in connection with the null hypothesis?

    The value of the *F* statistic is 150.03 and the *p*-value is <.001. Therefore, you would reject the null hypothesis of no relationship, or a zero slope for **Weight**.

3. Write the predicted regression equation.

    The prediction regression equation is **PctBodyFat2** = -12.05158 + 0.17439 * **Weight**.

4. What is the value of R-square? How would you interpret this?

    The R-square value of 0.3751 can be interpreted to mean that 37.51% of the variability in **PctBodyFat2** can be explained by **Weight**.

Hide Solution