Home / I'm Learning / IoT Fundamental: Big Data and Analysis / Chapter 3: Data Analysis / Chapter 3 Quiz

**Course Home**

**Grades**

**Messages**

**Calendar**

# IoT Fundamental: Big Data and Analysis

| | |
|---|---|
| **Started on** | Saturday, 17 September 2022, 2:37 PM |
| **State** | Finished |
| **Completed on** | Saturday, 17 September 2022, 2:42 PM |
| **Time taken** | 4 mins 58 secs |
| **Marks** | 32.00/32.00 |
| **Grade** | **100.00** out of 100.00 |

---

**Question 1**

Correct

Mark 2.00 out of 2.00

---

Which file type is most similar to a dataframe in pandas?

Select one:

○ a PDF file

◉ a spreadsheet ✔

○ a word processing file

○ a multilayer image file

Refer to curriculum topic: 3.1.4
A dataframe in pandas is like a spreadsheet with rows and columns.

The correct answer is: a spreadsheet

---

**Question 2**

Correct

Mark 2.00 out of 2.00

---

Match the variable with the type of value.

| nominal | eye color | ✔ |
|---|---|---|
| ordinal | student class rank | ✔ |
| continuous | sales volume | ✔ |
| discrete | number of users | ✔ |

Refer to curriculum topic: 3.1.1

The correct answer is: nominal → eye color, ordinal → student class rank, continuous → sales volume, discrete → number of users
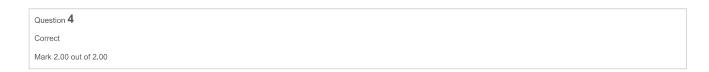
Question **3**

Correct

Mark 2.00 out of 2.00

A data analyst performs a correlation analysis between two quantities. The result of the analysis is an r value of 0. What does this mean?

Select one:

○ The analysis failed.

◉ The two variables have no relationship.                                                    ✔

○ Neither variables changed during the period.

○ When one variable increases its value, the other variable reduces its value.

Refer to curriculum topic: 3.1.5

The commonly used correlation coefficient, Pearson r, (or r value), is a quantity that is expressed as a value between -1 and 1. Positive values indicate a positive relationship between the changes in two quantities. Negative values indicate an inverse relationship. The magnitude of either the positive or negative values indicates the degree of correlation. The closer the value is to 1 or -1, the stronger the relationship. 0 indicates no relationship.

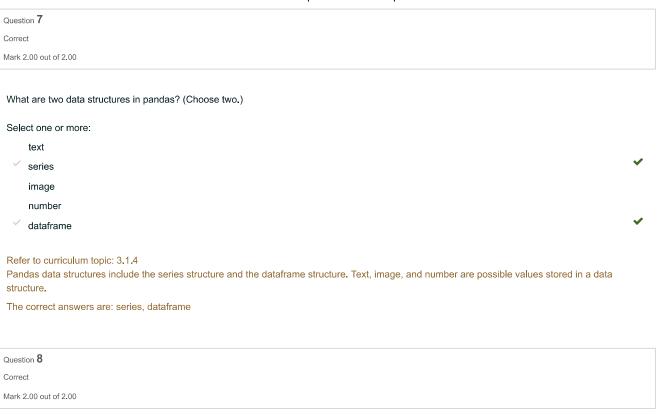The correct answer is: The two variables have no relationship.

Question **4**

Correct

Mark 2.00 out of 2.00

Match the variable with the description.

| ordinal | qualitative values in order of ranking | ✔ |
| nominal | qualitative values based on identity of the object | ✔ |
| continuous | quantitative values with infinite range | ✔ |
| discrete | quantitative and finite set of values | ✔ |

Refer to curriculum topic: 3.1.1

The correct answer is: ordinal → qualitative values in order of ranking, nominal → qualitative values based on identity of the object, continuous → quantitative values with infinite range, discrete → quantitative and finite set of values

Question **5**

Correct

Mark 2.00 out of 2.00

A data analyst studies two variables over a period. Data set A is (100, 90, 81, 73) and data set B is (3500, 3150, 2835, 2552). The Pearson r value between these two variables is 0.99. Which statement describes the correlation between them?

Select one:

◯ It indicates no relationship.

◯ It is a weak negative correlation.

◯ It is a strong positive correlation. ✓

◯ It is a strong negative correlation.

Refer to curriculum topic: 3.1.5
The Pearson r is a quantity to indicate the correlation between two variables. It is expressed as a value between -1 and 1. Positive values express a positive relationship between the changes in two variables. Negative values express an inverse relationship. The magnitude of either the positive or negative values indicates the degree of correlation. In other words the closer the value is to 1 or -1, the stronger the relationship. 0 indicates no relationship.

The correct answer is: It is a strong positive correlation.

Question **6**

Correct

Mark 2.00 out of 2.00

What category of variables includes nominal or ordinal variables?

Select one:

◯ numerical

◯ categorical ✓

◯ ratio

◯ interval

Refer to curriculum topic: 3.1.1
Variables are classified as either categorical or numerical. Categorical variables include nominal and ordinal variables.

The correct answer is: categorical

Question **7**

Correct

Mark 2.00 out of 2.00

What are two data structures in pandas? (Choose two.)

Select one or more:

   text

  ✓ series                                                         ✔

   image

   number

  ✓ dataframe                                                  ✔

Refer to curriculum topic: 3.1.4
Pandas data structures include the series structure and the dataframe structure. Text, image, and number are possible values stored in a data structure.

The correct answers are: series, dataframe

Question **8**

Correct

Mark 2.00 out of 2.00

In a graphical reppresentation of the distribution for a discrete variable, what does the X and Y axis reppresent? (Choose two.)

Select one or more:

   skew

  ✓ variable                                                  ✔

  ✓ probability                                              ✔

   range

   standard deviation

Refer to curriculum topic: 3.1.3
A distribution can be graphed in two dimensions using two characteristics: the variable and the probability. Typically the variable is plotted on the x-axis and the probability on the y-axis.

The correct answers are: variable, probability

Question **9**

Correct

Mark 2.00 out of 2.00

What relationship is an example of causation?

Select one:

○ a relationship between sensors and actuators in IoT

○ a relationship in which two things change at a similar rate

○ a relationship between a computer operating system and one or more programming languages

◉ a relationship when a change in one thing directly results in something else changing ✔

Refer to curriculum topic: 3.1.5

Causation describes a relationship in which one thing changes, or is created, directly because of something else. It is not the relationship of the rate of change. Sensors and actuators in IoT are not directly related to each other. A controller might receive the signal from a sensor, make a decision, and instruct an actuator to act if necessary. Also, operating systems and programming languages are not dependent on each other. An operating system can be made by different programming languages.

The correct answer is: a relationship when a change in one thing directly results in something else changing

Question **10**

Correct

Mark 2.00 out of 2.00

What term describes the key characteristics that are observed or measured as part of an experiment or analysis?

Select one:

◉ variable ✔

○ data set

○ statistics

○ population

Refer to curriculum topic: 3.1.1

Variables are the key characteristics that are measured or observed as part of an experiment or an analysis.

The correct answer is: variable

Question **11**

Correct

Mark 2.00 out of 2.00

Which term is used to describe a graph of distribution where the peak is left of center or right of center?

Select one:

○ skewed                                                                                        ✔

○ normal

○ bimodal

○ symmetric

Refer to curriculum topic: 3.1.3
When a graph of distribution has the peak left or right of center, this is known as skew.

The correct answer is: skewed

---

Question **12**

Correct

Mark 2.00 out of 2.00

Which statement is an accurate description of discrete variables?

Select one:

○ Discrete variables are qualitative and consist of two or more categories in which order matters.

○ They are quantitative with a continuous range of values.

○ They are quantitative with a finite set of values.                                             ✔

○ They are qualitative and consist of two or more categories of values in which order does not matter.

Refer to curriculum topic: 3.1.1
Variables are either categorical or numeric. Numerical variables are qualitative and are either continuous or discrete. Discrete variables are those from a finite set of values such as the number of users on the network.

The correct answer is: They are quantitative with a finite set of values.

Question **13**

Correct

Mark 2.00 out of 2.00

What is a measurement of central tendency that is also known as the average?

Select one:

- ◯ mode
- ◯ mean ✔
- ◯ median
- ◯ Person r

Refer to curriculum topic: 3.1.3
There are three common measures of central tendency: mean, median, and mode. Each expresses the values that a variable has that is closest to the central distribution of a data set. The mean is also known as the average, which is the sum of all data divided by the number of values in the data set.

The correct answer is: mean

Question **14**

Correct

Mark 2.00 out of 2.00

What is a purpose of using the **head** Linux command?

Select one:

- ◯ to determine the size of the file
- ◯ to display the permissions on the file
- ◯ to verify that the file is available and preview the first few lines ✔
- ◯ to determine whether the file contains enough code to be executable

Refer to curriculum topic: 3.1.4
The **head** Linux command reads the first few lines of a file and writes them to the standard output (by default, the display screen). This command is useful to verify the existence and the content of a file before it is imported into pandas.

The correct answer is: to verify that the file is available and preview the first few lines

Question **15**

Correct

Mark 2.00 out of 2.00

Which term is used to describe the difference between the highest and the lowest values for a variable?

Select one:

- ○ range ✔
- ○ mode
- ○ variance
- ○ standard deviation
- ○ skew

Refer to curriculum topic: 3.1.3
The range is the difference between the highest and lowest values for a variable. By knowing the range, someone looking at the data can have a basic idea if the data is making sense.

The correct answer is: range

Question **16**

Correct

Mark 2.00 out of 2.00

Which term is used to describe the right and left ends of a distribution graph?

Select one:

- ○ tail ✔
- ○ end
- ○ peak
- ○ axis

Refer to curriculum topic: 3.1.3
On a distribution curve, the right and left ends of the graphed curve are known as the tails.

The correct answer is: tail

◄ Chapter 3 Terms and Concepts Practice

Jump to...

Read Chapter 4: Advanced Data Analytics and Machine Learning ►

Terms and Conditions

Privacy Statement

Cookie Policy

Data Protection

Trademarks

Data Protection

Accessibility