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GRADE
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Course challenge

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75%

1. The collection, transformation, and organization of data in order to draw conclusions, make predictions, and drive informed decision-making describes what? **1 / 1 point**

- (•) Data analysis
- ( ) Data science
- ( ) Data analytics
- ( ) Data life cycle

Correct
Correct! Data analysis is the collection, transformation, and organization of data in order to draw conclusions, make predictions, and drive informed decision-making.

2. Billings Upholstery has defined a problem it needs to solve: Find a more environmentally friendly way to produce its furniture. A data analyst gathers relevant data, analyzes it, and uses it to draw conclusions. The analyst then shares their analysis with subject-matter experts from the manufacturing team, who validate the findings. Finally, a plan is put into action. This scenario describes what process? **1 / 1 point**

- (•) Data-driven decision-making
- ( ) Customer service
- ( ) Data science
- ( ) Identification of trends

Correct
Correct! This company has put data at the heart of its business strategy in order to achieve data-driven decision-making.

3. Awareness of the condition in which something exists or happens describes which analytical skill? **1 / 1 point**

- (•) Understanding context
- ( ) Data design
- ( ) Curiosity
- ( ) Having a technical mindset

Correct
Correct! Context is the condition in which something exists or happens. This can be a structure or an environment.

4. Analytical thinking involves five key aspects, including correlation. Correlation involves figuring out all of the specifics that help you execute a plan. **1 / 1 point**

- ( ) True
- (•) False

Correct
Correct! Correlation involves being able to identify a relationship between two or more pieces of data.

5. The five whys is a technique that involves asking, "Why?" five times in order to achieve what goal? **1 / 1 point**

- ( ) Visualize how a process should look in the future.
- ( ) Put a plan into action.
- ( ) Use facts to guide business strategy.
- (•) Identify the root cause of a problem.

✓ **Correct**

Correct! A root cause is the reason why a problem occurs. In the five whys, you ask, "Why?" five times to identify it.

6. In which stage of the data life cycle does a business decide what kind of data it needs, how the data will be managed, and who will be responsible for it? **1 / 1 point**

- ○ Manage
- ◉ Plan
- ○ Capture
- ○ Analyze

✓ **Correct**

Correct! During planning, a business decides what kind of data it needs, how it will be managed throughout its life cycle, who will be responsible for it, and the optimal outcomes.

7. A data analyst has finished an analysis project that involved private company data. They erase the digital files in order to keep the information secure. This describes which stage of the data life cycle? **1 / 1 point**

- ○ Manage
- ◉ Destroy
- ○ Plan
- ○ Archive

✓ **Correct**

Correct! Destroying data in order to keep it secure is part of the final stage of the data life cycle.

8. A company takes the insights provided by its data analytics team, validates them, and finalizes a strategy. Then, a plan is put to work in order to solve the original business problem. Fill in the blank: This describes which step of the data analysis process? **1 / 1 point**

- ○ Analyze
- ○ Share
- ○ Process
- ◉ Act

✓ **Correct**

Correct! The act phase is when insights are put into action.

9. A function is a set of instructions that performs a specific calculation using spreadsheet data. **1 / 1 point**

- ○ True
- ◉ False

✓ **Correct**

Correct! A formula is a set of instructions that performs a specific calculation using the data in a spreadsheet.

10. As a data analyst, it's important to help create systems that are fair and inclusive to everyone. Being fair involves ensuring that analysis doesn't lead to conclusions that people disagree with. **0 / 1 point**

- ◉ True
- ○ False

! **Incorrect**

Incorrect. Review the section on fairness for a refresher.

11. **Scenario 1, question 11-15** **0 / 1 point**

You've just started a new job as a data analyst. You're working for a midsized pharmacy chain with 38 stores in the American Southwest. Your supervisor shares a new data analysis project with you.

She explains that the pharmacy is considering discontinuing a bubble bath product called Splashtastic. Your supervisor wants you to analyze sales data and determine what percentage of each store's total daily sales come from that product. Then, you'll present your findings to leadership.

You know that it's important to follow each step of the data analysis process: ask, prepare, process, analyze, share, and act. So, you begin by defining the problem and making sure you fully understand stakeholder expectations.

One of the questions you ask is where to find the dataset you'll be working with. Your supervisor explains that the company database has all the information you need.

Next, you continue to the prepare step. You access the database and write a query to retrieve data about Splashtastic. You notice that there are only 38 rows of data, representing the company's 38 stores. In addition, your dataset contains six columns: Store Number, Average Daily Customers, Average Daily Splashtastic Sales (Units), Average Daily Splashtastic Sales (Dollars), and Average Total Daily Sales (All Products).

Considering the size of your dataset, you decide a spreadsheet will be the best tool for your project. You proceed by downloading the data from the database. Describe why this is the best choice.

- ○ Spreadsheets are most effective when working with queries.
- ○ Databases can't be used for analysis.
- ○ Spreadsheets work well for processing and analyzing a small dataset, like the one you're using.
- ◉ Only spreadsheets let you download and upload data.

! **Incorrect**
Incorrect. Review the section on data analysis tools for a refresher.

12. **Scenario 1 continued** — 0 / 1 point

You've downloaded the data from your company database and imported it into a spreadsheet. Click here to see your spreadsheet.

Now, it's time to process the data. As you know, this step involves finding and eliminating errors and inaccuracies that can get in the way of your results. While cleaning the data, you notice that information about Splashtastic is missing in row 16. Select the best course of action.

- ○ Call the store associated with row 16, and ask the sales associate how Splashtastic has been selling.
- ○ Email your supervisor to ask for guidance.
- ◉ Delete row 16 from your dataset so the missing data doesn't get in the way of your results.
- ○ Identify another store with similar customer and sales numbers, and use their data about Splashtastic.

! **Incorrect**
Incorrect. Review the section on data analysis tools for a refresher.

13. **Scenario 1 continued** — 1 / 1 point

Once you've found the missing information, you analyze your dataset. You use a formula to determine how much of each store's daily sales come from sales of Splashtastic. Click here to see your updated spreadsheet.

During analysis, you create a new column F. At the top of the column, you add the attribute Average Percentage of Total Sales - Splashtastic. Select the correct definition for an attribute.

- ◉ A characteristic or quality of data used to label a column
- ○ An observation of data within a column
- ○ All of the characteristics of something contained in a table
- ○ A headline or subhead

✓ **Correct**
Correct! An attribute is a characteristic or quality of data used to label a column.

14. **Scenario 1 continued** — 1 / 1 point

Next, you determine the average percentage that Splashtastic sales represent for all 38 stores. To do this, you type a function in cell H2. Fill in the blank to complete the function correctly: =____ (F:F).

- ◉ AVERAGE
- ○ SELECT
- ○ FROM
- ○ WHERE

✓ **Correct**
Correct! The function begins with an equal sign (=), then the word AVERAGE. The range is all of column F, represented by F:F.

15. **Scenario 1 continued** — 1 / 1 point

You've reached the share phase of the data analysis process. It involves which of the following? Select all that apply.

- [x] Create a data visualization to highlight that Splashtastic represents 1.24% of total sales on average.

Correct
Correct! The share phase involves creating data visualizations, preparing your presentation, and communicating your findings to stakeholders.

- [x] Present your findings about Splashtastic to stakeholders.

Correct
Correct! The share phase involves creating data visualizations, preparing your presentation, and communicating your findings to stakeholders.

- [ ] Stop selling Splashtastic because it only represents an average of 1.24% of total sales.

- [x] Prepare a slideshow about Splashtastic's sales and practice your presentation.

Correct
Correct! The share phase involves creating data visualizations, preparing your presentation, and communicating your findings to stakeholders.

16. **Scenario 2, questions 11-20** — 1 / 1 point

You've been working for the nonprofit National Dental Society (NDS) as a junior data analyst for about two months. The mission of the NDS is to help its members advance the oral health of their patients. NDS members include dentists, hygienists, and dental office support staff.

The NDS is passionate about patient health. Part of this involves automatically scheduling follow-up appointments after crown replacement, emergency dental surgery, and extraction procedures. NDS believes the follow-up is an important step to ensure patient recovery and minimize infection.

Unfortunately, many patients don't show up for these appointments, so the NDS wants to create a campaign to help its members learn how to encourage their patients to take follow-up appointments seriously. If successful, this will help the NDS achieve its mission of advancing the oral health of all patients.

Your supervisor has just sent you an email saying that you're doing very well on the team, and he wants to give you some additional responsibility. He describes the issue of many missed follow-up appointments. You are tasked with analyzing data about this problem, and presenting your findings using data visualizations.

An NDS member with three dental offices in Maine offers to share its data on missed appointments. So, your supervisor uses a database query to access the dataset from the dental group. The query instructs the database to retrieve all patient information from the member's three dental offices, located in zip code 04000.

Select the query your supervisor used, based on the information he shared in his email.

- ( )
```
SELECT data
FROM dental_data_table
WHERE zip_code = 04000
```

- (•)
```
SELECT *
FROM dental_data_table
WHERE zip_code = 04000
```

- ( )
```
SELECT data
FROM zip_code = 04000
WHERE dental_data_table
```

- ( )
```
SELECT *
FROM dental_data_table
WHERE = 04000
```

Correct
Correct! The asterisk (*) tells the database to retrieve all data, and WHERE tells the database to include data that matches the 04000 zip code.

17. **Scenario 2 continued** — 0 / 1 point

The dataset your supervisor retrieved and imported into a spreadsheet includes a list of patients, their demographic information, dental procedure types, and whether they attended their follow-up appointment. Click here to view the dataset.

The patient demographic information includes data such as age and gender. As you're learning, it's your responsibility as a data analyst to make sure your analysis is fair. Which aspect of patient demographics might

get in the way of fairness?

- The dataset represents people who are single.
- The dataset indicates which dental procedure the patients had performed.
- (selected) The dataset contains patient identification numbers.
- The dataset includes people who all live in the same zip code.

! **Incorrect**
Incorrect. Review the section on fairness for a refresher.

18. **Scenario 2 continued** — 1 / 1 point

As you're reviewing the dataset, you notice that there are a disproportionate number of senior citizens. So, you investigate further and find out that this zip code represents a rural community in Maine with about 800 residents. In addition, there's a large assisted-living facility in the area. Nearly 300 of the residents in the 04000 zip code live in the facility.

You recognize that's a sizable number, so you want to find out if age has an effect on a patient's likelihood to attend a follow-up dental appointment. You analyze the data, and your analysis reveals that older people tend to miss follow-ups more than younger people.

So, you do some research online and discover that people over the age 60 are 50% more likely to miss dentist appointments. Sometimes this is because they're on a fixed income. Also, many senior citizens lack transportation to get to and from appointments.

With this new knowledge, you write an email to your supervisor expressing your concerns about the dataset. He agrees with your concerns, but he's also impressed with what you've learned and thinks your findings could be very important to the project. He asks you to change the business task. Now, the NDS campaign will be about educating dental offices on the challenges faced by senior citizens and finding ways to help them access quality dental care.

Changing the business task involves defining the new question or problem to be solved.

- (selected) True
- False

✓ **Correct**
Feedback: Correct! A business task is the question or problem data analysis answers for a business.

19. **Scenario 2 continued** — 1 / 1 point

You continue with your analysis. In the end, your findings support what you discovered during your online research: As people get older, they're less likely to attend follow-up dental visits.

But you're not done yet. You know that data should be combined with human insights in order to lead to true data-driven decision-making. So, your next step is to share this information with people who are familiar with the problem. They'll help verify the results of your data analysis.

The people who are familiar with a problem and help verify the results of data analysis include customers and competitors.

- True
- (selected) False

✓ **Correct**
Correct! Subject matter experts look at the results of data analysis to identify any inconsistencies, make sense of the gray areas, and eventually validate the choices being made.

20. **Scenario 2 continued** — 0 / 1 point

The subject-matter experts are impressed by your analysis. The team agrees to move to the next step: data visualization. You know it's important that stakeholders at NDS can quickly and easily understand that older people are less likely to attend important follow-up dental appointments. This will help them create an effective campaign for members.

It's time to create your presentation to stakeholders. It will include a data visualization that demonstrates the trend of people being less likely to attend follow-up appointments as they get older. Which type of chart will be most effective?

- A line chart
- (selected) A table
- A pie chart
- A donut chart

! **Incorrect**
Incorrect. Review the section on fairness for a refresher.