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Week 2 Quiz

LATEST SUBMISSION GRADE
100%

1. Use the Dognition_aggregated_by_DogID data set for the quiz questions. Note that we use comma (,) to separate groups of thousands in numbers. **1 / 1 point**

   How many unique human user IDs are there in the Dognition_aggregated_by_DogID data set?

   - ○ 14,433
   - ◉ 16,261
   - ○ 17,985
   - ○ 17,986
   - ○ None of the above

   ✓ **Correct**
   The Count(Distinct) aggregation is useful for addressing this question.

2. What feature is common to all the rows that have a value of 37 in the "State" field of the Dognition_aggregated_by_DogID data set? Check all that apply. **1 / 1 point**

   - ☐ They are all golden retrievers
   - ☐ They are all "charmers"
   - ☐ They all completed 37 tests
   - ☐ They all weigh 37 pounds
   - ☑ They are all from Estonia

   ✓ **Correct**
   It appears that the numbers in the "State" field likely represented countries at some point.

3. What property is common to almost all the data points that had "Sign In Counts" of greater than 175 in the Dognition_aggregated_by_DogID data set? **1 / 1 point**

   - ○ They are all from the city Saint Jean de Monts
   - ◉ They are all Shih Tzus that weigh 190 lbs
   - ○ They are all from Estonia
   - ○ They all have an Einstein profile
   - ○ They all have Dog ID fd51b784-7144-11e5-ba71-058fbc01cf0b

   ✓ **Correct**
   It turns out that Dognition's convention for indicating when an account was a "testing" account was to enter a weight that was completely infeasible for the entered breed. Shih Tzus typically weigh between 9 and 16 pounds.

4. The Personality Dimension that has the highest average number of completed tests in the Dognition_aggregated_by_DogID data set is clearly: **1 / 1 point**

   - ○ The Expert Dimension
   - ○ The Socialite Dimension
   - ○ The Renaissance Dimension
   - ○ The Protodog Dimension
   - ◉ None of them. All of the personality dimensions have very similar completion rates.

   ✓ **Correct**
   You are right! Regardless of whether you take the average or the median of the number of tests the dogs in each group completed, all of the personality dimensions finished a similar number of tests. That said, take note that this could be a misleading result, because the personality information only becomes available after the dogs have completed the initial 20 tests that comprise the Dognition Assessment. As a consequence, we are looking at a pretty small subset of the overall population of dogs from our data set in this analysis.

5. In the Dognition_aggregated_by_DogID data set, what is consistent about the relationship between breeding group and number of tests completed, regardless of whether you aggregate the variable representing the **1 / 1 point**

number of tests completed by the median or the average of the breeding group?

- ○ Herding dogs finish the greatest number of tests
- ○ Sporting dogs finish the greatest number of tests
- ◉ Toy dogs complete the least number of tests
- ○ Hound dogs complete the least number of tests
- ○ None of the above

✓ **Correct**
Regardless of whether you take the average or the median of the number of tests the dogs in each group completed, dogs in Toy Breed group always finish the least number of tests. What do you think this means for Dognition?

6. In the Dognition_aggregated_by_DogID data set, what personality type has the strongest representation (greatest number of records) in the sporting breed group? **1 / 1 point**

- ○ Expert
- ○ Einstein
- ◉ Socialite
- ○ Protodog
- ○ Charmer

✓ **Correct**
Those sporty dogs turn out to be social butterflies.

7. In the Dognition_aggregated_by_DogID data set, which of the following describes the median number of tests dogs of different breed types complete? **1 / 1 point**

- ○ Cross-Breed dogs complete a median of 8 tests, while all the other breed types complete a median of 7 tests
- ○ Pure-Breed dogs complete a median of 8 tests, while all the other breed types complete a median of 7 tests
- ○ Popular-Hybrid dogs complete a median of 8 tests, while all the other breed types complete a median of 7 tests
- ◉ All breed types complete a median of 7 tests
- ○ All breed types complete a median of 5 tests

✓ **Correct**
They typically finish the first two categories of tests (the 4 Empathy tests, followed by the 3 Communication tests)

8. In the Dognition_aggregated_by_DogID data set, how do the average number of tests dogs complete compare for fixed vs. not fixed dogs across different breed types? Click all that apply **1 / 1 point**

- ☑ The greatest difference between the average number of tests completed by fixed vs. non-fixed dogs occurs in the Mixed Breed/ I Don't Know breed category

✓ **Correct**
Fixed dogs seem to, on average, finish more tests than non-fixed dogs. The data we have available does not provide much insight into whether that effect is more likely due to the biological effects of fixing a dog, or due to the psychological profile of owners who fix their dogs.

- ☐ Fixed dogs complete more tests than non-fixed dogs in the Cross-Breed and Mixed Breed/ I Don't Know breed categories, but not in the other breed categories
- ☑ Fixed dogs complete more tests than non-fixed dogs in all breed types

✓ **Correct**
Fixed dogs seem to, on average, finish more tests than non-fixed dogs. The data we have available does not provide much insight into whether that effect is more likely due to the biological effects of fixing a dog, or due to the psychological profile of owners who fix their dogs.

- ☐ Fixed dogs complete less tests than non-fixed dogs in all breed types
- ☐ Fixed dogs complete less tests than non-fixed dogs in the Cross-Breed and Mixed Breed/ I Don't Know breed categories, but not in the other breed categories

9. In the Dognition_aggregated_by_DogID data set, which of the following are true about the average number of tests dogs complete when comparing DNA vs. not DNA-tested dogs who were fixed vs. not fixed across different breed types? Click all that apply. **1 / 1 point**

- ☑ There was only one dog in the Popular Hybrid breed category who was DNA tested but not fixed

✓ **Correct**
Please review Lesson 3 Let's Get Started to review how to arrive at the correct answer.

- ☐ DNA-tested dogs completed less tests than dogs that were NOT DNA tested in all categories except for the category of Popular Hybrids who were fixed

- [x] DNA-tested dogs completed more tests than dogs that were NOT DNA tested in all categories except for the category of Popular Hybrids who were fixed

Correct
In almost all categories, DNA-tested dogs completed an average of more tests than dogs who were not DNA-tested. However, the numbers of dogs who were DNA-tested were pretty small. Do you think this information could be useful to Dognition?

- [x] The Cross-Breed dogs that were DNA tested but NOT fixed were mostly Labrador Retriever-Golden Retriever Mixes

Correct
In almost all categories, DNA-tested dogs completed an average of more tests than dogs who were not DNA-tested. However, the numbers of dogs who were DNA-tested were pretty small. Do you think this information could be useful to Dognition?

- [ ] The Cross-Breed dogs that were DNA tested but NOT fixed were mostly Golden Doodles

10. In the Dognition_aggregated_by_DogID data set, when you make a filled map that displays the number of unique Dog IDs in each country, there is country in Africa that has a deep color, suggesting it has a lot of users. When you hover over that country, what Country is displayed on the tool tip? **1 / 1 point**

- ( ) AR
- ( ) NO
- ( ) SA
- ( ) ZA
- (•) N/A

Correct
If you look at the raw data, you will see that the underlying value written in the "Country" column of all the rows Tableau is assuming are linked to that country is "N/A", which is an English abbreviation for “Not Available” or “Not Applicable”. In other words, those entries should be considered as missing data. However, Tableau incorrectly assumed that "N/A" stood for Namibia, which is an African country with a country abbreviation of "NA." Since there were a lot of entries with "N/A", Tableau filled in Namibia with a deep color.

11. In the Dognition_aggregated_by_DogID data set, which state within the United States has the most Dognition customers? **1 / 1 point**

- (•) California, with New York having the second greatest number of customers
- ( ) North Carolina, with New York having the second greatest number of customers
- ( ) Florida, with Texas having the second greatest number of customers
- ( ) North Carolina, with California having the second greatest number of customers
- ( ) Texas, with California having the second greatest number of customers

Correct
California has the greatest number of customers by a strong margin. How can you use that to Dognition’s advantage?

12. In the Dognition_aggregated_by_DogID data set, dogs in which of the following states did customers complete a median number of tests that was greater than 13? Check all that apply. **1 / 1 point**

- [x] Maine (ME)

Correct
This is one of the states. Maine doesn't have a lot of customers, but the customers they did have finished a lot of tests.

- [x] North Carolina (NC)

Correct
This is one of the states. North Carolina doesn't have a lot of customers, but the customers they did have finished a lot of tests.

- [x] North Dakota (ND)

Correct
This is one of the states. North Dakota doesn't have a lot of customers, but the customers they did have finished a lot of tests.

- [x] South Dakota (SD)

Correct
This is one of the states. South Dakota doesn't have a lot of customers, but the customers they did have finished a lot of tests.

- [x] Wyoming (WY)

✓ **Correct**

This is one of the states. Wyoming doesn't have a lot of customers, but the customers they did have finished a lot of tests.

13. Which of the following is true? **1 / 1 point**

- (●) Average aggregations are more sensitive to extreme values than median aggregations
- ( ) Median aggregations are more sensitive to extreme values than average aggregations
- ( ) Neither average nor median aggregations are sensitive to outliers
- ( ) Average and median aggregations are equally sensitive to outliers

✓ **Correct**

Averages are very sensitive to extreme values, as are regression statistics.

14. In the Dognition_aggregated_by_DogID data set, when looking at only dogs who completed **19** or less tests, which of the following is true about the relationship between inter-test intervals (ITIs) and number of tests completed? Click all that apply. **1 / 1 point**

- [ ] There was a non-significant negative ($p > .05$) correlation between average ITIs and number of tests completed
- [ ] There was a significant positive ($p < .05$) correlation between median ITIs and number of tests completed
- [x] There was a significant negative ($p < .05$) correlation between median ITIs and number of tests completed

✓ **Correct**

Median ITIs correlated negatively with greater numbers of tests being completed, while average ITIs correlated positively with greater numbers of tests being completed. Although this might seem confusing at first, it is likely because customers often took big breaks between each category of tests, and may have taken bigger breaks between the last categories of tests in the Dognition Assessment. The big breaks would have driven the mean ITI values up, but would not have affected the median ITIs much. These results could potentially support the hypothesis that people who move from test to test faster are more likely to finish more tests, but the caveat is that the data suggest customers nonetheless often take at least some big breaks. One possibility to consider is that the big breaks might come after sub-categories of tests are finished, but the data we are using this week does not allow us to test this hypothesis.

- [x] There was a significant positive ($p < .05$) correlation between average ITIs and number of tests completed

✓ **Correct**

Median ITIs correlated negatively with greater numbers of tests being completed, while average ITIs correlated positively with greater numbers of tests being completed. Although this might seem confusing at first, it is likely because customers often took big breaks between each category of tests, and may have taken bigger breaks between the last categories of tests in the Dognition Assessment. The big breaks would have driven the mean ITI values up, but would not have affected the median ITIs much. These results could potentially support the hypothesis that people who move from test to test faster are more likely to finish more tests, but the caveat is that the data suggest customers nonetheless often take at least some big breaks. One possibility to consider is that the big breaks might come after sub-categories of tests are finished, but the data we are using this week does not allow us to test this hypothesis.

- [ ] There was a non-significant positive ($p > .05$) correlation between average ITIs and number of tests completed

15. In the Dognition_aggregated_by_DogID data set, when looking at only dogs who completed **7** or less tests, which of the following is true about the relationship between inter-test intervals (ITIs) and number of tests completed? Click all that apply **1 / 1 point**

- [ ] There was a non-significant positive ($p > .05$) correlation between average ITIs and number of tests completed
- [ ] There was a non-significant negative ($p > .05$) correlation between average ITIs and number of tests completed
- [x] There was a significant negative ($p < .05$) correlation between median ITIs and number of tests completed

✓ **Correct**

Median ITIs correlated negatively with greater number of tests being completed, while average ITIs correlated positively with greater numbers of tests being completed. This is true even if you only look at the subset of dogs who finished 7 tests or less.

- [x] There was a significant positive ($p < .05$) correlation between average ITIs and number of tests completed

✓ **Correct**

Median ITIs correlated negatively with greater number of tests being completed, while average ITIs correlated positively with greater numbers of tests being completed. This is true even if you only look at the subset of dogs who finished 7 tests or less.

- [ ] There was a significant positive ($p < .05$) correlation between median ITIs and number of tests completed