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NPTEL (<https://swayam.gov.in/explorer?ncCode=NPTEL>) » Data Science For Engineers (course)



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Course outline

How does an NPTEL
online course work? ()

Setup Guide ()

Pre Course Material ()

Week 6: Assignment 6

The due date for submitting this assignment has passed.

Due on 2023-09-06, 23:59 IST.

As per our records you have not submitted this assignment.

For the following set of questions 1, 2, 3, 4, 5 use the dataset bonds.txt (https://drive.google.com/file/d/1LKERDi3rCD7hmlpIOiL_9Ddo74HO0qtp/view?usp=sharing). This dataset contains 2 variables, Coupon rate and Bid price.

1) What is the relationship between the variables, Coupon rate and Bid price?

1 point

- ☐ Coupon rate = $99.95 + 0.24 * \text{Bid price}$
- ☐ Bid price = $99.95 + 0.24 * \text{Coupon rate}$
- ☐ Bid price = $74.7865 + 3.066 * \text{Coupon rate}$



Week 0 ()

Week 1 ()

Week 2 ()

Week 3 ()

Week 4 ()

Week 5 ()

Week 6 ()

- ☐ Module : Predictive Modelling (unit? unit=72&lesson=73)
- ☐ Linear Regression (unit? unit=72&lesson=74)
- ☐ Model Assessment (unit? unit=72&lesson=75)
- ☐ Diagnostics to Improve Linear Model Fit (unit? unit=72&lesson=76)
- ☐ Simple Linear Regression Model Building (unit? unit=72&lesson=77)
- ☐ Simple Linear Regression Model Assessment (unit? unit=72&lesson=78)

- ☐ Coupon rate = $74.7865 + 3.066 * \text{Bid price}$

No, the answer is incorrect.

Score: 0

Accepted Answers:

$\text{Bid price} = 74.7865 + 3.066 * \text{Coupon rate}$

2) Choose the correct option that best describes the relation between the variables Coupon rate and Bid price in the given data. **1 point**

- ☐ Strong positive correlation
- ☐ Weak positive correlation
- ☐ Strong negative correlation
- ☐ Weak negative correlation

No, the answer is incorrect.

Score: 0

Accepted Answers:

Strong positive correlation

3) What is the R-Squared value of the model obtained in Q1? **1 point**

- ☐ 0.2413
- ☐ 0.12
- ☐ 0.7516
- ☐ 0.5

No, the answer is incorrect.

Score: 0

Accepted Answers:

0.7516

4) What is the adjusted R-Squared value of the model obtained in Q1? **1 point**

- ☐ 0.22
- ☐ 0.7441
- ☐ 0.088



☐ Simple Linear Regression Model Assessment (Continued) (unit? unit=72&lesson=79)

☐ Multiple Linear Regression (unit? unit=72&lesson=80)

☐ Dataset (unit? unit=72&lesson=81)

☐ FAQ (unit? unit=72&lesson=82)

☐ Practice: Week 6: Assignment 6 (Non Graded) (assessment? name=146)

☐ **Quiz: Week 6: Assignment 6 (assessment? name=174)**

☐ Week 6 Feedback Form : Data Science For Engineers (unit? unit=72&lesson=158)

Week 7 ()

Week 8 ()

Text Transcripts ()

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☐ 0.5

No, the answer is incorrect.

Score: 0

Accepted Answers:

0.7441

5) Based on the model relationship obtained from Q1, what is the residual error obtained while calculating the bid price of a bond with coupon rate of 3?

1 point

☐ 10.5155

☐ -10.5155

☐ 6.17

☐ 0

No, the answer is incorrect.

Score: 0

Accepted Answers:

10.5155

6) State whether the following statement is True or False.
Covariance is a better metric to analyze the association between two numerical variables than correlation.

1 point

☐ True

☐ False

No, the answer is incorrect.

Score: 0

Accepted Answers:

False

7) If R^2 is 0.6, SSR=200 and SST=500, then SSE is

1 point

☐ 500

☐ 200

☐ 300



Books ()

Problem Solving
Session - July 2023 ()

☐ None of the above

No, the answer is incorrect.

Score: 0

Accepted Answers:

300

8) Linear Regression is an optimization problem where we attempt to minimize

1 point

☐ SSR (residual sum-of-squares)

☐ SST (total sum-of-squares)

☐ SSE (sum-squared error)

☐ Slope

No, the answer is incorrect.

Score: 0

Accepted Answers:

SSE (sum-squared error)

9) The model built from the data given below is $Y = 0.2x + 60$. Find the values for R^2 and Adjusted R^2 .

1 point

X	80	75	85	70	65
Y	85	70	80	95	70

Table 1.2.Q

☐ R^2 is 0.022 and Adjusted R^2 is -0.303

☐ R^2 is 0.022 and Adjusted R^2 is -0.0303

☐ R^2 is 0.022 and Adjusted R^2 is 0.303

☐ None of the above



No, the answer is incorrect.

Score: 0

Accepted Answers:

R^2 is 0.022 and Adjusted R^2 is -0.303

10) Identify the parameters β_0 and β_1 that fits the linear model $\beta_0 + \beta_1 x$ using the following information: total sum of squares of X , $SS_{XX} = 52.53$, $SS_{XY} = 52.01$, mean of X , $\bar{X} = 4.46$, and mean of Y , $\bar{Y} = 6.32$. **1 point**

- ☐ 1.9 and 0.99
- ☐ 10.74 and 1.01
- ☐ 4.42 and 1.01
- ☐ None of the above

No, the answer is incorrect.

Score: 0

Accepted Answers:

1.9 and 0.99

