

Here are 80 multiple-choice questions (MCQs) on Entity Framework Core and LINQ, covering various aspects of these technologies:
Entity Framework Core

Which of the following is the correct way to install Entity Framework Core in a .NET Core project?

- a) Install-Package EntityFramework
- b) `dotnet add package Microsoft.EntityFrameworkCore`
- c) Install-Package EFCore
- d) `dotnet add package Microsoft.EntityFrameworkCore`

What is the default behavior of Entity Framework Core when a navigation property is not explicitly configured?

- a) `Lazy Loading`
- b) Eager Loading
- c) Explicit Loading
- d) No Loading

Which method in Entity Framework Core is used to configure the primary key of an entity?

- a) `HasPrimaryKey`
- b) `ToTable`
- c) `HasKey`
- d) `HasColumnName`

Which method is used to run pending migrations in Entity Framework Core?

- a) `Update-Database`
- b) `Apply-Database`
- c) `Run-Migrations`
- d) `Execute-Migrations`

What does the DbSet class in Entity Framework Core represent?

- a) `A collection of entities`
- b) A SQL command
- c) A database connection
- d) A configuration setting

How do you specify a one-to-many relationship in Entity Framework Core?

- a) `Using HasOne and WithMany`
- b) `Using HasMany and WithOne`
- c) `Using HasMany and WithMany`
- d) `Using HasOne and WithOne`

Which of the following methods is used to add a migration in Entity Framework Core?

- a) `Add-Migration`
- b) `Create-Migration`
- c) `Generate-Migration`
- d) `AddNew-Migration`

What is the purpose of the OnModelCreating method in Entity Framework Core?

- a) To configure entity properties

- b) To initialize the database
- c) To map CLR classes to database tables
- d) To define relationships between entities

How do you seed initial data into a database using Entity Framework Core?

- a) Using the HasData method
- b) Using the Seed method
- c) Using the Initialize method
- d) Using the Populate method

Which method in Entity Framework Core is used to create a transaction?

- a) BeginTransaction
- b) StartTransaction
- c) CreateTransaction
- d) OpenTransaction

What is the purpose of the AsNoTracking method in Entity Framework Core?

- a) To enable lazy loading
- b) To improve performance by not tracking changes
- c) To enable eager loading
- d) To track entity changes

Which method is used to execute a raw SQL query in Entity Framework Core?

- a) FromSqlRaw
- b) ExecuteSqlRaw
- c) RunSqlQuery
- d) ExecuteRawQuery

Which method is used to include related entities in the query results in Entity Framework Core?

- a) Include
- b) IncludeAsync
- c) Select
- d) With

How can you configure a composite key in Entity Framework Core?

- a) Using the HasKey method with an anonymous type
- b) Using the HasCompositeKey method
- c) Using the CompositeKey attribute
- d) Using the PrimaryKey method

What does the DbContext.SaveChanges() method do in Entity Framework Core?

- a) Saves changes to the database
- b) Commits a transaction
- c) Validates entity changes
- d) Executes raw SQL commands

Which of the following is a way to implement optimistic concurrency in Entity Framework Core?

- a) Using a ConcurrencyToken property
- b) Using a RowVersion property
- c) Using a Timestamp attribute
- d) Using a Lock statement

How do you specify a one-to-one relationship in Entity Framework Core?

- a) Using HasOne and WithOne
- b) Using HasMany and WithMany
- c) Using HasOne and WithMany
- d) Using HasMany and WithOne

Which method is used to apply configurations defined in separate configuration classes in Entity Framework Core?

- a) ApplyConfigurationsFromAssembly
- b) UseConfiguration
- c) ApplyConfiguration
- d) LoadConfiguration

What is a shadow property in Entity Framework Core?

- a) A property that is mapped to a database column but not defined in the CLR class
- b) A property that is hidden from the database schema
- c) A property that is computed at runtime
- d) A property that represents a foreign key

Which method is used to explicitly load a related entity in Entity Framework Core?

- a) Load
- b) Include
- c) EagerLoad
- d) ExplicitLoad

What is the purpose of the DbContextOptionsBuilder in Entity Framework Core?

- a) To configure database providers and options for the DbContext
- b) To build and execute SQL queries
- c) To map entity relationships
- d) To define entity validation rules

Which of the following is NOT a valid lifecycle method for an Entity Framework Core migration?

- a) Up
- b) Down
- c) Apply
- d) Build

Which method in Entity Framework Core is used to remove an entity from the DbContext?

- a) Remove
- b) Delete
- c) Drop
- d) Purge

How can you disable cascade delete in Entity Framework Core?

- a) By setting OnDelete to Restrict
- b) By setting OnDelete to NoAction
- c) By setting OnDelete to Cascade
- d) By setting OnDelete to Disable

What does the ToTable method in Entity Framework Core do?

- a) Maps an entity to a specific table name
- b) Creates a new table in the database
- c) Executes a raw SQL command
- d) Maps an entity to a view

Which method in Entity Framework Core is used to execute a stored procedure?

- a) FromSqlInterpolated
- b) ExecuteStoredProcudure
- c) RunStoredProcudure
- d) ExecuteSqlStoredProcudure

What is the purpose of the ValueGeneratedOnAdd method in Entity Framework Core?

- a) To indicate that the value of a property should be generated by the database when a new entity is added
- b) To indicate that the value of a property should be generated by the application
- c) To specify a default value for a property
- d) To mark a property as required

How do you specify a many-to-many relationship in Entity Framework Core?

- a) Using HasMany and WithMany
- b) Using HasOne and WithMany
- c) Using HasMany and WithOne
- d) Using HasOne and WithOne

What is the purpose of the HasAlternateKey method in Entity Framework Core?

- a) To define a unique key that is not the primary key
- b) To define a foreign key relationship
- c) To define a composite key
- d) To define a default value

Which method is used to enable lazy loading in Entity Framework Core?

- a) UseLazyLoadingProxies
- b) EnableLazyLoading
- c) SetLazyLoading
- d) AllowLazyLoading

Which of the following is a valid database provider for Entity Framework Core?

- a) MySQL
- b) Oracle
- c) InMemory
- d) PostgreSQL

What is the purpose of the HasConversion method in Entity Framework Core?

- a) To convert a property value between the entity and the database
- b) To convert an entity to another type
- c) To convert a database table to a view
- d) To convert a relationship to a foreign key

How do you specify a default schema for all tables in Entity Framework Core?

- a) By using the ToSchema method in the OnModelCreating method
- b) By setting the DefaultSchema property in the DbContext
- c) By using the HasSchema method in the OnModelCreating method
- d) By setting the DefaultSchema attribute on the entity classes

What does the IsConcurrencyToken method in Entity Framework Core do?

- a) Marks a property as a concurrency token to be used for concurrency control
- b) Marks a property as required
- c) Marks a property as a foreign key
- d) Marks a property as a primary key

Which method is used to filter the query results in Entity Framework Core?

- a) Where
- b) Select
- c) Include
- d) OrderBy

How can you specify a default value for a property in Entity Framework Core?

- a) Using the HasDefaultValue method
- b) Using the SetDefaultValue method
- c) Using the Default attribute
- d) Using the DefaultValue method

What is the purpose of the HasMaxLength method in Entity Framework Core?

- a) To specify the maximum length of a string property
- b) To set the maximum number of entities in a collection
- c) To limit the number of entities returned by a query
- d) To specify the maximum size of a database table

Which method is used to specify the column name for a property in Entity Framework Core?

- a) HasColumnName
- b) ToColumn
- c) SetColumnName
- d) ColumnName

How do you disable identity generation for a primary key in Entity Framework Core?

- a) Using the ValueGeneratedNever method

- b) Using the ValueGeneratedOnAdd method
- c) Using the ValueGeneratedOnUpdate method
- d) Using the NoIdentity method

Which of the following methods is used to ignore a property in Entity Framework Core?

- a) Ignore
- b) Skip
- c) Exclude
- d) Remove

What is the purpose of the HasData method in Entity Framework Core?

- a) To seed data into the database
- b) To configure default values for properties
- c) To specify the maximum length of a string property
- d) To define a composite key

Which method in Entity Framework Core is used to roll back a transaction?

- a) Rollback
- b) Abort
- c) Cancel
- d) Undo

Which of the following is true about Entity Framework Core?

- a) It supports multiple database providers
- b) It only works with SQL Server
- c) It requires the use of migrations
- d) It does not support eager loading

Which method in Entity Framework Core is used to apply migrations?

- a) Migrate
- b) ApplyMigrations
- c) ExecuteMigrations
- d) RunMigrations

How do you configure a database schema for a table in Entity Framework Core?

- a) Using the ToTable method with a schema parameter
- b) Using the SetSchema method
- c) Using the Schema attribute
- d) Using the ConfigureSchema method

LINQ (Language Integrated Query)

Which LINQ method is used to filter a sequence of values based on a predicate?

- a) Where
- b) Select
- c) OrderBy
- d) Join

Which LINQ method is used to project each element of a sequence into a new form?

- a) Select
- b) Where
- c) OrderBy
- d) Join

What is the purpose of the GroupBy method in LINQ?

- a) To group elements that share a common attribute
- b) To sort elements in ascending order
- c) To filter elements based on a condition
- d) To join two sequences

Which LINQ method is used to sort elements in descending order?

- a) OrderByDescending
- b) OrderBy
- c) ThenBy
- d) SortDescending

What does the Any method in LINQ do?

- a) Checks if any element in a sequence satisfies a condition
- b) Returns the first element in a sequence
- c) Projects each element into a new form
- d) Groups elements that share a common attribute

Which LINQ method is used to concatenate two sequences?

- a) Concat
- b) Union
- c) Join
- d) Merge

Which LINQ method is used to select the first element in a sequence that satisfies a condition?

- a) First
- b) FirstOrDefault
- c) Single
- d) Find

What does the Count method in LINQ do?

- a) Returns the number of elements in a sequence
- b) Sums the elements in a sequence
- c) Projects each element into a new form
- d) Filters elements based on a condition

Which LINQ method is used to join two sequences based on matching keys?

- a) Join
- b) GroupJoin
- c) SelectMany
- d) Union

What is the purpose of the Aggregate method in LINQ?

- a) To apply an accumulator function over a sequence
- b) To concatenate two sequences
- c) To sort elements in ascending order
- d) To group elements that share a common attribute

Which LINQ method is used to find the maximum value in a sequence?

- a) Max
- b) Sum
- c) Average
- d) Min

What does the Distinct method in LINQ do?

- a) Removes duplicate elements from a sequence
- b) Filters elements based on a condition
- c) Projects each element into a new form
- d) Groups elements that share a common attribute

Which LINQ method is used to check if all elements in a sequence satisfy a condition?

- a) All
- b) Any
- c) Contains
- d) Where

What does the SelectMany method in LINQ do?

- a) Flattens a sequence of sequences into a single sequence
- b) Projects each element into a new form
- c) Filters elements based on a condition
- d) Groups elements that share a common attribute

Which LINQ method is used to compute the sum of a sequence of numeric values?

- a) Sum
- b) Average
- c) Max
- d) Min

What does the SingleOrDefault method in LINQ do?

- a) Returns a single, specific element from a sequence, or a default value if the sequence is empty
- b) Returns the first element in a sequence
- c) Filters elements based on a condition
- d) Projects each element into a new form

Which LINQ method is used to take the specified number of elements from the beginning of a sequence?

- a) Take
- b) Skip
- c) First
- d) Select

What does the Intersect method in LINQ do?

- a) Returns the common elements between two sequences
- b) Concatenates two sequences
- c) Joins two sequences based on matching keys
- d) Projects each element into a new form

Which LINQ method is used to reverse the order of elements in a sequence?

- a) Reverse
- b) OrderByDescending
- c) OrderBy
- d) Sort

What does the Skip method in LINQ do?

- a) Bypasses a specified number of elements in a sequence and returns the remaining elements
- b) Takes the specified number of elements from the beginning of a sequence
- c) Reverses the order of elements in a sequence
- d) Sorts elements in descending order

Which LINQ method is used to determine whether a sequence contains a specified element?

- a) Contains
- b) Any
- c) All
- d) Where

What does the Union method in LINQ do?

- a) Produces the set union of two sequences
- b) Concatenates two sequences
- c) Joins two sequences based on matching keys
- d) Returns the common elements between two sequences

Which LINQ method is used to filter a sequence of values based on the index of the elements?

- a) Where
- b) Select
- c) OrderBy
- d) Take

What does the ToDictionary method in LINQ do?

- a) Converts a sequence into a dictionary
- b) Converts a sequence into a list
- c) Converts a sequence into an array
- d) Converts a sequence into a set

Which LINQ method is used to create a lookup, a one-to-many dictionary, based on a key selector?

- a) ToLookup
- b) GroupBy
- c) Join
- d) SelectMany

What does the ElementAt method in LINQ do?

- a) Returns the element at a specified index in a sequence
- b) Returns the first element in a sequence
- c) Returns the last element in a sequence
- d) Filters elements based on a condition

Which LINQ method is used to flatten two sequences into a sequence of tuples?

- a) Zip
- b) SelectMany
- c) Join
- d) Concat

What does the Cast method in LINQ do?

- a) Converts the elements of a sequence to a specified type
- b) Filters elements based on a condition
- c) Projects each element into a new form
- d) Sorts elements in ascending order

Which LINQ method is used to retrieve distinct elements from a sequence based on a specific key?

- a) DistinctBy
- b) Where
- c) Select
- d) OrderBy

What does the Except method in LINQ do?

- a) Produces the set difference between two sequences
- b) Concatenates two sequences
- c) Joins two sequences based on matching keys
- d) Returns the common elements between two sequences