Exploratory Data Analysis for Machine Learning (EDA) - MODULE 3 - Introduction - QUIZ 3 - Exploratory Data Analysis and Feature Engineering

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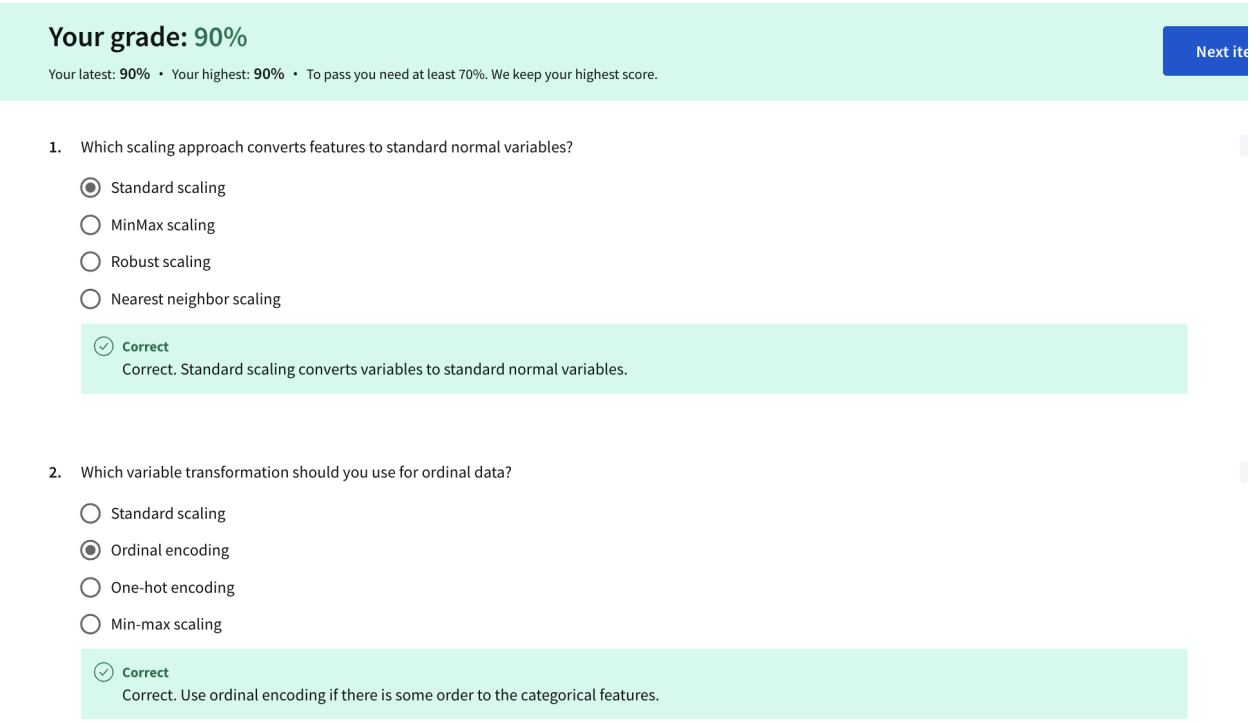

Your grade: 90%

Your latest: **90%** • Your highest: **90%** • To pass you need at least 70%. We keep your highest score.

Next ite

1. Which scaling approach converts features to standard normal variables?

- (•) Standard scaling
- ( ) MinMax scaling
- ( ) Robust scaling
- ( ) Nearest neighbor scaling

Correct
Correct. Standard scaling converts variables to standard normal variables.

2. Which variable transformation should you use for ordinal data?

- ( ) Standard scaling
- (•) Ordinal encoding
- ( ) One-hot encoding
- ( ) Min-max scaling

Correct
Correct. Use ordinal encoding if there is some order to the categorical features.

3. What are polynomial features?

- ○ They are lower order relationships in the data.
- ○ They are represented by linear relationships in the data.
- ◉ They are higher order relationships in the data.
- ○ They are logistic regression coefficients.

Correct
Correct. Polynomial features are estimated by higher order polynomials in a linear model, like squared, cubed, etc.

4. What does Boxcox transformation do?

- ○ It makes the data more left skewed
- ○ It makes the data more right skewed.
- ○ It transforms categorical variables into numerical variables.
- ◉ It transforms the data distribution into more symmetrical bell curve

Correct
Correct. Boxcox is one of the ways we can transform our skewed dataset to be more normally distributed.

5. Select three important reasons why EDA is useful.

- ○ To analyze data sets, to determine the main characteristics of data sets, and to use sampling to examine data
- ◉ To determine if the data makes sense, to determine whether further data cleaning is needed, and to help identify patterns and trends in the data
- ○ To utilize summary statistics, to create visualizations, and to identify outliers
- ○ To examine correlations, to sample from dataframes, and to train models on random samples of data

Correct
Correct. EDA helps us analyze data to summarize its main characteristics.

6. What assumption does the linear regression model make about data?

- ○ This model assumes an addition of each one of the model parameters multiplied by a coefficient.
- ○ This model assumes a transformation of each parameter to a linear relationship.
- ◉ This model assumes a linear relationship between predictor variables and outcome variables.
- ○ This model assumes that raw data in data sets is on the same scale.

Correct
Correct. The linear regression model assumes a linear relationship between predictor and outcome variables.

7. What is skewed data?

- ◉ Data that is distorted away from normal distribution; may be positively or negatively skewed.
- ○ Raw data that has undergone log transformation.
- ○ Raw data that may not have a linear relationship.
- ○ Data that has a normal distribution.

Correct
Correct. Often raw data, both the features and the outcome variable, can be negatively or positively skewed.

8. Select the two primary types of categorical feature encoding.

- ○ Log and polynomial transformation
- ○ Encoding and scaling
- ◉ One-hot encoding and ordinal encoding
- ○ Nominal encoding and ordinal encoding

Incorrect
Review the Feature Encoding video.

9. Which scaling approach puts values between zero and one?

- ◉ Min-max scaling
- ○ Standard scaling
- ○ Robust scaling
- ○ Nearest neighbor scaling

Correct
Correct. Min-max scaling converts variables to continuous variables in the (0, 1) interval by mapping minimum values to 0 and maximum values to 1.

10. Which variable transformation should you use for nominal data with multiple different values within the feature?

- ○ Standard scaling
- ◉ One-hot encoding
- ○ Ordinal encoding
- ○ Min-max scaling

Correct
Correct. Use one-hot encoding if there are multiple different values within a feature.