

Browse Tutorials

01 Beginner

- ▶ Introduction to LINQ
- ▶ Different ways to write LINQ query

02 Intermediate

- ▶ Understanding LINQ Standard Query Operators
- ▶ Difference between ADO.NET and LINQ to SQL
- ▶ IEnumerable VS IQueryable
- ▶ IEnumerable VS IList
- ▶ Understanding Var and IEnumerable with LINQ
- ▶ C# LINQ Joins With SQL
- ▶ Comparing LINQ with Stored Procedure
- ▶ Difference

[Home](#) / [Tutorials](#) / [Linq](#)
/ IEnumerable VS IQueryable

IEnumerable VS IQueryable



DotNetTricks

IEnumerable VS IQueryable

📅 29 Mar 2024

📊 Intermediate

👁 62.3K Views

🕒 4 min read



Learn via Video Course & by Doing Hands-on Labs

ASP.NET MVC with WebAPI Course

Free Course

▶ Self Paced Courses

🔧 Hands-On Labs

🔗 Interview Q&A

The difference between IEnumerable and IQueryable: An Overview

In this [LINQ Tutorial](#), you will learn the difference between IEnumerable and

We use cookies to make interactions with our websites and services easy and meaningful. Please read our [Privacy Policy](#) for more details.

[Accept cookies & close this](#)

Browse Tutorials

01 Beginner

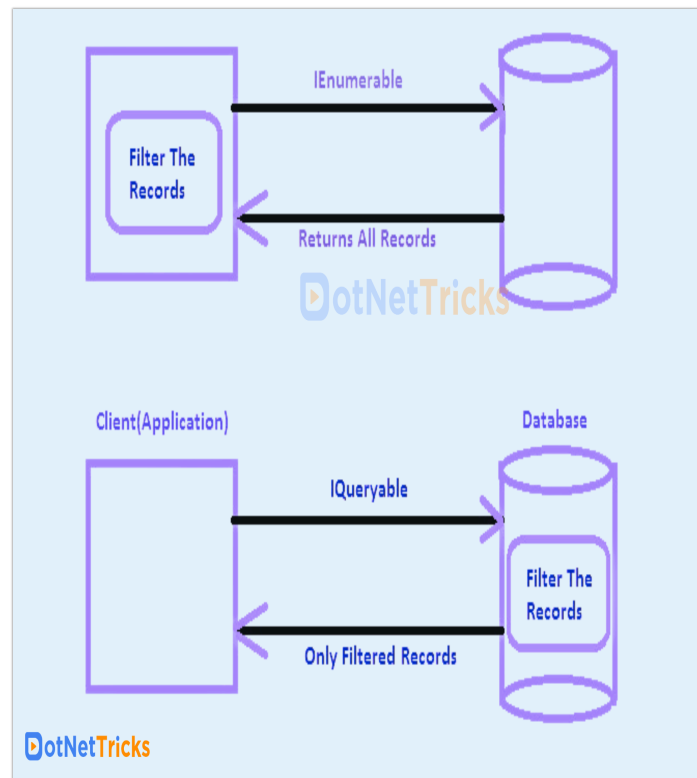
- Introduction to LINQ
- Different ways to write LINQ query

02 Intermediate

- Understanding LINQ Standard Query Operators
- Difference between ADO.NET and LINQ to SQL
- IEnumerable VS IQueryable
- IEnumerable VS IList
- Understanding Var and IEnumerable with LINQ
- C# LINQ Joins With SQL
- Comparing LINQ with Stored Procedure
- Difference

manipulation.

Basically, IQueryable inherits IEnumerable, Hence IQueryable has all the features of IEnumerable and except this, it has its own features. Both have their own methodology to query data and data manipulation. Let's see both the features and learn how to use both the features to boost your LINQ Query performance.



What is IEnumerable?

1. IEnumerable exists in System.Collections Namespace.
2. IEnumerable can move forward only over a

Browse Tutorials

01 Beginner

- ▶ Introduction to LINQ
- ▶ Different ways to write LINQ query

02 Intermediate

- ▶ Understanding LINQ Standard Query Operators
- ▶ Difference between ADO.NET and LINQ to SQL
- ▶ [IEnumerable VS IQueryable](#)
- ▶ IEnumerable VS IList
- ▶ Understanding Var and IEnumerable with LINQ
- ▶ C# LINQ Joins With SQL
- ▶ Comparing LINQ with Stored Procedure
- ▶ Difference

We use cookies to make interactions with our websites and services easy and meaningful. Please read our [Privacy Policy](#) for more details.

[Accept cookies & close this](#)

in-memory collections like List, Array, etc.

4. While querying data from a database, IEnumerable executes a select query on the server side, loads data in memory on the client side, and then filters data.
5. IEnumerable is suitable for LINQ to Object and LINQ to XML queries.
6. IEnumerable supports deferred execution.
7. IEnumerable doesn't support custom queries.
8. IEnumerable doesn't support lazy loading. Hence not suitable for paging-like scenarios.
9. Extension methods supported by IEnumerable take functional objects.

IEnumerable Example:

```
MyDataContext dc = new MyDataContext ();
IEnumerable<Employee> list = dc.Employees
list = list.Take<Employee>(10);
```

Generated SQL statements of the above query will be :

```
SELECT [t0].[EmpID], [t0].[EmpName], [t0]
WHERE [t0].[EmpName] LIKE @p0
```

Browse Tutorials

01 Beginner

► Introduction to LINQ

► Different ways to write LINQ query

02 Intermediate

► Understanding LINQ Standard Query Operators

► Difference between ADO.NET and LINQ to SQL

► [IEnumerable VS IQueryable](#)

► IEnumerable VS IList

► Understanding Var and IEnumerable with LINQ

► C# LINQ Joins With SQL

► Comparing LINQ with Stored Procedure

► Difference

In the above IEnumerable Example We took the Employee list where we have to find the employee name starting with s, But you noticed that in this query **"top 10"** is missing since IEnumerable filters record on the client side. Now Let's see in IQueryable.

What is IQueryable?

1. IQueryable exists in the System. Linq Namespace.
2. IQueryable can move forward only over a collection, it can't move backward and between the items.
3. IQueryable is best for querying data from out-memory (like remote database, service) collections.
4. While querying data from a database, IQueryable executes the select query on the server side with all filters.
5. IQueryable is suitable for [LINQ to SQL](#) queries.
6. IQueryable supports deferred execution.
7. IQueryable supports custom queries using CreateQuery and Execute methods.
8. IQueryable supports lazy loading. Hence it is suitable for paging-like scenarios

We use cookies to make interactions with our websites and services easy and meaningful. Please read our [Privacy Policy](#) for more details.

[Accept cookies & close this](#)

Browse Tutorials

01 Beginner

- Introduction to LINQ
- Different ways to write LINQ query

02 Intermediate

- Understanding LINQ Standard Query Operators
- Difference between ADO.NET and LINQ to SQL
- [IEnumerable VS IQueryable](#)
- IEnumerable VS IList
- Understanding Var and IEnumerable with LINQ
- C# LINQ Joins With SQL
- Comparing LINQ with Stored Procedure
- Difference

IQueryable take expression objects, which means an expression tree.

IQueryable Example:

```
MyDataContext dc = new MyDataContext ();  
IQueryable<Employee> list = dc.Employees.  
list = list.Take<Employee>(10);
```

Generated SQL statements of the above query will be :

```
SELECT TOP 10 [t0].[EmpID], [t0].[EmpName]  
WHERE [t0].[EmpName] LIKE @p0
```

Explanation:

In IQueryable Notice that in this query **"top 10"** exists since IQueryable executes a query in an SQL server with all filters.

Summary:

In this article, I explained the difference between IEnumerable and IQueryable. I hope after reading this article you will be able to boost your LINQ query performance. I would like to have feedback from my blog readers. Please post your feedback, questions, or

Browse Tutorials

01 Beginner

- ▶ Introduction to LINQ
- ▶ Different ways to write LINQ query

02 Intermediate

- ▶ Understanding LINQ Standard Query Operators
- ▶ Difference between ADO.NET and LINQ to SQL
- ▶ [IEnumerable VS IQueryable](#)
- ▶ IEnumerable VS IList
- ▶ Understanding Var and IEnumerable with LINQ
- ▶ C# LINQ Joins With SQL
- ▶ Comparing LINQ with Stored Procedure
- ▶ Difference

Q1. What is the difference between IEnumerable and IQueryable repository?

IQueryable is suitable for querying data from out-memory collections. On the other hand IEnumerable is good for In-Memory Collection queries. While querying data from a database, IQueryable executes a "select query" on server side with all filters.

Q2. What is the purpose of IQueryable?

It is used for querying data from external data sources that may not be in memory

Q3. What type of interface is LINQ?

It is the collection of extension methods for classes that implement IEnumerable and IQueryable interfaces, therefore the LINQ query applies to any object that implements the IEnumerable or IQueryable interface.

 **Share Article**



Live Training Batches Schedule

09
JUN

Azure DevOps Certification Training

Course

We use cookies to make interactions with our websites and services easy and meaningful. Please read our [Privacy Policy](#) for more details.

[Accept cookies & close this](#)

Browse Tutorials

01 Beginner

- Introduction to LINQ
- Different ways to write LINQ query

02 Intermediate

- Understanding LINQ Standard Query Operators
- Difference between ADO.NET and LINQ to SQL
- IEnumerable VS IQueryable
- IEnumerable VS IList
- Understanding Var and IEnumerable with LINQ
- C# LINQ Joins With SQL
- Comparing LINQ with Stored Procedure
- Difference

DNT515

Tue , Fri 08:30 PM - 10:00 PM

DETAILS

**26
MAY**

Advanced Full-Stack .NET Developer Certification Training

DNT525

Sat , Sun 08:30 PM - 10:30 PM

DETAILS

**26
MAY**

ASP.NET Core Certification Training

DNT524

Sat , Sun 08:30 PM - 10:30 PM

DETAILS

**19
MAY**

Angular Certification Course

DNT519

Sat , Sun 06:00 PM - 08:00 PM

DETAILS

**18
MAY**

Azure Developer Certification Training

DNT517

Sat , Sun 05:30 PM - 07:30 PM

DETAILS

**18
MAY**

.NET Solution Architect Certification Training

DNT518

Sat , Sun 07:00 AM - 09:00 AM

DETAILS

**18
MAY**

Software Architecture and Design Training

DNT522

Sat , Sun 07:00 AM - 09:00 AM

DETAILS

**17
MAY**

ASP.NET Core Certification Training

DNT512

Mon , 07:00 AM - 08:30 AM

Wed , Fri

DETAILS

We use cookies to make interactions with our websites and services easy and meaningful. Please read our Privacy Policy for more details.

[Accept cookies & close this](#)

Browse Tutorials

01 Beginner

- ▶ Introduction to LINQ
- ▶ Different ways to write LINQ query

02 Intermediate

- ▶ Understanding LINQ Standard Query Operators
- ▶ Difference between ADO.NET and LINQ to SQL
- ▶ [IEnumerable VS IQueryable](#)
- ▶ IEnumerable VS IList
- ▶ Understanding Var and IEnumerable with LINQ
- ▶ C# LINQ Joins With SQL
- ▶ Comparing LINQ with Stored Procedure
- ▶ Difference

Wed , Fri

Similar Articles

Difference between Select and SelectMany in LINQ ↗

Different ways to write LINQ query ↗

Understanding LINQ Standard Query Operators ↗

Introduction to LINQ ↗

Understanding Var and IEnumerable with LINQ ↗

Create xml from database using LINQ ↗

◀ Previous Tutorial

Difference between ADO.NET and LINQ to SQL

Next Tutorial ▶

IEnumerable VS IList

About Author



Shailendra Chauhan (Microsoft MVP, Founder & CEO at Scholarhat by DotNetTricks)



Shailendra Chauhan is the Founder and CEO at ScholarHat by DotNetTricks which is a brand when it comes to e-Learning. He provides training and consultation over an array of technologies like Cloud, .NET, Angular, React, Node, Microservices, Containers and Mobile Apps development. He has been

Browse Tutorials

01 Beginner

► Introduction to LINQ

► Different ways to write LINQ query

02 Intermediate

► Understanding LINQ Standard Query Operators

► Difference between ADO.NET and LINQ to SQL

► [IEnumerable VS IQueryable](#)

► IEnumerable VS IList

► Understanding Var and IEnumerable with LINQ

► C# LINQ Joins With SQL

► Comparing LINQ with Stored Procedure

► Difference

number of most sought-after books to his name which has helped job aspirants in cracking tough interviews with ease.

Training Programs

.NET Solution Architect Certification Training

The .NET Solution Architect Certification Training Course is a comprehensive program designed to equip professionals with the skills and knowledge necessary to excel in the role of a .NET solution architect.

[View More](#)

ASP.NET Core Certification Training

Join ScholarHat ASP.NET Core course training which is primarily designed for Beginners and Professionals. ✓ Unlimited Live Sessions ✓ Project-based Training ✓ Job Assistance ✓ Enrol Now!

[View More](#)

We use cookies to make interactions with our websites and services easy and meaningful. Please read our [Privacy Policy](#) for more details.

[Accept cookies & close this](#)

Browse Tutorials

01 Beginner

- Introduction to LINQ
- Different ways to write LINQ query

02 Intermediate

- Understanding LINQ Standard Query Operators
- Difference between ADO.NET and LINQ to SQL
- [IEnumerable VS IQueryable](#)
- IEnumerable VS IList
- Understanding Var and IEnumerable with LINQ
- C# LINQ Joins With SQL
- Comparing LINQ with Stored Procedure
- Difference

Developer Certification Training

Master the latest techniques in .NET development, from advanced back-end technologies to cutting-edge front-end frameworks. Gain hands-on experience in building robust and scalable applications, and elevate your skills with in-depth sessions.

[View More](#)


Popular Live Training

.NET Certification Training
 ASP.NET Core Certification Training
 .NET Software Architecture & Design Training
 Angular Certification Training
 Azure Developer Training
 Azure DevOps Certification Training

Programming Tutorial

Data Structures Tutorial
 Java Tutorial
 Python Tutorial
 C++ Tutorial
 C# Tutorial
 C Tutorial
 JavaScript Tutorial
 HTML Tutorial

Full Stack Tutorial

Full Stack Tutorial
 Node.js Tutorial
 React Tutorial
 Angular Tutorial
 MongoDB Tutorial
 Data Science Tutorial
 Azure Cloud Tutorial
 Career Coaching Tutorial

We use cookies to make interactions with our websites and services easy and meaningful. Please read our [Privacy Policy](#) for more details.

[Accept cookies & close this](#)

ScholarHat

By DotNetTricks

Membership

Batches

Tutorials

0

Login/SignUp

Browse

Tutorials

01 Beginner

► Introduction to LINQ

► Different ways to write LINQ query

02 Intermediate

► Understanding LINQ Standard Query Operators

► Difference between ADO.NET and LINQ to SQL

► IEnumerable VS IQueryable

► IEnumerable VS IList

► Understanding Var and IEnumerable with LINQ

► C# LINQ Joins With SQL

► Comparing LINQ with Stored Procedure

► Difference

Training

Company

Resources

Have any Questions?

ng

rses

Labs

d

es

n

About Us

Contact Us

Terms &

Conditions

Privacy Policy

Refund Policy

Verify Certificate

Reviews

Scholarship

Live Training

Membership

Self-paced

Membership

Master Classes

Coding

Playground

Skill Challenge

Job Openings

Mentors

Live Batches

+91- 999 9123 502

hello@scholarhat.com

Follow Us

f

✕

in

ght © 2024 | All rights reserved | The course names and logos are the marks of their respective owners | Engineered with ❤️ by DotNetTricks

We use cookies to make interactions with our websites and services easy and meaningful. Please read our Privacy Policy for more details.

Accept cookies & close this

https://www.scholarhat.com/tutorial/linq/ienumerable-vs-iqueryable

11/11