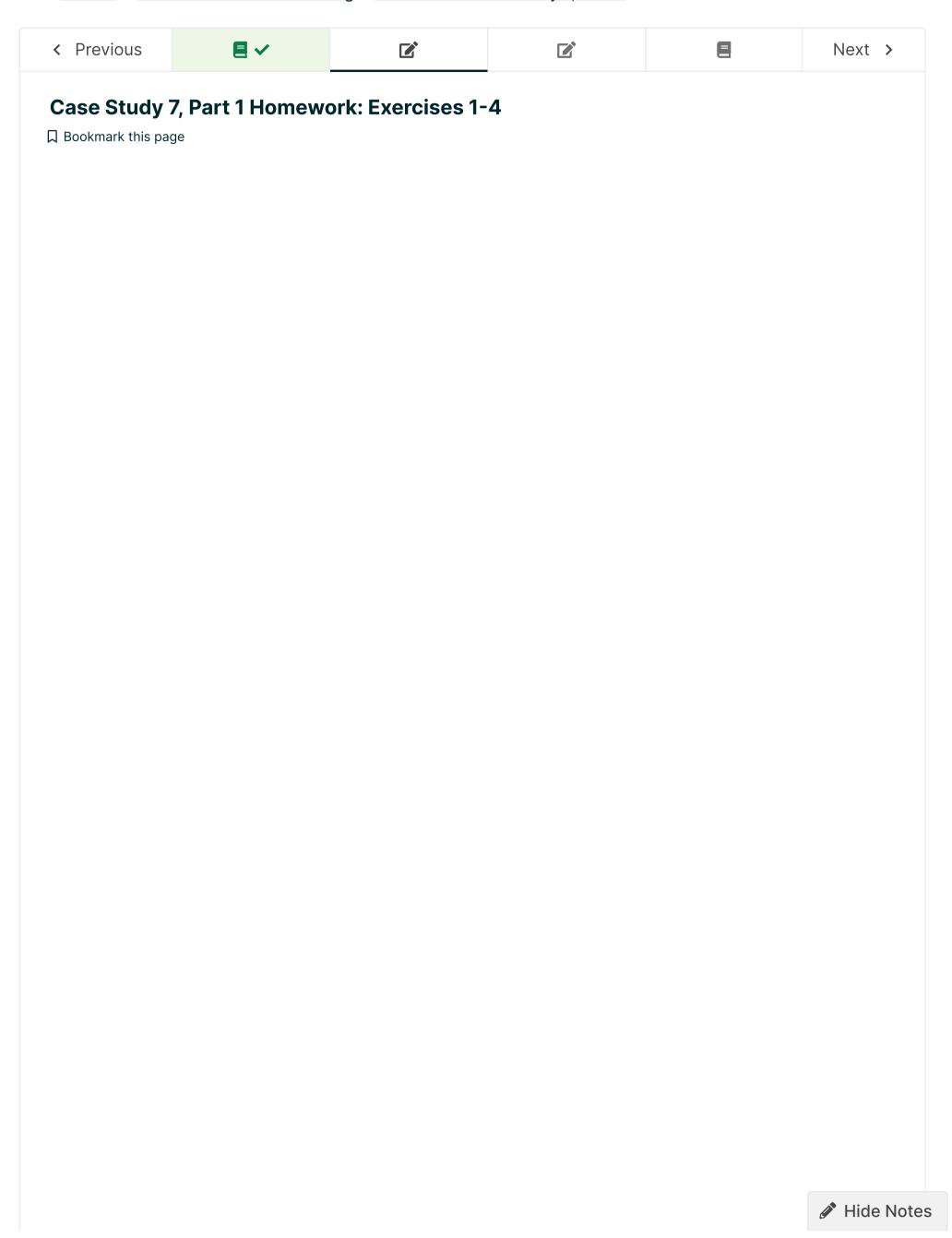
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☆ Course / Week 5: Statistical Learning / Homework: Case Study 7, Part 1



Homework due Jul 14, 2021 05:59 +06

Exercise 1

1/1 point (graded)

First, we will import several libraries. **scikit-learn** (sklearn) contains helpful statistical models, and we'll use the matplotlib.pyplot library for visualizations. Of course, we will use numpy and pandas for data manipulation throughout.

Instructions

Read and execute the given code, then call df.head() to take a look at the data.

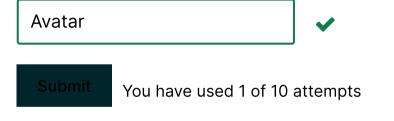
Here's the import code:

```
import pandas as pd
import numpy as np

from sklearn.model_selection import cross_val_predict
from sklearn.linear_model import LinearRegression
from sklearn.linear_model import LogisticRegression
from sklearn.ensemble import RandomForestRegressor
from sklearn.ensemble import RandomForestClassifier
from sklearn.metrics import accuracy_score
from sklearn.metrics import r2_score
import matplotlib.pyplot as plt

df = pd.read_csv("https://courses.edx.org/asset-v1:HarvardX+PH526x+2T2019+type@asset+block@movie_data.csv"
# Enter code here.
```

What is the title of the first movie in this dataset? Enter the title exactly as it appears.



✓ Correct (1/1 point)

Exercise 2

1/1 point (graded)

In Exercise 2, we will define the regression and classification outcomes. Specifically, we will use the revenue column as the target for regression. For classification, we will construct an indicator of profitability for each movie.

Instructions

- Create a new column in df called profitable, defined as 1 if the movie revenue (revenue) is greater than the movie budget (budget), and 0 otherwise.
- Next, define and store the outcomes we will use for regression and classification. Define regression_target as the string 'revenue'. Define classification_target as the string 'profitable'.



How many movies in this dataset are defined as profitable (value 1)? 2585 2585 You have used 1 of 10 attempts Correct (1/1 point) Exercise 3 1/1 point (graded) For simplicity, we will proceed by analyzing only the rows without any missing data. In Exercise 3, we will remove rows with any infinite or missing values. **Instructions** • Use df.replace() to replace any cells with type np.inf or -np.inf with np.nan. Drop all rows with any np.nan values in that row using df.dropna(). Do any further arguments need to be specified in this function to remove rows with any such values? How many movies are left in the dataset after dropping any rows with infinite or missing values? 1406 1406 You have used 1 of 10 attempts ✓ Correct (1/1 point) Exercise 4 1/1 point (graded) Many of the variables in our dataframe contain the names of genre, actors/actresses, and keywords. Let's add indicator columns for each genre.

Instructions

- Determine all the genres in the genre column. Make sure to use the strip() function on each genre to remove trailing characters.
- Next, include each listed genre as a new column in the dataframe. Each element of these genre columns should be 1 if the movie belongs to that particular genre, and 0 otherwise. Keep in mind that a movie may belong to several genres at once.
- Call df[genres].head() to view your results.

How many genres of movies are in this dataset?

20 **20**



✓ Correct (1/1 point)

✓ Previous

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