

GRADED QUIZ- FROM PROBLEMS TO APPROACH

Your grade: 100%

Your latest: **100%** • Your highest: **100%** • To pass you need at least 60%. We keep your highest score.

Next item →

1. In a data science project, what is the role of the Business Understanding stage in guiding data collection efforts?

1 / 1 point

- ☐ The Business Understanding stage ensures that the collected data is free of errors or outliers.
- ☐ The Business Understanding stage determines the type of visualization techniques data scientists will use used for reporting results.
- ☐ The Business Understanding stage determines the number of data points needed for statistical significance.
- ☒ The Business Understanding stage identifies the data sources and variables required to address the business problem.

✓ **Correct**

Correct! The Business Understanding stage is critical for guiding data collection efforts. Identifying the relevant data sources and variables ensures that the collected data is aligned with the business problem and supports the analysis effectively.

2. A company wants to reduce customer churn in its subscription-based service to increase customer retention and overall revenue. What is the primary goal of the business understanding stage in this situation?

1 / 1 point

- ☐ Identifying the most popular subscription plan.
- ☐ Analyzing historical customer complaints.
- ☐ Conducting a market analysis of competitor services.
- ☒ Understanding the factors contributing to customer churn.

✓ **Correct**

Correct! In this scenario, the primary goal of the Business Understanding stage is to identify and understand the factors that lead to customer churn in the subscription-based service. This understanding will help the company devise appropriate strategies to reduce churn and improve customer retention.

3. What is the primary goal of the analytical approach in a data science project?

1 / 1 point

- ☒ To iteratively explore and analyze data to find actionable insights.
- ☐ To create visually appealing dashboards and reports.
- ☐ To employ the most complex algorithms for accurate predictions.
- ☐ To gather as much data as possible for analysis.

✓ **Correct**

4. Based on the Business Understanding processes described in the video, which of the following options lists the first step data scientists take to attain business understanding?

1 / 1 point

- ☐ Identifying the objectives that support the goal
- ☐ Engaging management
- ☐ Engage all the stakeholders
- ☒ Understand the goal

✓ **Correct**

Correct! Understanding the goal is the first step of the Business Understanding stage.

5. What type of analytics would be most suitable for anticipating customer preferences based on historical purchase data?

1 / 1 point

- ☒ Predictive Modeling
- ☐ Classification Modeling
- ☐ Statistical Modeling
- ☐ Descriptive Modeling

✓ **Correct**

Correct! Predictive analytics predicts future events or customer behavior based on historical data. In this case, data scientists use this technique to forecast customer preferences and recommend personalized product offerings.

GRADED QUIZ – FROM REQUIREMENTS TO COLLECTION

Your grade: 100%

Your latest: **100%** • Your highest: **100%** • To pass you need at least 60%. We keep your highest score.

Next item →

1. In the context of data science methodology, select the answer that describes what happens during the Data Requirements stage.

1 / 1 point

- ☐ Selecting the programming language for analysis
- ☒ Identifying the necessary data content, formats, and sources
- ☐ Organizing data into columns and rows
- ☐ Defining the ingredients needed for a meal

✓ **Correct**

Correct! The Data Requirements stage in data science involves identifying the necessary data content, formats, and sources for the analysis. This stage is comparable to identifying the ingredients needed for a meal before cooking.

2. What technique can you apply to the data set during the data collection stage to assess data content, quality, and initial insights?

1 / 1 point

- ☒ Data visualization and descriptive statistics
- ☐ Predictive model
- ☐ Data preparation
- ☐ Data extraction and merging

✓ **Correct**

Correct! You can apply data visualization and descriptive statistics to the data set during the data collection stage to assess content, quality, and initial insights about the data, similar to examining the ingredients on a cutting board.

3. Imagine you are a data scientist working on a healthcare project. Your task is to define the data requirements for a decision tree classification approach to predict patient readmission rates.

1 / 1 point

Select the answer that describes the purpose of defining data requirements in the context of the healthcare project.

- ☐ To select the appropriate patients for the cohort
- ☒ To identify the necessary data content, formats, and source
- ☐ To identify the best programming language for analysis
- ☐ To determine the total budget for the project

✓ **Correct**

Correct! Defining data requirements involves identifying the necessary data content, formats, and sources for the analysis, similar to identifying the ingredients needed for a meal.

4. You are a data scientist tasked with collecting and preparing data for a predictive modelling project related to patient outcomes. You have encountered some data sources, mainly drug information, that are missing. How would you handle this situation?

1 / 1 point

What is a suitable approach when encountering missing data sources in the data collection process context?

- ☐ Exclude the entire patient cohort from the analysis.
- ☒ Attempt to acquire the missing data after obtaining intermediate results.
- ☐ Proceed with incomplete data and hope for accurate results.
- ☐ Discard the project and start over with a different methodology.

✓ **Correct**

Correct! In the provided scenario, it is acceptable to defer decisions about unavailable data and attempt to acquire the data later, such as after obtaining intermediate results from predictive modeling.

5. Which stage of the methodology involves collaborating with DBAs and programmers to extract and merge data from various sources?

1 / 1 point

- ☐ Data Preparation
- ☒ Data Collection
- ☐ Data Requirements
- ☐ Data Understanding

✓ **Correct**

Correct! Data collection involves extracting and merging data from various sources, and collaboration with DBAs and programmers is essential to ensuring data quality and efficiency.

GRADED QUIZ- LESSON 1 FROM UNDERSTANDING TO PREPARATION

Your grade: 100%

Your latest: **100%** • Your highest: **100%** • To pass you need at least 80%. We keep your highest score.

Next item →

1. What is the primary role of the data understanding phase in the data science methodology?

1 / 1 point

- ☐ Creating data visualizations
- ☒ Assessing data quality and representativeness
- ☐ Building machine learning models
- ☐ Running complex algorithms

✓ **Correct**

Correct! The data understanding phase aims to determine if the collected data represents the problem to be solved.

2. How does the Data Preparation stage affect the next steps in a data science project?

1 / 1 point

- ☐ The Data Preparation stage defines the problem statement.
- ☐ The Data Preparation stage determines the project timeline.
- ☐ The Data Preparation stage ensures data visualization accuracy.
- ☒ The Data Preparation stage provides clean and formatted data for analysis.

✓ **Correct**

Correct! The Data Preparation stage provides clean and formatted data for analysis. Data preparation creates the foundation for effective data analysis and model creation.

3. Why is the Data Preparation stage considered time-consuming for a data science project?

1 / 1 point

- ☐ This stage involves running complex algorithms
- ☒ This stage involves transforming data into a usable format
- ☐ This stage requires a deep understanding of machine learning
- ☐ This stage requires creating advanced data visualizations.

✓ **Correct**

Correct! The Data Preparation stage encompasses various tasks, including data transformation and quality improvement. This stage is time-consuming as it lays the foundation for effective analysis.

4. What is the purpose of feature engineering during the Data Preparation stage?

1 / 1 point

- ☐ You'll use feature engineering to address missing data values
- ☐ You'll use feature engineering to create models and algorithms
- ☐ You'll use feature engineering to remove duplicate data values
- ☒ You'll use feature engineering to create meaningful characteristics for machine learning



Correct

Correct! Feature engineering involves using domain knowledge to create features that enhance machine learning algorithms.

5. How does automating data collection and preparation processes affect the overall project time?

1 / 1 point

- ☐ Automating data collection and preparation prolongs the data science project timeline
- ☒ Automating data collection and preparation can reduce data preparation time by up to 50 percent
- ☐ Automating data collection and preparation processes significantly reduces data collection time
- ☐ Automating data collection and preparation minimizes the need for data understanding



Correct

Correct! Automation can reduce data preparation time by up to 50 percent. Automation allows data scientists to spend more time focusing on model creation.

GRADED QUIZ- LESSON 2- FROM MODELLING TO EVALUATION

Your grade: 100%

Your latest: **100%** • Your highest: **100%** • To pass you need at least 80%. We keep your highest score.

Next item →

1. What is the main purpose of data modeling in the data science methodology?

1 / 1 point

- ☐ To collect and compile raw data
- ☒ To develop models for descriptive or predictive purposes
- ☐ To refine and adjust the problem statement
- ☐ To select an appropriate analytical approach

✓ **Correct**

To develop models for descriptive or predictive purposes. Data modeling involves creating models that provide insights or predictions based on the data.

2. How does a training set contribute to predictive modeling?

1 / 1 point

- ☐ A training set contains variables that are not required for modeling
- ☒ A training set serves as a calibration gauge for the model
- ☐ A training set provides a set of unknown outcomes
- ☐ It helps select appropriate algorithms

✓ **Correct**

A training set serves as a calibration gauge for the model. Data scientists use training sets consisting of historical data with known outcomes to assess and adjust the model's performance.

3. What is the primary purpose of model evaluation in the data science methodology?

1 / 1 point

- ☐ To refine the data collection process
- ☐ To determine the optimal parameter values for model building
- ☐ To deploy the model and monitor its performance
- ☒ To assess the quality of the model and ensure it meets the initial request

✓ **Correct**

To assess the quality of the model and ensure it meets the initial request. Model evaluation helps determine if the model effectively addresses the problem and provides accurate results.

4. What is the purpose of diagnostic measures during model evaluation?

1 / 1 point

- ☒ To ensure the model is working as intended
- ☐ To test the model's statistical significance
- ☐ To refine the model's design for predictive outcomes
- ☐ To assess the quality of relationships in a descriptive model

✓ **Correct**

To ensure the model is working as intended. Diagnostic measures help identify areas where the model may need adjustments or refinements.

5. What does the ROC curve help determine in model evaluation?

1 / 1 point

- ☒ The true-positive rate and false-positive rate for different criteria
- ☐ The model's statistical significance
- ☐ The optimal model based on diagnostic measures
- ☐ The relative misclassification cost of the model

✓ **Correct**

The true-positive rate and false-positive rate for different criteria. The ROC curve helps visualize the performance of a binary classification model by showing how well it classifies positive and negative outcomes.

MODULE 3 – GRADED QUIZ

FROM DEPLOYMENT TO FEEDBACK

Your grade: 80%

Your latest: **80%** • Your highest: **80%** • To pass you need at least 80%. We keep your highest score.

Next item →

1. Which of the following options is essential for ensuring the relevance and usefulness of the answer derived from a data science model?

0 / 1 point

- ☒ The availability of data
- ☐ The number of stakeholders involved
- ☐ Familiarity of stakeholders with the tool produced
- ☐ The complexity of the model

✗ **Incorrect**

Incorrect. Review the Deployment video.

2. In a business scenario, who are the stakeholders that help make the model's answer relevant?

1 / 1 point

- ☐ Data scientists and statisticians.
- ☒ Solution owners, marketing, application developers, and IT administration.
- ☐ Hospital staff and patients.
- ☐ Cognos application developers.

✓ **Correct**

Correct! In a business scenario, stakeholders have different specialties to help make this happen, such as the solution owner, marketing, application developers, and IT administration.

3. Which of the following statements describes how data scientists refine the model after the initial deployment and feedback stages?

1 / 1 point

- ☐ By collecting more data from controlled groups.
- ☐ By automating the intervention program.
- ☐ By conducting a complete overhaul of the model.
- ☒ By incorporating information about participation and possibly refining with detailed pharmaceutical data.

✓ **Correct**

Correct! Other refinements included incorporating information about participation in the intervention

4. How does the data science methodology ensure continuous improvement?

1 / 1 point

- ☒ By incorporating feedback and making adjustments
- ☐ By automating the entire process
- ☐ By making the methodology linear and rigid
- ☐ By only relying on expert opinions

✓ **Correct**

Correct. Making the methodology cyclical ensures refinement at each stage in the game.

5. What is the primary purpose of storytelling in data science?

1 / 1 point

- ☒ To communicate complex findings and insights effectively
- ☐ To impress colleagues with technical jargon
- ☐ To showcase programming skills
- ☐ To highlight personal achievements

✓ **Correct**

Storytelling helps to communicate insights and results effectively to non-technical stakeholders. Storytelling is crucial to data and analytics. Storytelling is how you convey your message. Everyone can show numbers, but if you don't have a story and if you don't have a compelling reason to act, then, ultimately, what you're presenting will not resonate with your audience.

FINAL QUIZ

Your grade: 100%

Your latest: **100%** • Your highest: **100%** • To pass you need at least 70%. We keep your highest score.

Next item →

1. Fill in the blank. The first stage of the _____ is Business Understanding.

1 / 1 point

- ☐ Data analysis methodology
- ☒ Data science methodology
- ☐ Computer modeling methodology
- ☐ Data collection methodology

✓ **Correct**

Correct! Review the Business Understanding video.

2. Fill in the blank. _____ is an important stage in the data science methodology because the stage clearly defines the problem and the needs from a business perspective.

1 / 1 point

- ☐ Data Understanding
- ☐ Data Collection
- ☒ Business Understanding
- ☐ Modeling

✓ **Correct**

Correct! Business Understanding is an important stage in the data science methodology because the stage clearly defines the problem and the needs from a business perspective

3. During the Data Collection stage, data scientists apply techniques such as _____ and visualization to the data set to assess the content and quality and to gain initial insights about the data.

1 / 1 point

- ☐ The unsupervised method
- ☐ The supervised method
- ☒ Descriptive statistics
- ☐ Data manipulation

✓ **Correct**

Correct! During the Data Collection stage, data scientists apply descriptive statistics and visualization

4. Fill in the blank. A _____ is used for predictive modeling.

1 / 1 point

- ☒ Training set
- ☐ Technique set
- ☐ Modeling set
- ☐ Analysis set

✓ **Correct**

Correct! A training set is used for predictive modeling.

5. Fill in the blank. A _____ is a Type II error.

1 / 1 point

- ☐ False-alarm error
- ☐ False-positive error
- ☐ Hypothesis error
- ☒ False-negative error

✓ **Correct**
Correct! A false negative is a Type II error.

6. Select the correct statement about the Data Preparation stage.

1 / 1 point

- ☐ During the Data Preparation stage, data scientists ignore missing values.
- ☒ During the Data Preparation stage, data scientists correct invalid values and address outliers.
- ☐ During the Data Preparation stage, data scientists ignore duplicate data.
- ☐ During the Data Preparation stage, data scientists use the data without any formatting.

✓ **Correct**
Correct! Data scientists correct invalid values during the Data Preparation stage and address outliers.

7. Which of the following stages occurs early during the data science methodology process?

1 / 1 point

- ☐ Evaluation
- ☐ Deployment
- ☐ Feedback
- ☒ Data Preparation

✓ **Correct**
Correct! The Data Preparation stage occurs early during the data science methodology process.

8. Select the correct sentence about the data science methodology as explained in the course.

1 / 1 point

- ☐ Data science methodology provides data scientists with a framework for answering to management.
- ☒ Data science methodology always starts with Business Understanding.
- ☐ The data science methodology requires going through all of the stages successively before going through the stages again.
- ☐ Data science methodology depends on specific technologies or tools.

✓ **Correct**
Correct! Review the Data Science Methodology Overview video.

9. For which type of analysis do data scientists use descriptive statistics and data visualization techniques?

1 / 1 point

- ☐ Deep learning
- ☐ Extraction
- ☒ Exploratory
- ☐ Classification

✓ **Correct**

Correct! Data scientists use descriptive statistics and data visualization techniques for exploratory analysis.

10. How does storytelling contribute to the work of data scientists?

1 / 1 point

- ☒ Storytelling helps convey data insights and drive actions.
- ☐ Storytelling is unrelated to the field of data analysis
- ☐ Storytelling is only important for executive-level presentations
- ☐ Storytelling enhances data visualization techniques

✓ **Correct**

Correct! Storytelling contributes to the work of data scientists by conveying data insights and driving actions.