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Demo: Fitting a Model with Categorical Predictors

In this example, we again fit a model for Impurity using Fit Model. But this time, we also add the categorical predictors to the model.

First, we add Impurity as the Y variable.

Adding the categorical predictors to the model is no different than adding continuous predictors. We simply select the variables and click Add.

in an earlier video, we discussed options for coding categorical predictors. Recall that JMP applies -1/1 effect coding behind the scenes.

When we run the model, JMP displays the coefficients for the categorical predictors in the Parameter Estimates table.

We have three levels of Reactor, so there are two coefficients for Reactor.

We have two shifts, so there is one coefficient for Shift.

When we turn on the prediction expression, JMP displays the full equation for the model.

The Prediction Profiler enables us to easily see how changes in the value of the categorical predictors change the predicted response.

For Reactor, holding all else constant, as we change the reactor from 1 to 2, the predicted mean for Impurity increases by approximately 0.2 units. We can see this difference in the prediction expression when we compare the values for Reactor 1 and Reactor 2.

To view the 0/1 dummy-coded parameter estimates, select Estimates and then Indicator Parameterization Estimates, from the top red triangle.

Let's look at the dummy-coded estimate for Shift. With dummy coding, we compare the average Impurity for first shift to the average Impurity for second shift, holding everything else constant. We can easily see that the average Impurity for first shift is approximately 0.1 unit higher than the second shift. But this difference is not significant.

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