List 05. Categorical regressors

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#**1**. For the dataset `Diamond` consider a regression

`log(price) on carat, carat`^{2}`, certification`.

1. Evaluate descriptive statistics for the variables in the model
2. Draw a scatter plot `price vs carat` with coloring depending on certification
3. Draw a scatter plot `log(price) vs carat` with coloring depending on certification
4. Fit the regression
5. Interpret coefficient of the model
6. Test the significance of `certification`

#**2**. For the dataset `Diamond` consider a regression

`log(price) on carat, carat`^{2}`, colour`.

1. Evaluate descriptive statistics for the variables in the model
2. Draw a scatter plot `price vs carat` with coloring depending on colour
3. Draw a scatter plot `log(price) vs carat` with coloring depending on colour
4. Fit the regression

5. Interpret coefficient of the model
6. Test the significance of `colour`

#**3**. For the dataset `Diamond` consider a regression

`log(price) on carat, carat`^{2}`, clarity, certification`.

1. Evaluate descriptive statistics for the variables in the model
2. Draw a scatter plot `price vs carat` with coloring depending on clarity and point style depending on certification
3. Draw a scatter plot `log(price) vs carat` with coloring depending on clarity and point style depending on certification
4. Fit the regression
5. Interpret coefficient of the model
6. Test the significance of `clarity & certification`

#**4**. For the dataset `diamonds` consider a regression

`log(price) on carat, carat`^{2}`, color, cut, x, y, z`.

1. Evaluate descriptive statistics for the variables in the model
2. Draw a scatter plot `price vs carat` with coloring depending on color and point style depending on cut
3. Draw a scatter plot `log(price) vs carat` with coloring depending on color and point style depending on cut
4. Fit the regression
5. Interpret coefficient of the model
6. Test the significance of `cut & color`

#**5**. For the dataset `diamonds` consider a regression

`log(price) on carat, carat`^{2}`, clarity, cut, x, y, z`.

1. Evaluate descriptive statistics for the variables in the model
2. Draw a scatter plot `price vs carat` with coloring depending on clarity and point style depending on cut
3. Draw a scatter plot `log(price) vs carat` with coloring depending on clarity and point style depending on cut
4. Fit the regression
5. Interpret coefficient of the model
6. Test the significance of `certification`