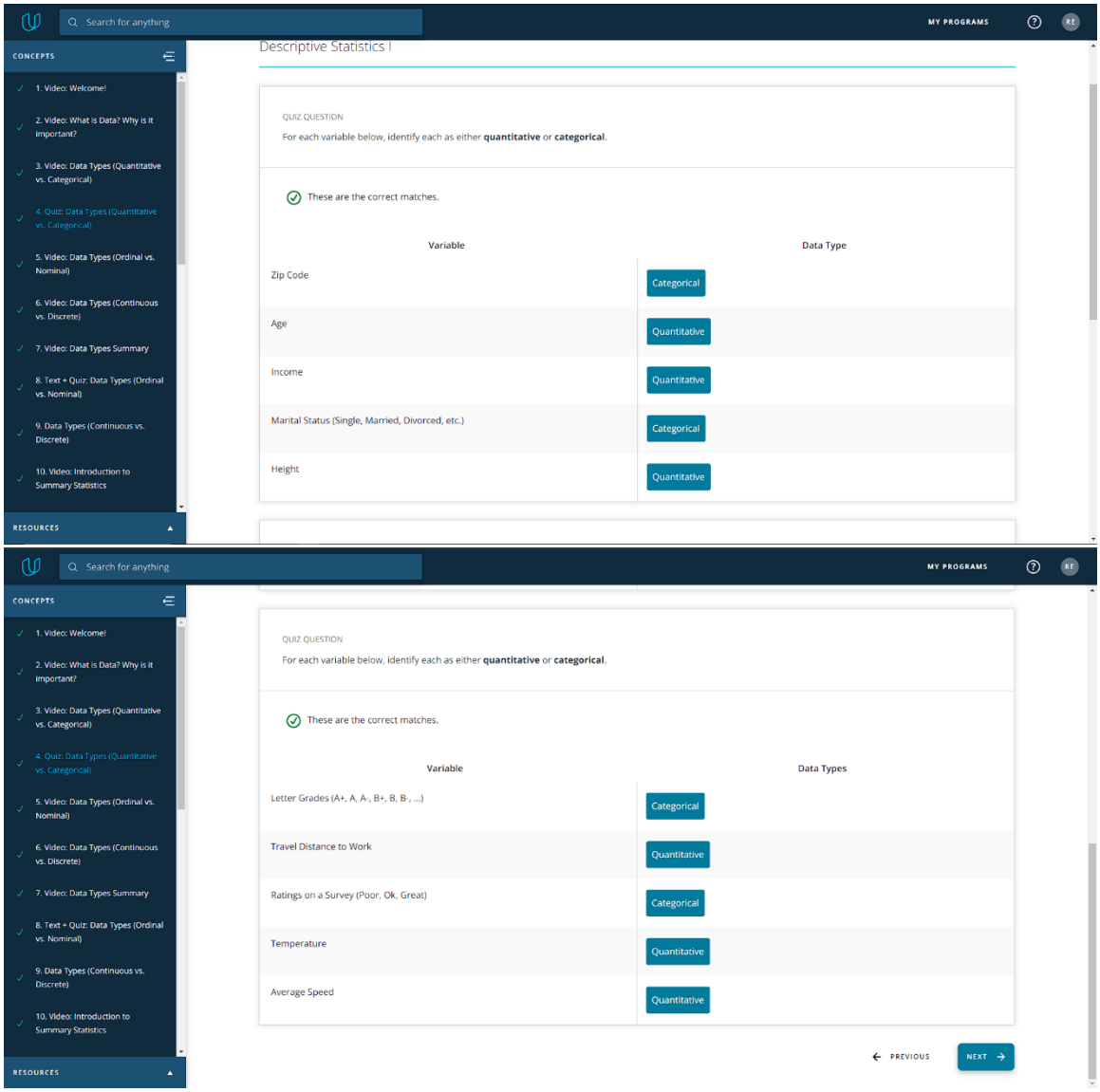
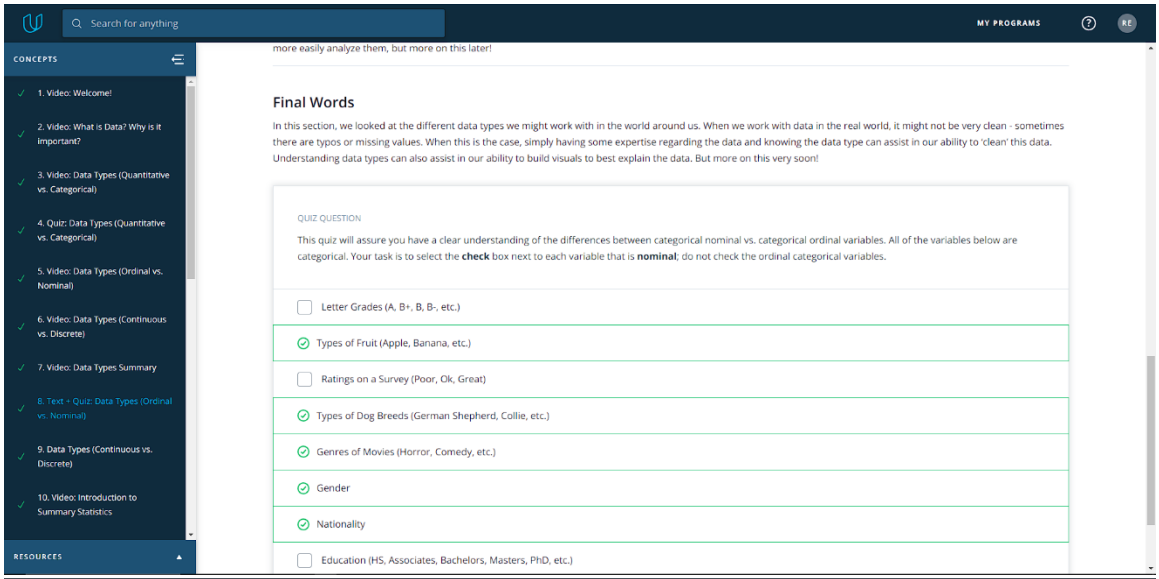
Rami El Rafee

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1. Video: Welcome!
2. Video: What is Data? Why is it important?
3. Video: Data Types (Quantitative vs. Categorical)
4. Quiz: Data Types (Quantitative vs. Categorical)
5. Video: Data Types (Ordinal vs. Nominal)
6. Video: Data Types (Continuous vs. Discrete)
7. Video: Data Types Summary
8. Text + Quiz: Data Types (Ordinal vs. Nominal)
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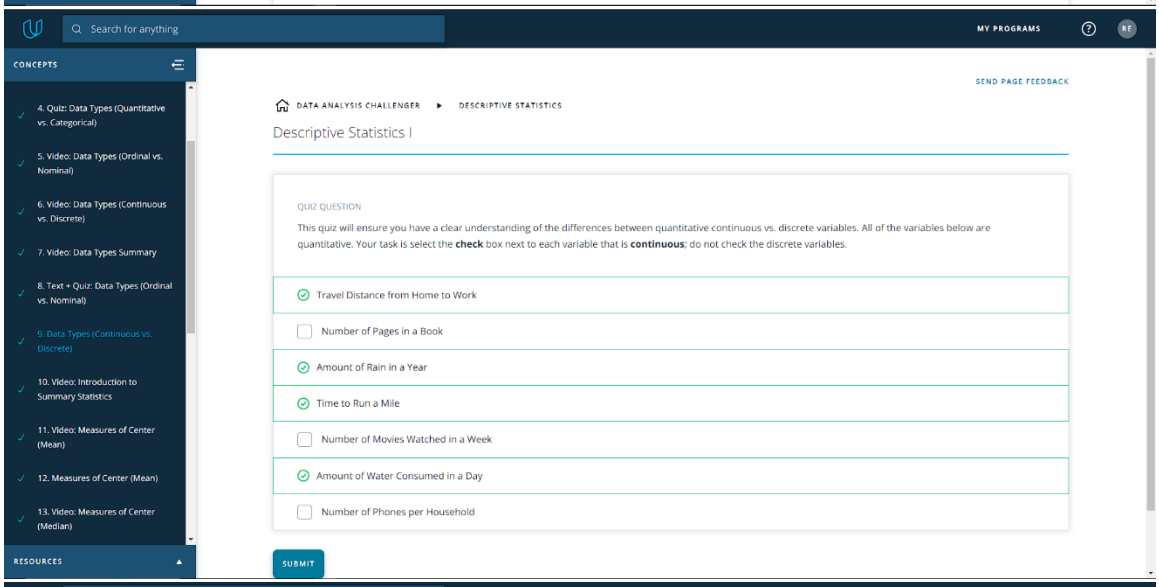
more easily analyze them, but more on this later!
Final Words
In this section, we looked at the different data types we might work with in the world around us. When we work with data in the real world, it might not be very clean - sometimes there are typos or missing values. When this is the case, simply having some expertise regarding the data and knowing the data type can assist in our ability to 'clean' this data. Understanding data types can also assist in our ability to build visuals to best explain the data. But more on this very soon!
QUIZ QUESTION
This quiz will assure you have a clear understanding of the differences between categorical nominal vs. categorical ordinal variables. All of the variables below are categorical. Your task is to select the check box next to each variable that is nominal; do not check the ordinal categorical variables.
Letter Grades (A, B+, B, B-, etc.)
Types of Fruit (Apple, Banana, etc.)
Ratings on a Survey (Poor, Ok, Great)
Types of Dog Breeds (German Shepherd, Collie, etc.)
Genres of Movies (Horror, Comedy, etc.)
Gender
Nationality
Education (HS, Associates, Bachelors, Masters, PhD, etc.)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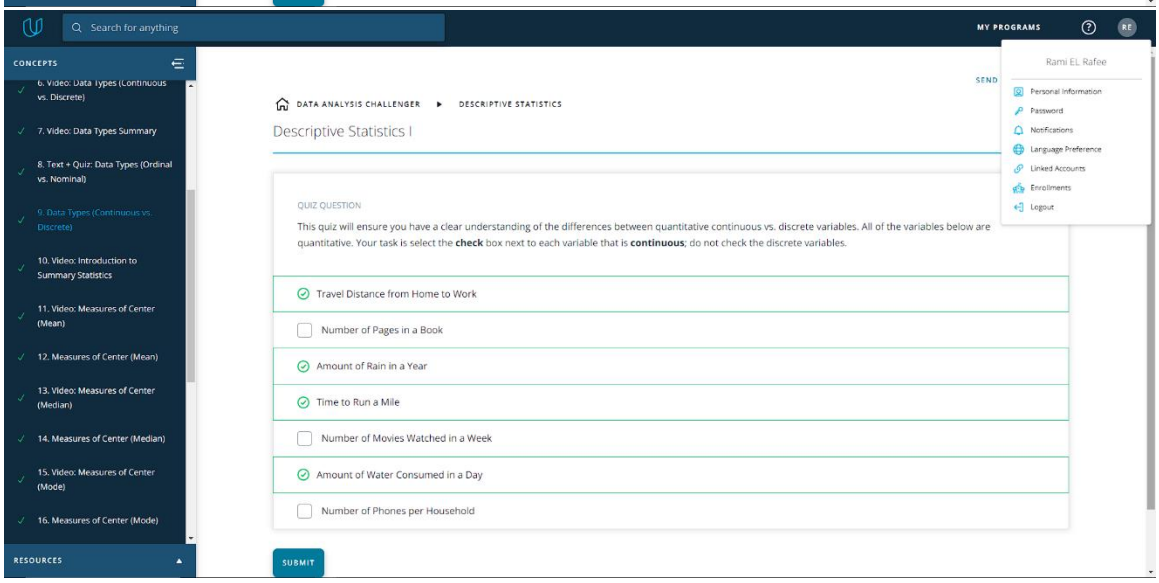
DATA ANALYSIS CHALLENGER ▸ DESCRIPTIVE STATISTICS
Descriptive Statistics I
QUIZ QUESTION
This quiz will ensure you have a clear understanding of the differences between quantitative continuous vs. discrete variables. All of the variables below are quantitative. Your task is select the check box next to each variable that is continuous; do not check the discrete variables.
Travel Distance from Home to Work
Number of Pages in a Book
Amount of Rain in a Year
Time to Run a Mile
Number of Movies Watched in a Week
Amount of Water Consumed in a Day
Number of Phones per Household
SUBMIT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Descriptive Statistics I
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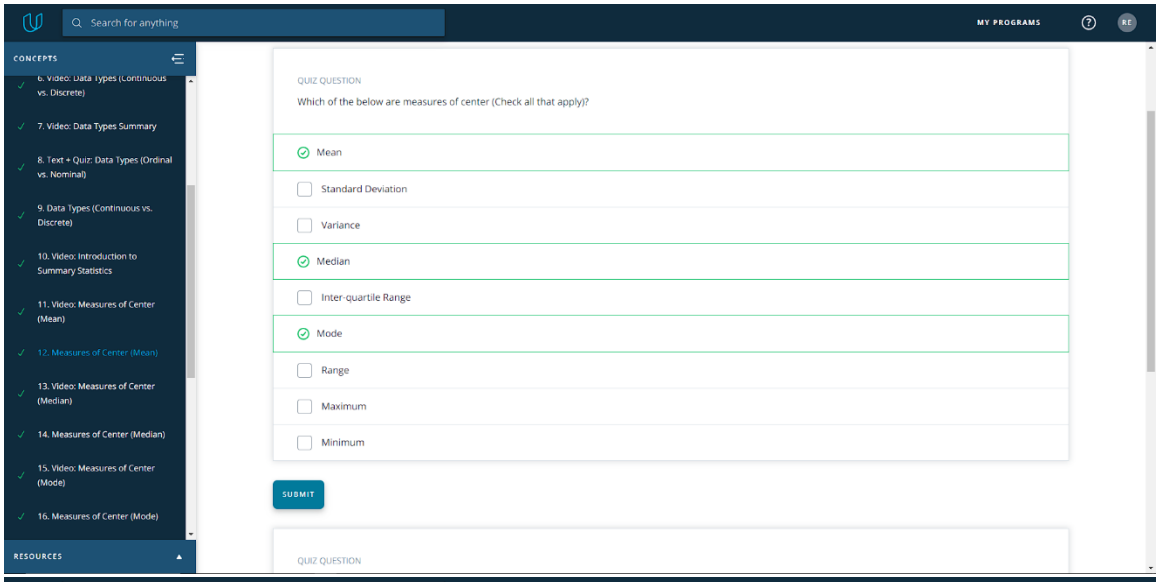
Travel Distance from Home to Work
Number of Pages in a Book
Amount of Rain in a Year
Time to Run a Mile
Number of Movies Watched in a Week
Amount of Water Consumed in a Day
Number of Phones per Household
SUBMIT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14. Measures of Center (Median)
15. Video: Measures of Center (Mode)
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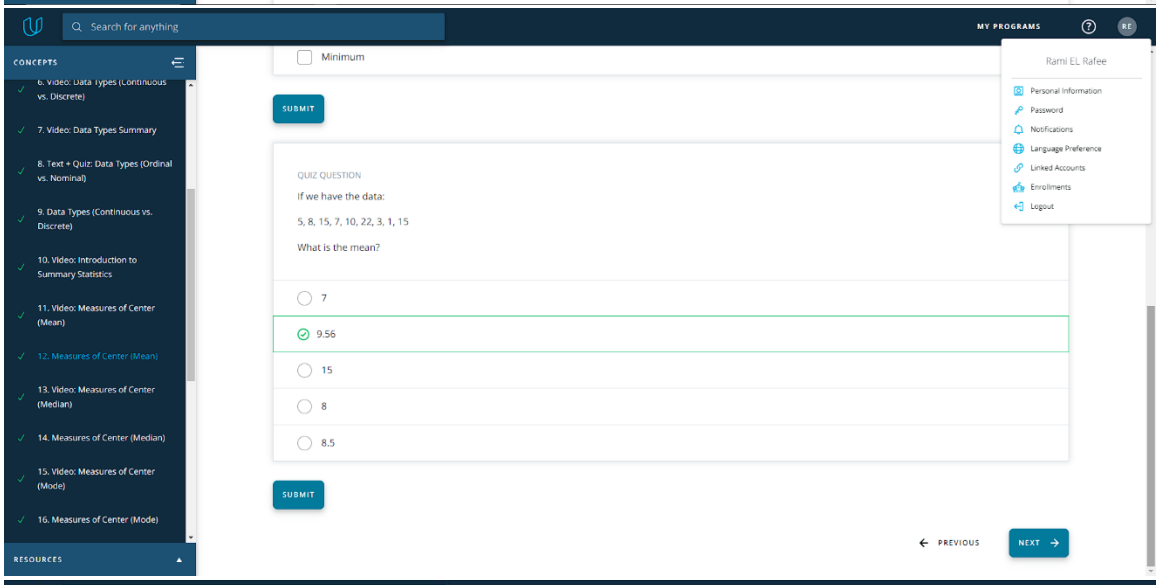
QUIZ QUESTION
Which of the below are measures of center (Check all that apply)?
Mean
Standard Deviation
Variance
Median
Inter-quartile Range
Mode
Range
Maximum
Minimum
SUBMIT
QUIZ QUESTION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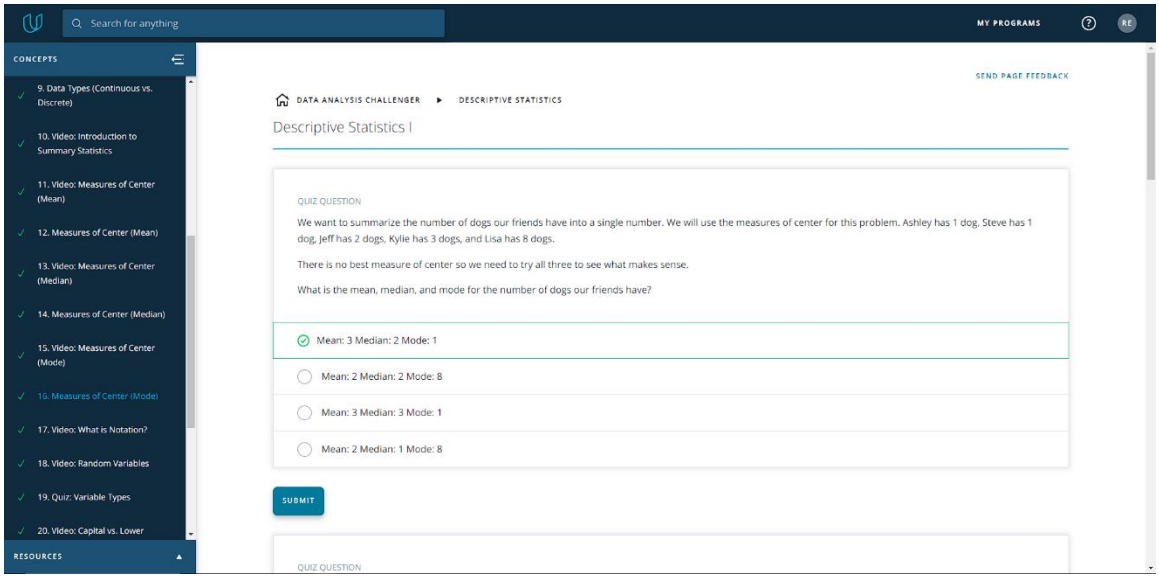
QUIZ QUESTION
If we have the data:
5, 8, 15, 7, 10, 22, 3, 1, 15
What is the mean?
7
9.56
15
8
8.5
SUBMIT
PREVIOUS
NEXT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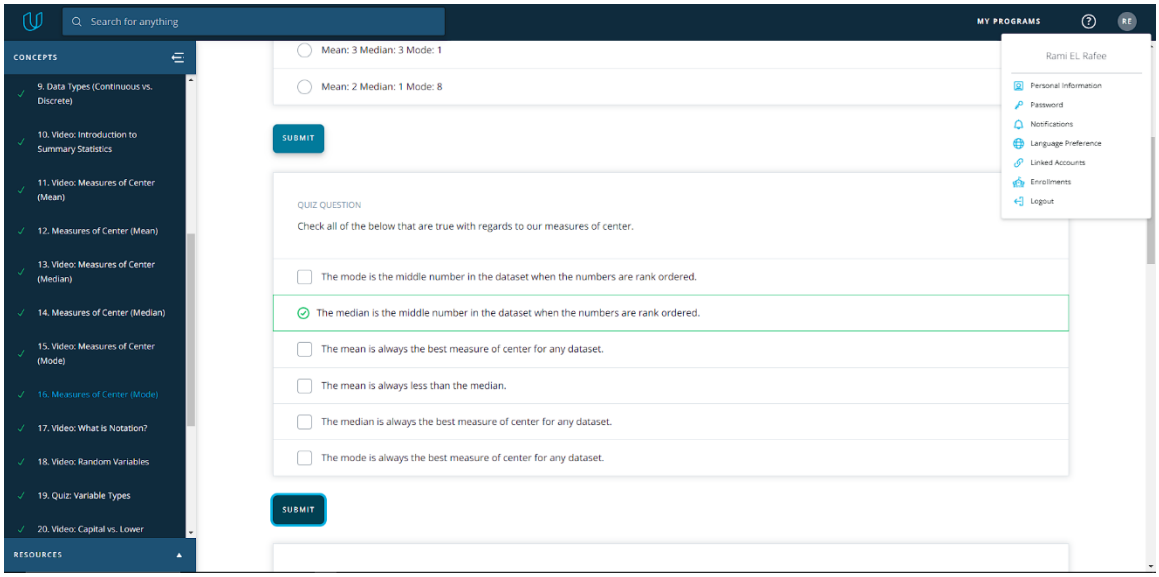
DATA ANALYSIS CHALLENGER
DESCRIPTIVE STATISTICS
Descriptive Statistics I
QUIZ QUESTION
We want to summarize the number of dogs our friends have into a single number. We will use the measures of center for this problem. Ashley has 1 dog, Steve has 1 dog, Jeff has 2 dogs, Kylie has 3 dogs, and Lisa has 8 dogs.
There is no best measure of center so we need to try all three to see what makes sense.
What is the mean, median, and mode for the number of dogs our friends have?
Mean: 3 Median: 2 Mode: 1
Mean: 2 Median: 2 Mode: 8
Mean: 3 Median: 3 Mode: 1
Mean: 2 Median: 1 Mode: 8
SUBMIT
QUIZ QUESTION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Mean: 3 Median: 3 Mode: 1
Mean: 2 Median: 1 Mode: 8
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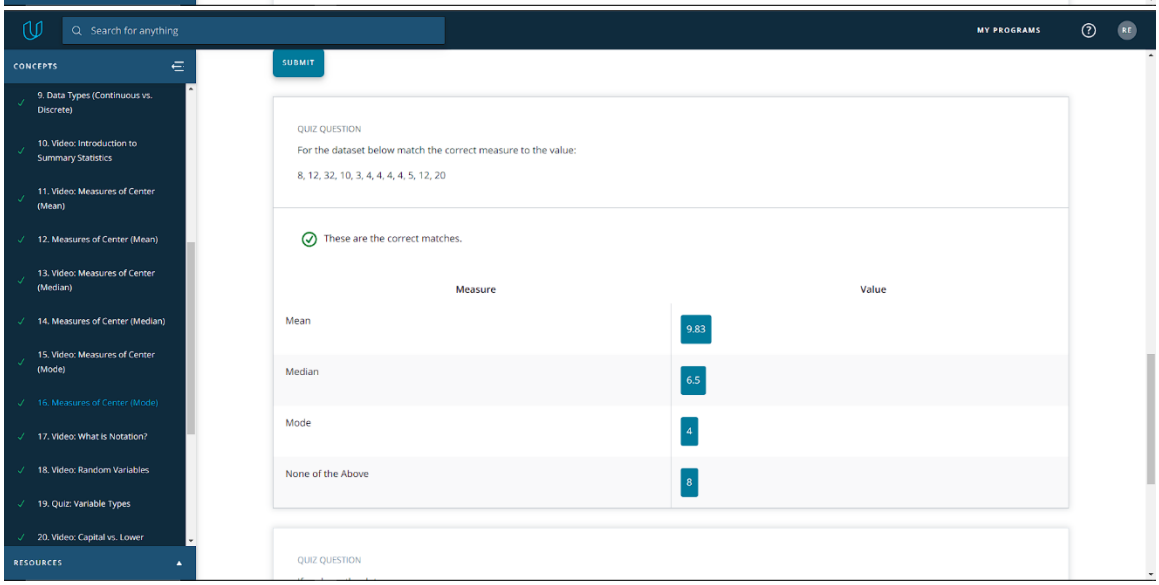
QUIZ QUESTION
Check all of the below that are true with regards to our measures of center.
The mode is the middle number in the dataset when the numbers are rank ordered.
The median is the middle number in the dataset when the numbers are rank ordered.
The mean is always the best measure of center for any dataset.
The mean is always less than the median.
The median is always the best measure of center for any dataset.
The mode is always the best measure of center for any dataset.
SUBMIT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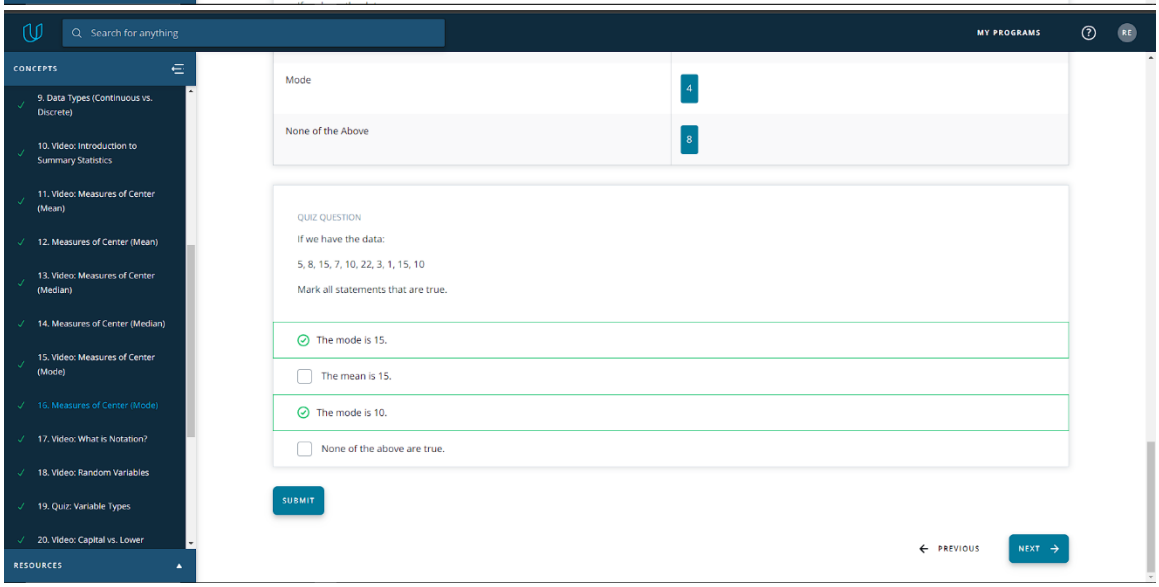
QUIZ QUESTION
For the dataset below match the correct measure to the value:
8, 12, 32, 10, 3, 4, 4, 4, 5, 12, 20
These are the correct matches.
Measure
Value
Mean
9.83
Median
6.5
Mode
4
None of the Above
8
QUIZ QUESTION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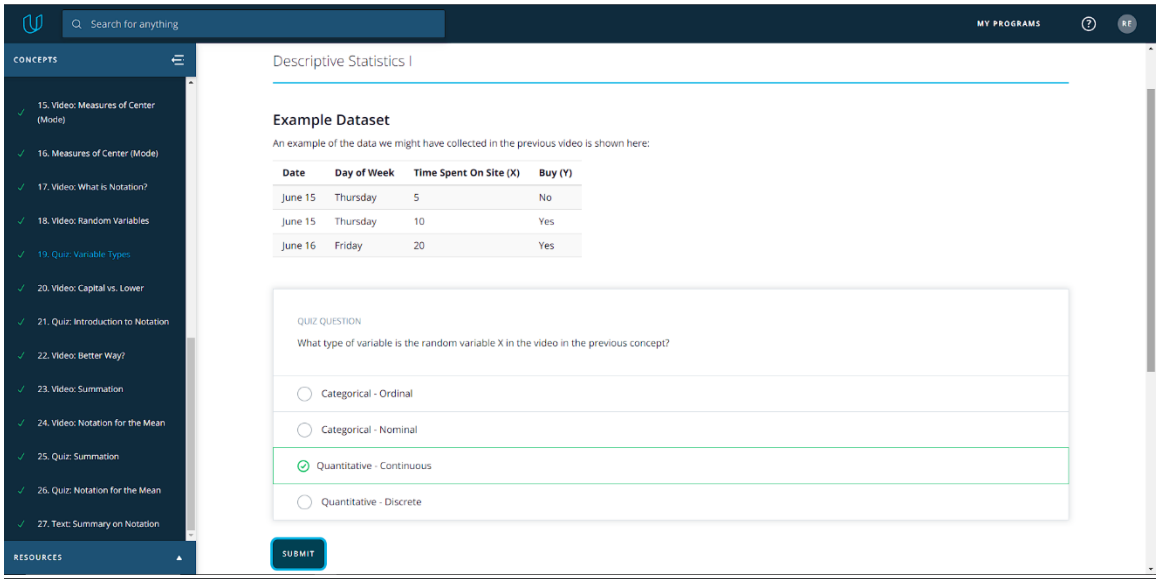
RESOURCES
Mode
4
None of the Above
8
QUIZ QUESTION
If we have the data:
5, 8, 15, 7, 10, 22, 3, 1, 15, 10
Mark all statements that are true.
The mode is 15.
The mean is 15.
The mode is 10.
None of the above are true.
SUBMIT
PREVIOUS
NEXT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24. Video: Notation for the Mean
25. Quiz: Summation
26. Quiz: Notation for the Mean
27. Text: Summary on Notation
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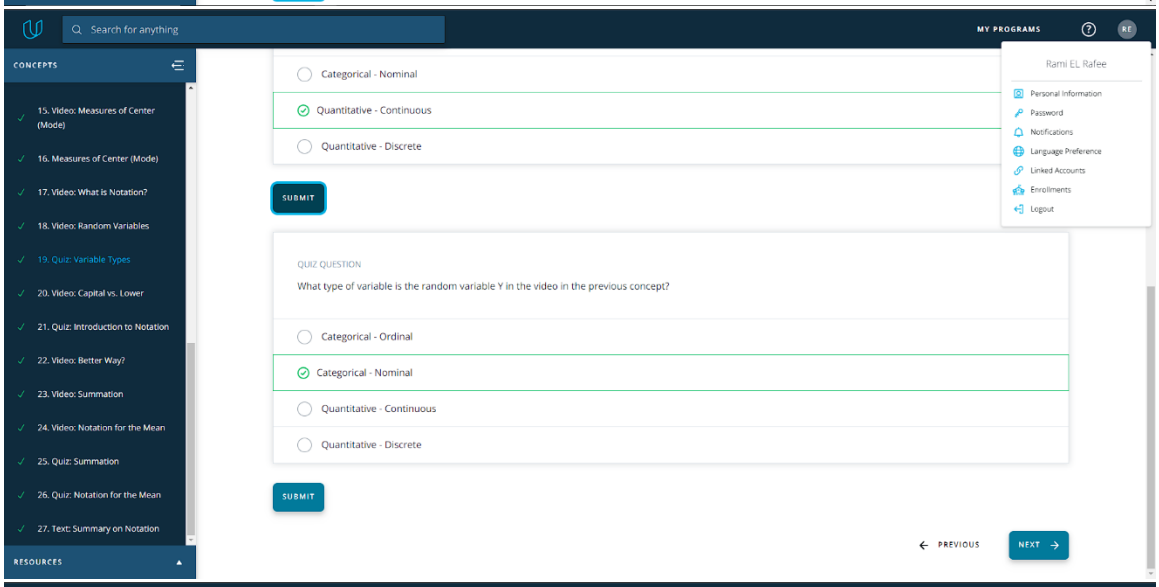
Descriptive Statistics I
Example Dataset
An example of the data we might have collected in the previous video is shown here:
Date | Day of Week | Time Spent On Site (X) | Buy (Y)
June 15 | Thursday | 5 | No
June 15 | Thursday | 10 | Yes
June 16 | Friday | 20 | Yes
QUIZ QUESTION
What type of variable is the random variable X in the video in the previous concept?
Categorical - Ordinal
Categorical - Nominal
Quantitative - Continuous
Quantitative - Discrete
SUBMIT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Categorical - Nominal
Quantitative - Continuous
Quantitative - Discrete
SUBMIT
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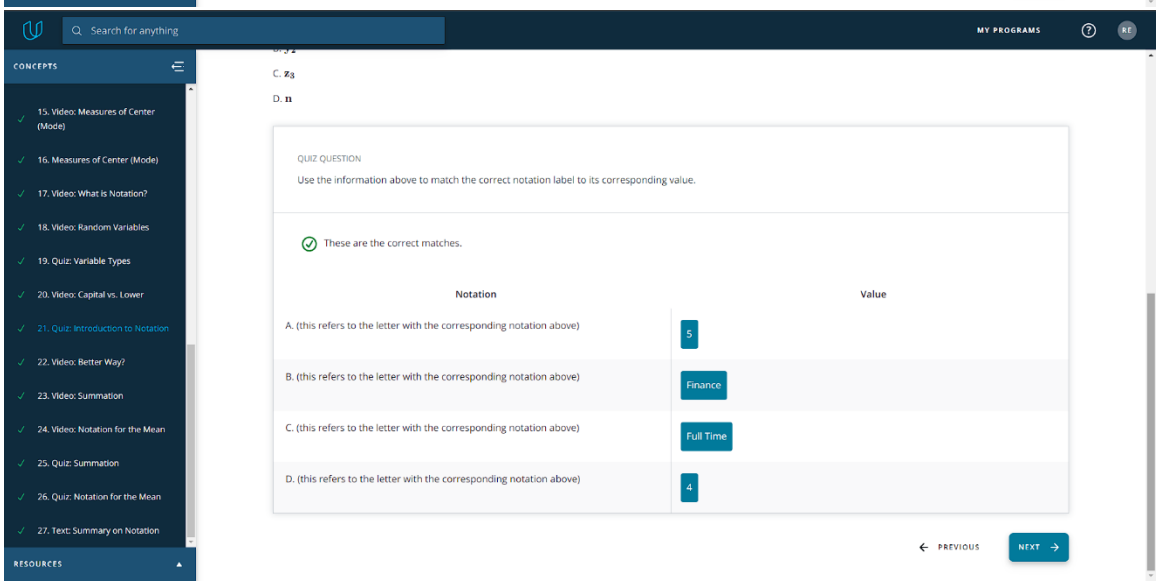
QUIZ QUESTION
What type of variable is the random variable Y in the video in the previous concept?
Categorical - Ordinal
Categorical - Nominal
Quantitative - Continuous
Quantitative - Discrete
SUBMIT
PREVIOUS
NEXT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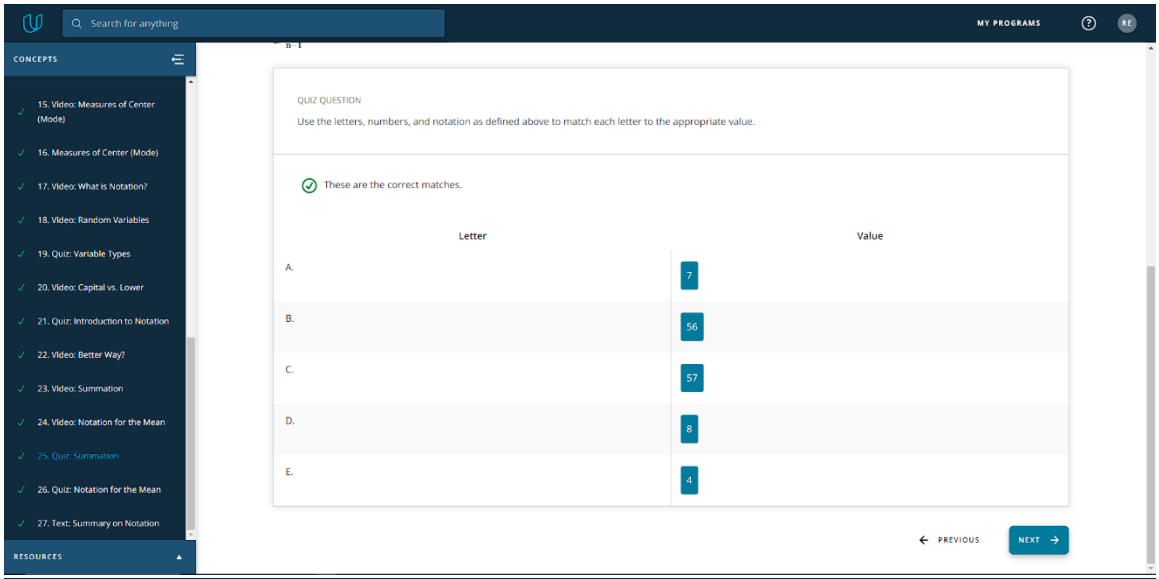
27. Text: Summary on Notation
RESOURCES
C. z_8
D. n
QUIZ QUESTION
Use the information above to match the correct notation label to its corresponding value.
These are the correct matches.
Notation
Value
A. (this refers to the letter with the corresponding notation above)
5
B. (this refers to the letter with the corresponding notation above)
Finance
C. (this refers to the letter with the corresponding notation above)
Full Time
D. (this refers to the letter with the corresponding notation above)
4
PREVIOUS
NEXT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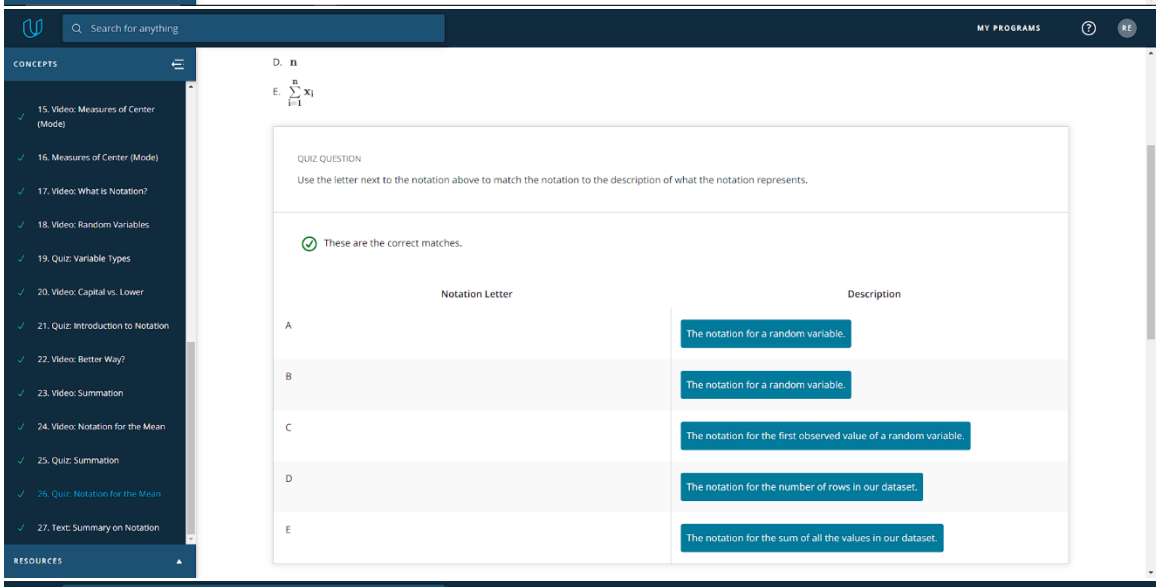
QUIZ QUESTION
Use the letters, numbers, and notation as defined above to match each letter to the appropriate value.
These are the correct matches.
Letter
Value
A.
7
B.
56
C.
57
D.
8
E.
4
PREVIOUS
NEXT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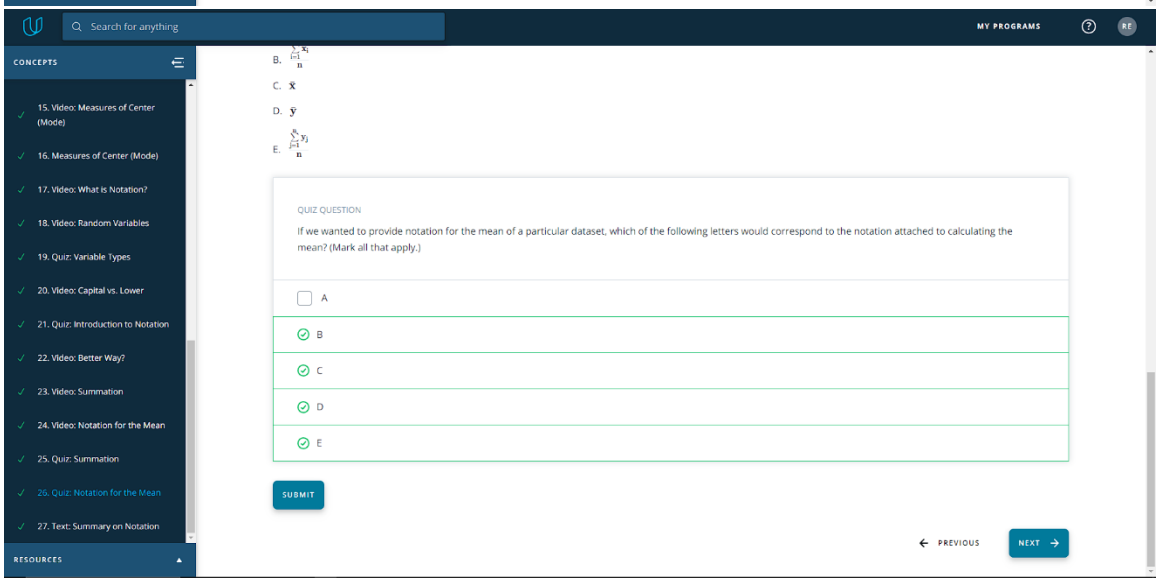
D. $\mathbf{n}$
E. $\sum_{i=1}^{n} x_i$
QUIZ QUESTION
Use the letter next to the notation above to match the notation to the description of what the notation represents.
These are the correct matches.
Notation Letter
Description
A
The notation for a random variable.
B
The notation for a random variable.
C
The notation for the first observed value of a random variable.
D
The notation for the number of rows in our dataset.
E
The notation for the sum of all the values in our dataset.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B. $\frac{\sum_{i=1}^{n} x_i}{n}$
C. $\bar{\mathbf{x}}$
D. $\bar{\mathbf{y}}$
E. $\frac{\sum_{j=1}^{n} y_j}{n}$
QUIZ QUESTION
If we wanted to provide notation for the mean of a particular dataset, which of the following letters would correspond to the notation attached to calculating the mean? (Mark all that apply.)
A
B
C
D
E
SUBMIT
PREVIOUS
NEXT