Launching into Machine Learning

Quiz Question Answers

Module 2: Improve Data Quality and Exploratory Data Analysis

Improve data Quality

Question 1: Which of the following is not a Data Quality attribute?

A: Consistency
Feedback: This is incorrect, please review the module again

B: Accuracy
Feedback: This is incorrect, please review the module again

C: Auditability
Feedback: This is incorrect, please review the module again

*D: Redundancy
Feedback: This answer is correct.

Question 2: Which of the following are categories of data quality tools?

A: Cleaning tools
Feedback: This answer is partially correct, please review the module again.

B: Monitoring tools
Feedback: This answer is partially correct, please review the module again.

*C: Both A and B
Feedback: This answer is correct.

D: None of the above
Feedback: This is incorrect, please review the module again

Question 3: What are the features of low data quality?

A: Unreliable info
Feedback: This answer is partially correct, please review the module again.

B: Incomplete data
Feedback: This answer is partially correct, please review the module again.

C: Duplicated data
Feedback: This answer is partially correct, please review the module again.

*D: All of the above
Feedback: This answer is correct.

Question 4: Which of the following refers to the Orderliness of data?

A: The data record with specific details appears only once in the database
Feedback: This is incorrect, please review the module again

*B: The data entered has the required format and structure
Feedback: This answer is correct.

C: The data represents reality within a reasonable period
Feedback: This is incorrect, please review the module again

D: None of the above
Feedback: This is incorrect, please review the module again

Question 5: Which of the following are best practices for data quality management?

A: Resolving missing values
Feedback: This answer is partially correct, please review the module again.

B: Preventing duplicates
Feedback: This answer is partially correct, please review the module again.

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C: Automating data entry
Feedback: This answer is partially correct, please review the module again.

*D: All of the above
Feedback: This answer is correct.

Exploratory Data Analysis

Question 1: Which is the correct sequence of steps in data analysis and data visualisation of Exploratory Data Analysis?

A: Data Exploration -> Data Cleaning -> Present Results -> Model Building
Feedback: This answer is incorrect, please review the module again.

*B: Data Exploration -> Data Cleaning -> Model Building -> Present Results
Feedback: This answer is correct.

C: Data Exploration -> Model Building -> Present Results -> Data Cleaning
Feedback: This answer is incorrect, please review the module again.

D: Data Exploration -> Model Building -> Data Cleaning -> Present Results
Feedback: This answer is incorrect, please review the module again.

Question 2: What are the objectives of exploratory data analysis?

A: Check for missing data and other mistakes.
Feedback: This answer is partially correct, please review the module again.

B: Gain maximum insight into the data set and its underlying structure.
Feedback: This answer is partially correct, please review the module again.

C: Uncover a parsimonious model, one which explains the data with a minimum number of predictor variables.
Feedback: This answer is partially correct, please review the module again.

*D: All of the above
Feedback: This answer is correct.

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Question 3: Which of the following is not true about Exploratory Data Analysis?

A: Generates a posteriori hypothesis.
Feedback: This answer is incorrect, please review the module again.

B: Discovers new knowledge.
Feedback: This answer is incorrect, please review the module again.

*C: Does not provide insight into the data.
Feedback: This answer is correct.

D: Deals with unknowns.
Feedback: This answer is incorrect, please review the module again.

Question 4: Exploratory Data Analysis is majorly performed using the following methods:

A: Univariate
Feedback: This answer is partially correct, please review the module again.

B: Bivariate
Feedback: This answer is partially correct, please review the module again.

*C: Both A and B
Feedback: This answer is correct.

D: None of the above
Feedback: This answer is incorrect, please review the module again.

Question 5
Which of the following is not a component of Exploratory Data Analysis?

A: Accounting and Summarizing
Feedback: This answer is incorrect, please review the module again.

B: Anomaly Detection
Feedback: This answer is incorrect, please review the module again.

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C: Statistical Analysis and Clustering
Feedback: This answer is incorrect, please review the module again.

*D: Hyperparameter tuning
Feedback: This answer is correct.

Module 3: Practical ML

Supervised Learning

Question 1: Which of the following machine learning models have labels, or in other words, the correct answers to whatever it is that we want to learn to predict?

A: Unsupervised Model
Feedback: This answer is incorrect, please review the module again.

*B: Supervised Model
Feedback: This answer is correct.

C: Reinforcement Model
Feedback: This answer is incorrect, please review the module again.

D: None of the above.
Feedback: This answer is incorrect, please review the module again.

Question 2: Which statement is true?

A: Depending on the problem you are trying to solve, the data you have, explainability, etc. will not determine which machine learning methods you use to find a solution.
Feedback: This answer is incorrect, please review the module again.

*B: Depending on the problem you are trying to solve, the data you have, explainability, etc. will determine which machine learning methods you use to find a solution.
Feedback: This answer is correct.

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C: Determining which machine learning methods you use to find a solution depends only on the problem or hypothesis.
Feedback: This answer is incorrect, please review the module again.

D: None of the above
Feedback: This answer is incorrect, please review the module again.

Question 3: What is a type of Supervised machine learning model?

A: Regression model.
Feedback: This answer is partially correct, please review the module again.

B: Classification model.
Feedback: This answer is partially correct, please review the module again.

*C: Both a & b
Feedback: This answer is correct.

D: None of the above
Feedback: This answer is incorrect, please review the module again.

Question 4: Which model would you use if your problem required a discrete number of values or classes?

A: Regression Model
Feedback: This answer is incorrect, please review the module again.

B: Unsupervised Model
Feedback: This answer is incorrect, please review the module again.

C: Supervised Model
Feedback: This answer is incorrect, please review the module again.

*D: Classification Model
Feedback: This answer is correct.

Question 5: When the data isn't labelled, what is an alternative way of predicting the output?

*A: Clustering Algorithms
Feedback: This answer is correct.

B: Linear regression
Feedback: This answer is incorrect, please review the module again.

C: Logistic regression
Feedback: This answer is incorrect, please review the module again.

D: None of the above
Feedback: This answer is incorrect, please review the module again.

Regression and Classification

Question 1: We can minimize the error between our predicted continuous value and the label's continuous value using which model?

*A: Regression
Feedback: This answer is correct.

B: Classification
Feedback: This answer is incorrect, please review the module again.

C: Both A and B
Feedback: This answer is incorrect, please review the module again.

D: None of the above.
Feedback: This answer is incorrect, please review the module again.

Question 2: To predict the continuous value of our label, which of the following algorithm is used?

A: Classification
Feedback: This answer is incorrect, please review the module again.

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*B: Regression
Feedback: This answer is correct.

C: Unsupervised
Feedback: This answer is incorrect, please review the module again.

D: None of the above
Feedback: This answer is incorrect, please review the module again.

Question 3: If we want to minimize the error or misclassification between our predicted class and the labels class, which of the following models can be used?

A: Regression
Feedback: This answer is incorrect, please review the module again.

B: Categorical
Feedback: This answer is incorrect, please review the module again.

*C: Classification
Feedback: This answer is correct.

D: None of the above
Feedback: This answer is incorrect, please review the module again.

Question 4: Let's say we want to predict the gestation weeks of a baby, what kind of machine learning model can be used?

A: Categorical
Feedback: This answer is incorrect, please review the module again.

*B: Regression
Feedback: This answer is correct.

C: Classification
Feedback: This answer is incorrect, please review the module again.

D: None of the above.
Feedback: This answer is incorrect, please review the module again.

Question 5: What is the most essential metric a regression model uses?

*A: Mean squared error as their loss function
Feedback: This answer is correct.

B: Cross entropy
Feedback: This answer is incorrect, please review the module again.

C: Both a & b
Feedback: This answer is incorrect, please review the module again.

D: None of the above
Feedback: This answer is incorrect, please review the module again.

Linear Regression

Question 1: Fill in the blanks. In the video, we presented a linear equation. This hypothesis equation is applied to every _____ of our dataset, where the weight values are fixed, and the feature values are from each associated column, and our machine learning data set.

*A: Row
Feedback: This answer is correct.

B: Column
Feedback: This answer is incorrect, please review the module again.

C: Row and Column
Feedback: This answer is incorrect, please review the module again.

D: None of the above
Feedback: This answer is incorrect, please review the module again.

Question 2: Which of the following statements is true?

*A: Typically, for linear regression problems , the loss function is Mean Squared Error.
Feedback: This answer is correct.

B: Typically, for classification problems , the loss function is Mean Squared Error.
Feedback: This answer is incorrect, please review the module again.

C: Both A and B
Feedback: This answer is incorrect, please review the module again.

D: None of the above
Feedback: This answer is incorrect, please review the module again.

Question 3: Fill in the blanks. Fundamentally, classification is about predicting a _____ and regression is about predicting a _____.

A: Quantity, Label
Feedback: This answer is incorrect, please review the module again.

B: RMSE, Label
Feedback: This answer is incorrect, please review the module again.

C: Log Loss, Label
Feedback: This answer is incorrect, please review the module again.

*D: Label, Quantity
Feedback: This answer is correct.

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Question 4: True or False: Classification is the problem of predicting a discrete class label output for an example, while regression is the problem of predicting a continuous quantity output for an example.

A: False.
Feedback: This answer is incorrect, please review the module again.

*B: True.
Feedback: This answer is correct.

Perceptron

Question 1: Which of the following is an algorithm for supervised learning of binary classifiers - given that a binary classifier is a function which can decide whether or not an input, represented by a vector of numbers, belongs to some specific class.

A: Binary classifier
Feedback: This is incorrect, please review the module again

*B: Perceptron
Feedback: This answer is correct.

C: Linear regression
Feedback: This is incorrect, please review the module again

D: None of the above.
Feedback: This is incorrect, please review the module again

Question 2: Which model is the linear classifier, also used in Supervised learning?

A: Neuron
Feedback: This is incorrect, please review the module again

B: Dendrites
Feedback: This is incorrect, please review the module again

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*C: Perceptron
Feedback: This answer is correct.

D: All of the above
Feedback: This is incorrect, please review the module again

Question 3: Which of the following statements is correct?

A: A perceptron is a type of sequential classifier, i.e. a classification algorithm that makes its predictions based on a linear predictor function combining a set of weights with the feature vector.
Feedback: This answer is incorrect, please review the module again.

B: A perceptron is a type of modular classifier, i.e. a classification algorithm that makes its predictions based on a linear predictor function combining a set of weights with the feature vector.
Feedback: This answer is incorrect, please review the module again.

C: A perceptron is a type of monitoring classifier.

*D: A perceptron is a type of linear classifier, i.e. a classification algorithm that makes its predictions based on a linear predictor function combining a set of weights with the feature vector.
Feedback: This answer is correct.

Question 4: What are the steps involved in the Perceptron Learning Process?

A: Takes the inputs, multiplies them by their weights, and computes their sum.
Feedback: This answer is partially correct, please review the module again.

B: Adds a bias factor, the number 1 multiplied by a weight.
Feedback: This answer is partially correct, please review the module again.

C: Feeds the sum through the activation function.
Feedback: This answer is partially correct, please review the module again.

*D: All of the above
Feedback: This answer is correct.

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Question 5: What are the elements of a perceptron?

A: Input function x
Feedback: This answer is partially correct, please review the module again.

B: Bias b
Feedback: This answer is partially correct, please review the module again.

C: Activation function
Feedback: This answer is partially correct, please review the module again.

*D: All of the above
Feedback: This answer is correct.

Neural Networks

Question 1: Which of the following activation functions are used for nonlinearity?

A: Sigmoid
Feedback: This answer is partially correct, please review the module again.

B: Hyperbolic tangent
Feedback: This answer is partially correct, please review the module again.

C: Tanh
Feedback: This answer is partially correct, please review the module again.

*D: All of the above
Feedback: This answer is correct.

Question 2: A single unit for a non-input neuron has _____ a/an

A: Weighted Sum
Feedback: This answer is partially correct, please review the module again.

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B: Activation function
Feedback: This answer is partially correct, please review the module again.

C: Output of the activation function
Feedback: This answer is partially correct, please review the module again.

*D: All of the above
Feedback: This answer is correct.

Question 3: If we wanted our outputs to be in the form of probabilities, which activation function should I choose in the final layer?

*A: Sigmoid
Feedback: This answer is correct.

B: Tanh
Feedback: This answer is incorrect, please review the module again.

C: ReLU
Feedback: This answer is incorrect, please review the module again.

D: ELU
Feedback: This answer is incorrect, please review the module again.

Question 4: Which activation functions are needed to get the complex chain functions that allow neural networks to learn data distributions.

A: Linear activation functions
Feedback: This answer is incorrect, please review the module again.

*B: Nonlinear activation functions
Feedback: This answer is correct.

C: All of the above
Feedback: This answer is incorrect, please review the module again.

D: None of the above
Feedback: This answer is incorrect, please review the module again.

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Question 5: Which activation function has a range between zero and Infinity?

A: Sigmoid
Feedback: This answer is incorrect, please review the module again.

B: Tanh
Feedback: This answer is incorrect, please review the module again.

*C: ReLU
Feedback: This answer is correct.

D: ELU
Feedback: This answer is incorrect, please review the module again.

Decision Trees AND Random Forests

Question 1: Decision trees are one of the most intuitive machine learning algorithms. They can be used for which of the following?

A: Classification
Feedback: This answer is partially correct, please review the module again.

B: Regression
Feedback: This answer is partially correct, please review the module again.

*C: Both A and B
Feedback: This answer is correct.

D: None of the above
Feedback: This answer is incorrect, please review the module again.

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Question 2: In a decision classification tree, what does each decision or node consist of?

A: Linear classifier of all features
Feedback: This answer is incorrect, please review the module again.

B: Mean squared error minimizer
Feedback: This answer is incorrect, please review the module again.

*C: Linear classifier of one feature
Feedback: This answer is correct.

D: Euclidean distance minimizer
Feedback: This answer is incorrect, please review the module again.

Question 3: A random forest is usually more complex than an individual decision tree; this makes it harder to visually interpret ?

*A: True
Feedback: This answer is correct.

B: False
Feedback: This answer is incorrect, please review the module again.

Question 4: Which of the following statements is true?

A: Mean squared error minimizer and euclidean distance minimizer are used in regression and classification.
Feedback: This answer is incorrect, please review the module again.

*B: Mean squared error minimizer and euclidean distance minimizer are used in regression, not classification.
Feedback: This answer is correct.

C: Mean squared error minimizer and euclidean distance minimizer are not used in regression and classification.
Feedback: This answer is incorrect, please review the module again.

D: Mean squared error minimizer and euclidean distance minimizer are used in classification, not regression.
Feedback: This answer is incorrect, please review the module again.

Kenal Methods

Question 1: Which of the following is the distance between two separate vectors?

*A: Margin
Feedback: This answer is correct.

B: Space
Feedback: This answer is incorrect, please review the module again.

C: New Line
Feedback: This answer is incorrect, please review the module again.

D: None of the above
Feedback: This answer is incorrect, please review the module again.

Question 2: Which of the following statements is true about a decision boundary?

*A: The more generalizable the decision boundary, the wider the margin.
Feedback: This answer is correct.

B: The less generalizable the decision boundary, the wider the margin.
Feedback: This answer is incorrect, please review the module again.

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C: The more generalizable the decision boundary, the less the margin.
Feedback: This answer is incorrect, please review the module again.

D: None of the above
Feedback: This answer is incorrect, please review the module again.

Question 3: Which of the following statements is true about Support Vector Machines (SVM)?

A: Support Vector Machines (SVMs) are a particularly powerful and flexible class of supervised algorithms for both classification and regression. SVM are used for text classification tasks such as category assignment, detecting spam, and sentiment analysis.
Feedback: This answer is partially correct, please review the module again.

B: SVMs are based on the idea of finding a hyperplane that best divides a dataset into two classes. Support vectors are the data points nearest to the hyperplane, the points of a data set that, if removed, would alter the position of the dividing hyperplane. As a simple example, for a classification task with only two features, you can think of a hyperplane as a line that linearly separates and classifies a set of data.
Feedback: This answer is partially correct, please review the module again.

*C: Both A and B
Feedback: This answer is correct.

D: None of the above
Feedback: This answer is incorrect, please review the module again.

Question 4: What is the significance of kernel transformation?

*A: It maps the data from our input vector space to a vector space that has features that can be linearly separated.
Feedback: This answer is correct.

B: It transforms the data from our input vector space to a vector space.
Feedback: This answer is incorrect, please review the module again.

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C: Both A and B
Feedback: This answer is incorrect, please review the module again.

D: None of the above
Feedback: This answer is incorrect, please review the module again.

Question 5: Which statement is true regarding kernel methods?

A: In machine learning, kernel methods are a class of algorithms for network infrastructure analysis, whose best known member is the support vector machine (SVM).
Feedback: This answer is incorrect, please review the module again.

B: In machine learning, kernel methods are a class of algorithms for cloud protocol analysis, whose best known member is the support vector machine (SVM).
Feedback: This answer is incorrect, please review the module again.

C: In machine learning, kernel methods are a class of algorithms for protocol analysis, whose best known member is the support vector machine (SVM).
Feedback: This answer is incorrect, please review the module again.

*D: In machine learning, kernel methods are a class of algorithms for pattern analysis, whose best known member is the support vector machine (SVM).
Feedback: This answer is correct.

Modern Neural Networks

Question 1: Which statement is true regarding the "dropout technique" used in neural networks?

*A: Dropout is a technique used to prevent a model from overfitting. Dropout works by randomly setting the outgoing edges of hidden units (neurons that make up hidden layers) to 0 at each update of the training phase.
Feedback: This answer is correct.

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B: Dropout is a technique used to prevent a model from underfitting. Dropout works by randomly setting the outgoing edges of hidden units (neurons that make up hidden layers) to 0 at each update of the training phase.
Feedback: This answer is incorrect, please review the module again.

C: Dropout is a technique used to prevent a model from overfitting. Dropout works by randomly setting the outgoing edges of hidden units (neurons that make up hidden layers) to 1 at each update of the training phase.
Feedback: This answer is incorrect, please review the module again.

D: None of the above
Feedback: This answer is incorrect, please review the module again.

Question 2: Which of the following statements is true?

*A: Dropout can help a model generalize by randomly setting the output for a given neuron to 0. In setting the output to 0, the cost function becomes more sensitive to neighbouring neurons changing the way the weights will be updated during the process of backpropagation.
Feedback: This answer is correct.

B: Dropout can help a model generalize by randomly setting the output for a given neuron to 1. In setting the output to 1, the cost function becomes more sensitive to neighbouring neurons changing the way the weights will be updated during the process of backpropagation.
Feedback: This answer is incorrect, please review the module again.

C: Both A and B
Feedback: This answer is incorrect, please review the module again.

D: None of the above
Feedback: This answer is incorrect, please review the module again.

Question 3: Which statement is true regarding neural networks?

A: Neural networks are a set of algorithms, modeled loosely after the human brain, that are designed to recognize patterns.
Feedback: This answer is partially correct, please review the module again.

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B: Neural networks interpret sensory data through a kind of machine perception, labeling or clustering raw input.
Feedback: This answer is partially correct, please review the module again.

C: The patterns neural networks recognize are numerical, contained in vectors, into which all real-world data, be it images, sound, text or time series, must be translated.
Feedback: This answer is partially correct, please review the module again.

*D: All of the above
Feedback: This answer is correct.

Question 4: Which of the following is not a type of modern neural network?

A: Convolutional Neural Network
Feedback: This answer is incorrect, please review the module again.

B: Modular Neural Network
Feedback: This answer is incorrect, please review the module again.

C: Recurrent Neural Network
Feedback: This answer is incorrect, please review the module again.

*D: Sine Neural Network
Feedback: This answer is correct.

Question 5: Which of the following are ways to improve generalization?

A: Adding dropout layers.   Dropout is a technique used to prevent a model from overfitting. Dropout works by randomly setting the outgoing edges of hidden units (neurons that make up hidden layers) to 0 at each update of the training phase.
Feedback: This answer is partially correct, please review the module again.

B: Performing data augmentation, which is a technique to artificially create new training data from existing training data. This is done by applying domain-specific techniques to examples from the training data that create new and different training examples.
Feedback: This answer is partially correct, please review the module again.

C: Adding noise, for example, adding Gaussian noise to input variables. Gaussian noise, or white noise, has a mean of zero and a standard deviation of one and can be generated as needed using a pseudorandom number generator.

*D: All of the above
Feedback: This answer is correct.

Module 4: Optimization

Defining ML Models - Lesson Quiz

Question 1: For the formula used to model the relationship i.e. y = mx + b, what does 'm' stand for?

*A: It captures the amount of change we've observed in our label in response to a small change in our feature.
Feedback: This answer is correct.

B: It refers to a bias term which can be used for regression.
Feedback: This answer is incorrect, please review the module again.

C: Both a & b
Feedback: This answer is incorrect, please review the module again.

D: None of the above
Feedback: This answer is incorrect, please review the module again.

Question 2: What are the basic steps in an ML workflow (or process)?

A: Collect data
Feedback: This answer is partially correct, please review the module again.

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B: Check for anomalies, missing data and clean the data
Feedback: This answer is partially correct, please review the module again.

C: Perform statistical analysis and initial visualization
Feedback: This answer is partially correct, please review the module again.

*D: All of the above
Feedback: This answer is correct

Question 3: Which of the following statements is true?

A: To calculate the Prediction y for any Input value x we have three unknowns, the m = slope(Gradient), b = y-intercept(also called bias) and z = hyperplane.
Feedback: This answer is incorrect, please review the module again.

B: To calculate the Prediction y for any Input value x we have three unknowns, the m = slope(Gradient), b = y-intercept(also called bias) and z = third degree polynomial.
Feedback: This answer is incorrect, please review the module again.

*C: To calculate the Prediction y for any Input value x we have two unknowns, the m = slope(Gradient) and b = y-intercept(also called bias).
Feedback: This answer is correct.

D: None of the above
Feedback: This answer is incorrect, please review the module again.

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Introducing Loss Functions - Lesson Quiz

Question 1: Fill in the blanks: At its core, a _____ is a method of evaluating how well your algorithm models your dataset. If your predictions are totally off, your _____ will output a higher number. If they're pretty good, it will output a lower number. As you change pieces of your algorithm to try and improve your model, your _____ will tell you if you're getting anywhere.

*A: Loss function
Feedback: This answer is correct.

B: Activation functions
Feedback: This answer is incorrect, please review the module again.

C: Bias term
Feedback: This answer is incorrect, please review the module again.

D: Linear model
Feedback: This answer is incorrect, please review the module again.

Question 2: Fill in the blanks: Simply speaking, _____ is the workhorse of basic loss functions. _____ is the sum of squared distances between our target variable and predicted values.

A: Log loss
Feedback: This answer is incorrect, please review the module again.

*B: Mean Squared Error
Feedback: This answer is correct.

C: Likelihood
Feedback: This answer is incorrect, please review the module again.

D: None of the above
Feedback: This answer is incorrect, please review the module again.

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Question 3: Loss functions can be broadly categorized into 2 types: Classification and Regression Loss. _____ is typically used for regression and _____ is typically used for classification.

A: Log Loss, Focus Loss
Feedback: This answer is incorrect, please review the module again.

B: Cross Entropy, Log Loss
Feedback: This answer is incorrect, please review the module again.

*C: Mean Squared Error, Cross Entropy
Feedback: This answer is correct.

D: None of the above
Feedback: This answer is incorrect, please review the module again.

Question 4: Which of the following loss functions is used for classification problems?

A: MSE
Feedback: This answer is incorrect, please review the module again.

*B: Cross entropy
Feedback: This answer is correct.

C: Both a & b
Feedback: This answer is incorrect, please review the module again.

D: None of the above
Feedback: This answer is incorrect, please review the module again.

ML Model Pitfalls - Lesson Quiz

Question 1: Select the correct statement(s) regarding gradient descent.

A: Gradient descent is an optimization algorithm used to maximize some function by iteratively moving in the direction of steepest descent as defined by the negative

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of the gradient. In machine learning, we use gradient descent to update the parameters of our model.
Feedback: This answer is incorrect, please review the module again.

*B: Gradient descent is an optimization algorithm used to minimize some function by iteratively moving in the direction of steepest descent as defined by the negative of the gradient. In machine learning, we use gradient descent to update the parameters of our model.
Feedback: This answer is correct.

C: In machine learning, we use gradient descent to determine if our model labels need to be de-optimized.
Feedback: This answer is incorrect, please review the module again.

D: All of the above
Feedback: This answer is incorrect.

Question 2: Select which statement is true.

A: Batch gradient descent, also called vanilla gradient descent, calculates the error for each example within the training dataset, but only before all training examples have been evaluated does the model get updated.
Feedback: This answer is not true, please review the module again.

B: Batch gradient descent, also called vanilla gradient descent, calculates the gain for each example within the training dataset, but only before all training examples have been evaluated does the model get updated. This whole process is like a cycle and it's called a training epoch.
Feedback: This answer is incorrect, please review the module again.

*C: Batch gradient descent, also called vanilla gradient descent, calculates the error for each example within the training dataset, but only after all training examples have been evaluated does the model get updated. This whole process is like a cycle and it's called a training epoch.
Feedback: This answer is correct.

D: None of the above
Feedback: This answer is incorrect, please review the module again.

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Question 3: Fill in the blanks. In the _____ method, one training sample (example) is passed through the neural network at a time and the parameters (weights) of each layer are updated with the computed gradient.

A: Batch Gradient Descent
Feedback: This answer is incorrect, please review the module again.

*B: Stochastic Gradient Descent
Feedback: This answer is incorrect, please review the module again.

C: Mini Batch Gradient Descent
Feedback: This answer is incorrect, please review the module again.

D: None of the above
Feedback: This answer is incorrect, please review the module again.

Question 4: Which of the following gradient descent methods is used to compute the entire dataset?

*A: Batch gradient descent
Feedback: This answer is correct.

B: Gradient descent
Feedback: This answer is incorrect, please review the module again.

C: Mini-batch gradient descent
Feedback: This answer is incorrect, please review the module again.

D: None of the above
Feedback: This answer is incorrect, please review the module again.

Question 5: Fill in the blanks.
1. _____: **Parameters are updated after computing the gradient of error with respect to the entire training set**
2. _____: **Parameters are updated after computing the gradient of error with respect to a single training example**
3. _____: **Parameters are updated after computing the gradient of error with respect to a subset of the training set**

*A: Batch Gradient Descent, Stochastic Gradient Descent, Mini-Batch Gradient Descent
Feedback: This answer is correct.

B: :Mini-Batch Gradient Descent, Stochastic Gradient Descent, Batch Gradient Descent
Feedback: This answer is incorrect, please review the module again.

C: Mini Batch Gradient Descent, Batch Gradient Descent, Stochastic Gradient Descent
Feedback: This answer is incorrect, please review the module again.

D: None of the above
Feedback: This answer is incorrect, please review the module again.

Performance Metrics - Lesson Quiz

Question 1: Which of the following statements is true?

*A: There will always be a gap between the metrics we care about and the metrics that work well with gradient descent.
Feedback: This answer is correct.

B: There will never be a gap between the metrics we care about and the metrics that work well with gradient descent.
Feedback: This answer is incorrect, please review the module again.

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C: There will always be a gap between the metrics we care about and the metrics that will not work with gradient descent.
Feedback: This answer is incorrect, please review the module again.

D: None of the above
Feedback: This answer is incorrect, please review the module again.

Question 2: What is the significance of Performance metrics?

*A: Performance metrics will allow us to reject models that have settled into inappropriate minima.
Feedback: This answer is correct.

B: Performance metrics will allow us to accept models that have settled into inappropriate minima.
Feedback: This answer is incorrect, please review the module again.

C: Both A and B
Feedback: This answer is incorrect, please review the module again.

D: None of the above
Feedback: This answer is incorrect, please review the module again.

Question 3: Which of the following are benefits of Performance metrics over loss functions?

A: Performance metrics are easier to understand.
Feedback: This answer is partially correct, please review the module again.

B: Performance metrics are directly connected to business goals.
Feedback: This answer is partially correct, please review the module again.

*C: Both A and B
Feedback: This answer is correct.

D: None of the above
Feedback: This answer is incorrect, please review the module again.

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Question 4: Which of the following statements is true about Recall?

A: Recall is inversely related to precision.
Feedback: This answer is partially correct, please review the module again.

B: Recall is like a person who never wants to be left out of a positive decision.
Feedback: This answer is partially correct, please review the module again.

*C: Both A and B
Feedback: This answer is correct.

D: None of the above
Feedback: This answer is incorrect, please review the module again.

Question 5 : Which of the following parameters affect gradient descent?

A: Learning rate
Feedback: This answer is partially correct, please review the module again.

B: Batch size
Feedback: This answer is partially correct, please review the module again.

*C: Both A and B
Feedback: This answer is correct.

D: None of the above
Feedback: This answer is incorrect, please review the module again.

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Module 5: Generalization and Sampling

Generalization and ML Models

Question 1: Which is the best way to assess the quality of a model?

*A: Observing how well a model performs against a new dataset that it hasn't seen before.
Feedback: This answer is correct.

B: Observing how well a model performs against an existing known dataset.
Feedback: This answer is incorrect, please review the module again.

C: Both A and B
Feedback: This answer is incorrect, please review the module again.

D: None of the above
Feedback: This answer is incorrect, please review the module again.

Question 2: Which of the following statements is true?

A: Models that serialize well will have similar loss metrics or error values across training and validation.
Feedback: This answer is incorrect, please review the module again.

*B: Models that generalize well will have similar loss metrics or error values across training and validation.
Feedback: This answer is correct.

C: Models that generalize well will have different loss metrics or error values across training and validation.
Feedback: This answer is incorrect, please review the module again.

D: Models that serialize well will have different loss metrics or error values across training and validation.
Feedback: This answer is incorrect, please review the module again.

Question 3: How do you decide when to stop training a model?

*A: When your loss metrics start to increase
Feedback: This answer is correct.

B: When your loss metrics start to decrease
Feedback: This answer is incorrect, please review the module again.

C: Both A and B
Feedback: This answer is incorrect, please review the module again.

D: None of the above
Feedback: This answer is incorrect, please review the module again.

Question 4: Which of the following actions can you perform on your model when it is trained and validated?

*A: You can write it once, and only once, against the independent test dataset.
Feedback: This answer is correct.

B: You can write it once, and only once against the dependent test dataset.
Feedback: This answer is incorrect, please review the module again.

C: You can write it multiple times against the independent test dataset.
Feedback: This answer is incorrect, please review the module again.

D: You can write it multiple times against the dependent test dataset.
Feedback: This answer is incorrect, please review the module again.

Module 6: Summary

Course Quiz

Question 1: Which of the following is the most typically used loss function for regression?

A: RMSE for linear regression

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Feedback: This answer is partially correct, please review the module again.

B: Cross-entropy for classification
Feedback: This answer is partially correct, please review the module again.

*C: Both A and B
Feedback: This answer is correct.

D: None of the above
Feedback: This answer is incorrect, please review the module again.

Question 2: Which is the most preferred way to traverse loss surfaces efficiently?

*A: By analyzing the slopes of our loss functions, which provide us direction and step magnitude.
Feedback: This answer is correct.

B: By analyzing the magnitude of our loss functions, which provide us direction and slope.
Feedback: This answer is incorrect, please review the module again.

C: By analyzing the direction of our loss functions, which provide us magnitude and slope.
Feedback: This answer is incorrect, please review the module again.

D: None of the above
Feedback: This answer is incorrect, please review the module again.

Question 3: Which of the following is a feature of random forests?

A: Linear sampling
Feedback: This answer is incorrect, please review the module again.

*B: Random sampling
Feedback: This answer is correct.

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C: Non-linear sampling
Feedback: This answer is incorrect, please review the module again.

D: None of the above
Feedback: This answer is incorrect, please review the module again.

Question 4: Which core algorithm is used to construct Decision Trees?

A: Linear Regression
Feedback: This answer is incorrect, please review the module again.

B: Logistic Regression
Feedback: This answer is incorrect, please review the module again.

*C: Greedy algorithms
Feedback: This answer is correct.

D: Naive Bayes
Feedback: This answer is incorrect, please review the module again.