

# Sql server, .net and c# video tutorial

Free C#, .Net and Sql server video tutorial for beginners and intermediate programmers.

Support us

.Net Basics

C# SQL

ASP.  
NET

ADO.  
NET

MVC

Slides

C#  
Programs

Subscribe

Buy  
DVD

## LINQ Tutorial

- Part 1 - What is LINQ - Slides
- Part 2 - Writing LINQ Queries - Slides
- Part 3 - Extension Methods - Slides
- Part 4 - Aggregate Functions - Slides

**PRAGIM**

**TECHNOLOGIES**

Training + Placements

Best software training and placements in marathahalli, bangalore. For further details please call 09945699393.

Complete Tutorials Angular tutorial for beginners

- Part 5 - Aggregate() Function - Slides
  - Part 6 - Restriction Operators - Slides
  - Part 7 - Projection Operators - Slides
  - Part 8 - SelectMany Operator - Slides
  - Part 9 - Select v/s SelectMany - Slides
  - Part 10 - Ordering Operators - Slides
  - Part 11 - Ordering Operators in LINQ - II - Slides
  - Part 12 - Partitioning Operators - Slides
  - Part 13 - Implement paging using skip and take operators - Slides
  - Part 14 - LINQ query deferred execution - Slides
  - Part 15 - Conversion Operators in LINQ - Slides
  - Part 16 - Cast and OfType
- Angular 5 Tutorial for beginners
- Important Videos The Gift of Education
- Web application for your business
- How to become .NET developer
- Resources available to help you
- ASP.NET Core What is ASP.NET Core | Text | Slides
- Dot Net Video Tutorials Angular 6 Tutorial
- Angular CRUD Tutorial
- Angular CLI Tutorial
- Angular 2 Tutorial
- Design Patterns
- SOLID Principles
- ASP.NET Web API
- Bootstrap
- AngularJS Tutorial

## operators in LINQ - Slides

- Part 17 - AsEnumerable and AsQueryable in LINQ - Slides
- Part 18 - GroupBy in LINQ - Slides
- Part 19 - Group by multiple keys in linq - Slides
- Part 20 - Element Operators in LINQ - Slides
- Part 21 - Group Join in LINQ - Slides
- Part 22 - Inner Join in LINQ - Slides
- Part 23 - Difference between group join and inner join in linq - Slides
- Part 24 - Left Outer Join in LINQ - Slides
- Part 25 - Cross Join in LINQ - Slides
- Part 26 - Set operators in LINQ - Slides
- Part 27 - Union, Intersect

## jQuery Tutorial

- JavaScript with ASP.NET Tutorial
- JavaScript Tutorial
- Charts Tutorial
- LINQ
- LINQ to SQL
- LINQ to XML
- Entity Framework
- WCF
- ASP.NET Web Services
- Dot Net Basics
- C#
- SQL Server
- ADO.NET
- ASP.NET
- GridView
- ASP.NET MVC

## and Except operators in LINQ - Slides

- Part 28 - Generation Operators in LINQ - Slides
- Part 29 - Concat operator in LINQ - Slides
- Part 30 - SequenceEqual Operator in LINQ - Slides
- Part 31 - Quantifiers in LINQ - Slides
- Part 32 - LinqPad - Slides

[Email This](#)

[BlogThis!](#)

[Share to Twitter](#)

[Share to Facebook](#)

[Share to Pinterest](#)

## 6 comments:

1.

Anonymous [August 8, 2014 at 1:52 PM](#)

Hi Venkat please discuss WCF Security, JSON, Rest Service & Design pattern

[Visual Studio Tips and Tricks](#)

[Dot Net Interview Questions](#)

[Slides Entity Framework](#)

[WCF](#)

[ASP.NET Web Services](#)

[Dot Net Basics](#)

[C#](#)

[SQL Server](#)

[ADO.NET](#)

[ASP.NET](#)

[GridView](#)

[ASP.NET MVC](#)

[Visual Studio Tips and Tricks](#)

[Java Video Tutorials Part 1 :](#)

[Video | Text | Slides](#)

[Part 2 : Video | Text | Slides](#)

[Part 3 : Video | Text | Slides](#)

Reply

2.



sri nuAugust 20, 2014  
at 9:53 PM

can u please upload linq  
to entities videos

Reply

3.

AnonymousSeptember  
8, 2014 at 11:59 PM

Hi sir can u please  
upload videos on  
reporting ,testing and  
SDLC videos

Reply

4.

AnonymousOctober  
11, 2014 at 8:57 AM

How to make small  
project using sql server  
database in SharePoint.

Reply

5.



.....September 10,  
2015 at 1:32 AM

Dim foundemp = From  
emp In mylink.MainDBs

## Interview Questions C#

SQL Server

Written Test

Where emp.IqamaNo.  
ToString.StartsWith  
(SearchText.Text)  
Select emp  
Dear Mr. Venkat,  
Good Day  
i am continuous viewer  
of your lessons, i have  
pasted a linq to sql  
query in vb.net. in which  
iqamano is float , but  
results is always zero.  
pls help me to solve this  
problem.

Reply

6.

Anonymous **January 9, 2017 at 6:03 AM**

Hi i am trying to get data  
from sqlserver db by  
using linq, I am passing  
datetime object in where  
clause but its not  
returning any data  
please help.. Positing  
my linq query.

```
var sdate = Convert.  
.ToDateTime  
("13/01/2016");  
var outerRecord = (from  
c in vtconnect.  
mastervt_backup.Take  
(100)  
where (c.Dated >= sdate)  
select c).ToList();
```

Class Property:

```
public Nullable Dated  
{ get; set; }
```

i am using datafirst approach of entity framework.

I also want to know that is there any way i can change data type of my autogenerated entity, without updating my model.

Please help..... Ravinder

Reply

---

Add comment

If you like this website, please share with your friends on facebook and Google+ and recommend us on google using the g+1 button on the top right hand corner.

Newer Post      Home      Older Post

Subscribe to: Post Comments (Atom)

Powered by [Blogger](#).



# Sql server, .net and c# video tutorial

Free C#, .Net and Sql server video tutorial for beginners and intermediate programmers.

[Support us](#) | [.Net Basics](#) | [C#](#) | [SQL](#) | [ASP.NET](#) | [ADO.NET](#) | [MVC](#) | [Slides](#) | [C# Programs](#) | [Subscribe](#) | [Buy DVD](#) |

Part 1 - What is LINQ



Best software training and placements in marathahalli, bangalore. For further details please call 09945699393.

Complete Tutorials Angular tutorial for beginners

Angular 5 Tutorial for beginners

Important Videos The Gift of Education

Web application for your business

How to become .NET developer

Resources available to help you

# LINQ Tutorial

## Part 1 - What is LINQ

Venkat

PRAGIM Technologies

[kudvenkat@gmail.com](mailto:kudvenkat@gmail.com)

<http://csharp-video-tutorials.blogspot.com>

PRAGIM Technologies | 9900113931 | [www.pragimtech.com](http://www.pragimtech.com) | [www.facebook.com/pragimtech](https://www.facebook.com/pragimtech)

1

ASP.NET Core What is ASP.NET  
Core | Text | Slides

Dot Net Video Tutorials Angular 6  
Tutorial

Angular CRUD Tutorial

Angular CLI Tutorial

Angular 2 Tutorial

Design Patterns

SOLID Principles

ASP.NET Web API

Bootstrap

AngularJS Tutorial

jQuery Tutorial

JavaScript with ASP.NET Tutorial

JavaScript Tutorial

Charts Tutorial

LINQ

LINQ to SQL

LINQ to XML

Entity Framework

WCF

# In this session we will learn

- What is LINQ
- Benefits of using LINQ
- LINQ Architecture
- LINQ Providers

**Link to Dot Net Basics, ASP.NET, C#, ADO.NET and SQL Server video series**

<http://www.youtube.com/user/kudvenkat/playlists>

PRAGIM Technologies | 9900113931 | www.pragimtech.com | www.facebook.com/pragimtech

<http://csharp-video-tutorials.blogspot.com>

2

ASP.NET Web Services

Dot Net Basics

C#

SQL Server

ADO.NET

ASP.NET

GridView

ASP.NET MVC

Visual Studio Tips and Tricks

Dot Net Interview Questions

Slides Entity Framework

WCF

ASP.NET Web Services

Dot Net Basics

C#

SQL Server

ADO.NET

ASP.NET

GridView

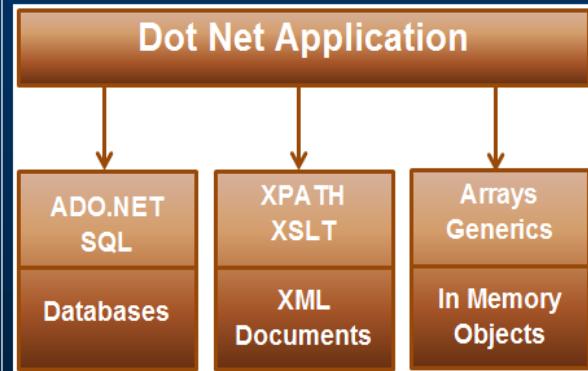
ASP.NET MVC

# LINQ Tutorial

## What is LINQ

LINQ stands for Language Integrated Query. LINQ enables us to query any type of data store (SQL Server, XML documents, Objects in memory etc).

## Why should we use LINQ



LINQ enables us to work with different data sources using a similar coding style without having the need to know the syntax specific to the data source. Another benefit of using LINQ is that it provides intellisense and compile time error checking

3

PRAGIM Technologies | 9900113931 | [www.pragimtech.com](http://www.pragimtech.com) | [www.facebook.com/pragimtech](http://www.facebook.com/pragimtech)

<http://csharp-video-tutorials.blogspot.com>

Visual Studio Tips and Tricks

Java Video Tutorials Part 1 :  
[Video](#) | [Text](#) | [Slides](#)

Part 2 : [Video](#) | [Text](#) | [Slides](#)

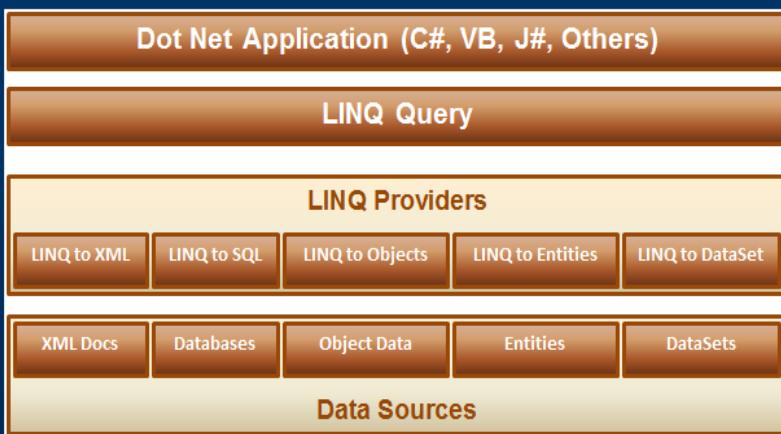
Part 3 : [Video](#) | [Text](#) | [Slides](#)

Interview Questions C#

SQL Server

Written Test

# LINQ Architecture



**LINQ query can be written using any .NET supported programming language**

**LINQ provider is a component between the LINQ query and the actual data source, which converts the LINQ query into a format that the underlying data source can understand.**

**For example LINQ to SQL provider converts a LINQ query to T-SQL that SQL Server database can understand**

# LINQ Query

| ID | FirstName | LastName | Gender |
|----|-----------|----------|--------|
| 1  | Mark      | Hastings | Male   |
| 2  | Steve     | Pound    | Male   |
| 3  | Ben       | Hoskins  | Male   |
| 4  | Philip    | Hastings | Male   |

```
SampleDataContext dataContext = new SampleDataContext();  
  
GridView1.DataSource = from student in dataContext.Students  
                      where student.Gender == "Male"  
                      select student;  
  
GridView1.DataBind();
```

# Additional Resources

## PRAGIM Home Page:

[www.PragimTech.com](http://www.PragimTech.com)

## Resources:

C#, ADO.NET, ASP.NET, SQL Server & MVC youtube Playlists

<http://www.youtube.com/user/kudvenkat/playlists>

Code samples and text version of all the videos on my blog

<http://www.csharp-video-tutorials.blogspot.com>

To receive email alerts when new videos are uploaded, please subscribe to my YOUTUBE channel

[www.YouTube.com/kudvenkat](http://www.YouTube.com/kudvenkat)

6

[Email This](#)

[BlogThis!](#)

[Share to Twitter](#)

[Share to Facebook](#)

[Share to Pinterest](#)

No comments:

Post a Comment

If you like this website, please share with your friends on facebook and Google+ and recommend us on google using the g+1 button on the top right hand corner.

Newer  
Post

Subscribe to: Post Comments (Atom)

[Home](#)

Older  
Post

Powered by [Blogger](#).

# Sql server, .net and c# video tutorial

Free C#, .Net and Sql server video tutorial for beginners and intermediate programmers.

[Support us](#) | [.Net Basics](#) | [C#](#) | [SQL](#) | [ASP.NET](#) | [ADO.NET](#) | [MVC](#) | [Slides](#) | [C# Programs](#) | [Subscribe](#) | [Buy DVD](#) |

Part 2 - Writing LINQ Queries

**PRAGIM**

**TECHNOLOGIES**

Training + Placements

Best software training and placements in marathahalli, bangalore. For further details please call 09945699393.

Complete Tutorials Angular tutorial for beginners

Angular 5 Tutorial for beginners

Important Videos The Gift of Education

Web application for your business

How to become .NET developer

Resources available to help you

# LINQ Tutorial

## Part 2 - Writing LINQ Queries

Venkat

PRAGIM Technologies

[kudvenkat@gmail.com](mailto:kudvenkat@gmail.com)

<http://csharp-video-tutorials.blogspot.com>

PRAGIM Technologies | 9900113931 | [www.pragimtech.com](http://www.pragimtech.com) | [www.facebook.com/pragimtech](https://www.facebook.com/pragimtech)

1

ASP.NET Core What is ASP.NET  
Core | Text | Slides

Dot Net Video Tutorials Angular 6  
Tutorial

Angular CRUD Tutorial

Angular CLI Tutorial

Angular 2 Tutorial

Design Patterns

SOLID Principles

ASP.NET Web API

Bootstrap

AngularJS Tutorial

jQuery Tutorial

JavaScript with ASP.NET Tutorial

JavaScript Tutorial

Charts Tutorial

LINQ

LINQ to SQL

LINQ to XML

Entity Framework

WCF

# In this session we will learn

- Different ways of writing LINQ Queries

## LINQ Tutorial

### Part 1 - What is LINQ

**Link to Dot Net Basics, ASP.NET, C#, ADO.NET and SQL Server video series**

<http://www.youtube.com/user/kudvenkat/videos?view=1>

PRAGIM Technologies | 9900113931 | [www.pragimtech.com](http://www.pragimtech.com) | [www.facebook.com/pragimtech](http://www.facebook.com/pragimtech)

<http://csharp-video-tutorials.blogspot.com>

2

ASP.NET Web Services

Dot Net Basics

C#

SQL Server

ADO.NET

ASP.NET

GridView

ASP.NET MVC

Visual Studio Tips and Tricks

Dot Net Interview Questions

Slides Entity Framework

WCF

ASP.NET Web Services

Dot Net Basics

C#

SQL Server

ADO.NET

ASP.NET

GridView

ASP.NET MVC

# Different ways of writing LINQ Queries

To write LINQ queries we use the **LINQ Standard Query Operators**

```
select  
from  
where  
orderby  
join  
groupby
```

**There are 2 ways to write LINQ queries using these Standard Query Operators**

1. Using Lambda Expressions. Discussed in Part 99 of C# Tutorial
2. Using SQL like query expressions

**From a performance perspective there is no difference between the two. Which one to use depends on your personal preference.**

**Note:** Behind the scene, LINQ queries written using SQL like query expressions are translated into their lambda expressions before they are compiled.

**The Standard Query Operators are implemented as extension methods on I`Enumerable<T>` interface**

Visual Studio Tips and Tricks

Java Video Tutorials Part 1 :  
[Video](#) | [Text](#) | [Slides](#)

Part 2 : [Video](#) | [Text](#) | [Slides](#)

Part 3 : [Video](#) | [Text](#) | [Slides](#)

Interview Questions C#

SQL Server

Written Test

# Different ways of writing LINQ Queries

```
public class Student
{
    public int ID { get; set; }
    public string Name { get; set; }
    public string Gender { get; set; }

    public static List<Student> GetAllStudents() ...
}
```



```
//LINQ query using Lambda Expressions.
IQueryable<Student> students = Student.GetAllStudents()
    .Where(student => student.Gender == "Male");
```

```
//LINQ query using using SQL like query expressions
IQueryable<Student> students = from student in Student.GetAllStudents()
    where student.Gender == "Male"
    select student;
```



| ID  | Name  | Gender |
|-----|-------|--------|
| 101 | Mark  | Male   |
| 103 | John  | Male   |
| 104 | Steve | Male   |

# Additional Resources

## PRAGIM Home Page:

[www.PragimTech.com](http://www.PragimTech.com)

## Resources:

C#, ADO.NET, ASP.NET, SQL Server & MVC youtube Playlists

<http://www.youtube.com/user/kudvenkat/playlists>

Code samples and text version of all the videos on my blog

<http://www.csharp-video-tutorials.blogspot.com>

To receive email alerts when new videos are uploaded, please subscribe to my YOUTUBE channel

[www.YouTube.com/kudvenkat](http://www.YouTube.com/kudvenkat)

5

[Email This](#)

[BlogThis!](#)

[Share to Twitter](#)

[Share to Facebook](#)

[Share to Pinterest](#)

No comments:

Post a Comment

If you like this website, please share with your friends on facebook and Google+ and recommend us on google using the g+1 button on the top right hand corner.

Newer  
Post

Subscribe to: Post Comments (Atom)

Home

Older  
Post

Powered by [Blogger](#).

# Sql server, .net and c# video tutorial

Free C#, .Net and Sql server video tutorial for beginners and intermediate programmers.

[Support us](#) | [.Net Basics](#) | [C#](#) | [SQL](#) | [ASP.NET](#) | [ADO.NET](#) | [MVC](#) | [Slides](#) | [C# Programs](#) | [Subscribe](#) | [Buy DVD](#) |

Part 3 - Extension Methods in C#

**PRAGIM**

**TECHNOLOGIES**

Training + Placements

Best software training and placements in marathahalli, bangalore. For further details please call 09945699393.

Complete Tutorials Angular tutorial for beginners

Angular 5 Tutorial for beginners

Important Videos The Gift of Education

Web application for your business

How to become .NET developer

Resources available to help you

# LINQ Tutorial

## Part 3 - Extension Methods

Venkat

PRAGIM Technologies

[kudvenkat@gmail.com](mailto:kudvenkat@gmail.com)

<http://csharp-video-tutorials.blogspot.com>

PRAGIM Technologies | 9900113931 | [www.pragimtech.com](http://www.pragimtech.com) | [www.facebook.com/pragimtech](https://www.facebook.com/pragimtech)

1

ASP.NET Core What is ASP.NET  
Core | Text | Slides

Dot Net Video Tutorials Angular 6  
Tutorial

Angular CRUD Tutorial

Angular CLI Tutorial

Angular 2 Tutorial

Design Patterns

SOLID Principles

ASP.NET Web API

Bootstrap

AngularJS Tutorial

jQuery Tutorial

JavaScript with ASP.NET Tutorial

JavaScript Tutorial

Charts Tutorial

LINQ

LINQ to SQL

LINQ to XML

Entity Framework

WCF

# In this session we will learn

- What are Extension Methods
- How to implement extension methods

## LINQ Tutorial

Part 1 - What is LINQ

Part 2 - Writing LINQ Queries

Link to Dot Net Basics, ASP.NET, C#, ADO.NET and SQL Server video series

<http://www.youtube.com/user/kudvenkat/videos?view=1>

2

PRAGIM Technologies | 9900113931 | [www.pragimtech.com](http://www.pragimtech.com) | [www.facebook.com/pragimtech](http://www.facebook.com/pragimtech)

<http://csharp-video-tutorials.blogspot.com>

ASP.NET Web Services

Dot Net Basics

C#

SQL Server

ADO.NET

ASP.NET

GridView

ASP.NET MVC

Visual Studio Tips and Tricks

Dot Net Interview Questions

Slides Entity Framework

WCF

ASP.NET Web Services

Dot Net Basics

C#

SQL Server

ADO.NET

ASP.NET

GridView

ASP.NET MVC

# Extension Methods

## Dot Net & SQL Server Playlists

<http://www.youtube.com/user/kudvenkat/playlists>

### What are Extension Methods

According to MSDN, Extension methods enable you to "add" methods to existing types without creating a new derived type, recompiling, or otherwise modifying the original type.

Extension methods are a special kind of static method, but they are called as if they were instance methods on the extended type.

For client code written in C# and Visual Basic, there is no apparent difference between calling an extension method and the methods that are actually defined in a type.

3

PRAGIM Technologies | 9900113931 | [www.pragimtech.com](http://www.pragimtech.com) | [www.facebook.com/pragimtech](http://www.facebook.com/pragimtech)

<http://csharp-video-tutorials.blogspot.com>

Visual Studio Tips and Tricks

Java Video Tutorials Part 1 :  
Video | Text | Slides

Part 2 : Video | Text | Slides

Part 3 : Video | Text | Slides

Interview Questions C#

SQL Server

Written Test

# Extension Methods

LINQ's standard query operators (select, where etc) are implemented in Enumerable class as extension methods on the `IEnumerable<T>` interface.

Now look at the following query

```
List<int> Numbers = new List<int> { 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 };
IQueryable<int> EvenNumbers = Numbers.Where(n => n % 2 == 0);
```

In spite of `Where()` method not belonging to `List<T>` class, we are still able to use it as though it belongs to `List<T>` class. This is possible because `Where()` method is implemented as extension method in `IEnumerable<T>` interface and `List<T>` implements `IEnumerable<T>` interface.

# How to implement extension methods

```
public class StringHelper
{
    public static string ChangeFirstLetterCase(string inputString)
    {
        if (inputString.Length > 0)
        {
            char[] charArray = inputString.ToCharArray();
            charArray[0] = char.ToUpper(charArray[0]) ?
                char.ToLower(charArray[0]) : char.ToUpper(charArray[0]);
            return new string(charArray);
        }
        public static class StringHelper
        {
            public static string ChangeFirstLetterCase(this string inputString)
            {
                if (inputString.Length > 0)
                {
                    char[] charArray = inputString.ToCharArray();
                    charArray[0] = char.ToUpper(charArray[0]) ?
                        char.ToLower(charArray[0]) : char.ToUpper(charArray[0]);
                    return new string(charArray);
                }
                return inputString;
            }
        }
    }
}
```

# How to implement extension methods

We should be able to call this extension method in the same way we call an instance method. Notice that the extension method shows up in the intellisense as well, but with a different visual clue.

```
string strName = "test";
string result = strName.ChangeFirstLetterCase();
```

Please note that, we should still be able to call this extension method using wrapper class style syntax. In fact, behind the scene this is how the method actually gets called. Extension methods are just a syntactic sugar.

```
string strName = "test";
string result = StringHelper.ChangeFirstLetterCase(strName);
```

So, this also means we should also be able to call LINQ extension methods (select, where etc), using wrapper class style syntax. Since all LINQ extension methods are defined in Enumerable class, the syntax will be as shown below.

```
List<int> Numbers = new List<int> { 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 };
IQueryable<int> EvenNumbers = Enumerable.Where(Numbers, n => n % 2 == 0);
```

# Additional Resources

## PRAGIM Home Page:

[www.PragimTech.com](http://www.PragimTech.com)

## Resources:

C#, ADO.NET, ASP.NET, SQL Server & MVC youtube Playlists

<http://www.youtube.com/user/kudvenkat/playlists>

Code samples and text version of all the videos on my blog

<http://www.csharp-video-tutorials.blogspot.com>

To receive email alerts when new videos are uploaded, please subscribe to my YOUTUBE channel

[www.YouTube.com/kudvenkat](http://www.YouTube.com/kudvenkat)

7

Email This

Blog This!

Share to Twitter

Share to Facebook

Share to Pinterest

1 comment:

1.

Elvin Qeribzadeh June 10, 2015 at 10:07 AM



why is static and this in red square

Reply

---

Add comment

If you like this website, please share with your friends on facebook and Google+ and recommend us on google using the g+1 button on the top right hand corner.

Newer  
Post

[Home](#)

Older  
Post

Subscribe to: Post Comments (Atom)

Powered by [Blogger](#).

# Sql server, .net and c# video tutorial

Free C#, .Net and Sql server video tutorial for beginners and intermediate programmers.

[Support us](#) | [.Net Basics](#) | [C#](#) | [SQL](#) | [ASP.NET](#) | [ADO.NET](#) | [MVC](#) | [Slides](#) | [C# Programs](#) | [Subscribe](#) | [Buy DVD](#) |

Part 4 - LINQ Aggregate Functions



Best software training and placements in marathahalli, bangalore. For further details please call 09945699393.

Complete Tutorials Angular tutorial for beginners

Angular 5 Tutorial for beginners

Important Videos The Gift of Education

Web application for your business

How to become .NET developer

Resources available to help you

## LINQ Tutorial

### Part 4 - LINQ Aggregate Functions

Venkat

PRAGIM Technologies

[kudvenkat@gmail.com](mailto:kudvenkat@gmail.com)

<http://csharp-video-tutorials.blogspot.com>

PRAGIM Technologies | 9900113931 | [www.pragimtech.com](http://www.pragimtech.com) | [www.facebook.com/pragimtech](https://www.facebook.com/pragimtech)

1

ASP.NET Core What is ASP.NET  
Core | Text | Slides

Dot Net Video Tutorials Angular 6  
Tutorial

Angular CRUD Tutorial

Angular CLI Tutorial

Angular 2 Tutorial

Design Patterns

SOLID Principles

ASP.NET Web API

Bootstrap

AngularJS Tutorial

jQuery Tutorial

JavaScript with ASP.NET Tutorial

JavaScript Tutorial

Charts Tutorial

LINQ

LINQ to SQL

LINQ to XML

Entity Framework

WCF

# In this session we will learn

- Aggregate Functions in LINQ

## LINQ Tutorial

- Part 1 - What is LINQ
- Part 2 - Writing LINQ Queries
- Part 3 - Extension Methods

Link to Dot Net Basics, ASP.NET, C#, ADO.NET and SQL Server video series

<http://www.youtube.com/user/kudvenkat/videos?view=1>

2

PRAGIM Technologies | 9900113931 | [www.pragimtech.com](http://www.pragimtech.com) | [www.facebook.com/pragimtech](http://www.facebook.com/pragimtech)

<http://csharp-video-tutorials.blogspot.com>

ASP.NET Web Services

Dot Net Basics

C#

SQL Server

ADO.NET

ASP.NET

GridView

ASP.NET MVC

Visual Studio Tips and Tricks

Dot Net Interview Questions

Slides Entity Framework

WCF

ASP.NET Web Services

Dot Net Basics

C#

SQL Server

ADO.NET

ASP.NET

GridView

ASP.NET MVC

# LINQ Aggregate Functions

Dot Net & SQL Server Playlists

<http://www.youtube.com/user/kudvenkat/playlists>

LINQ Standard Query Operators also called as LINQ extension methods can be broadly classified into the following categories

|                        |                           |
|------------------------|---------------------------|
| Aggregate Operators    | Generation Operators      |
| Grouping Operators     | Query Execution           |
| Restriction Operators  | Join Operators            |
| Projection Operators   | Custom Sequence Operators |
| Set Operators          | Quantifiers Operators     |
| Partitioning Operators | Miscellaneous Operators   |
| Conversion Operators   |                           |

In this video we will discuss the following LINQ Aggregate Operators

|     |                        |
|-----|------------------------|
| Min | Count                  |
| Max | Average                |
| Sum | Aggregate (Next Video) |

3

PRAGIM Technologies | 9900113931 | [www.pragimtech.com](http://www.pragimtech.com) | [www.facebook.com/pragimtech](http://www.facebook.com/pragimtech)

<http://csharp-video-tutorials.blogspot.com>

Visual Studio Tips and Tricks

Java Video Tutorials Part 1 :

Video | Text | Slides

Part 2 : [Video](#) | [Text](#) | [Slides](#)

Part 3 : [Video](#) | [Text](#) | [Slides](#)

Interview Questions C#

SQL Server

Written Test

# LINQ Aggregate Functions

Dot Net & SQL Server Playlists

<http://www.youtube.com/user/kudvenkat/playlists>

```
// Example 1
int[] Numbers = { 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 };

int smallestNumber = Numbers.Min();
int smallestEvenNumber = Numbers.Where(n => n % 2 == 0).Min();

int largestNumber = Numbers.Max();
int largestEvenNumber = Numbers.Where(n => n % 2 == 0).Max();

int sumOfAllNumbers = Numbers.Sum();
int sumOfAllEvenNumbers = Numbers.Where(n => n % 2 == 0).Sum();

int countOfAllNumbers = Numbers.Count();
int countOfAllEvenNumbers = Numbers.Where(n => n % 2 == 0).Count();

double averageOfAllNumbers = Numbers.Average();
double averageOfAllEvenNumbers = Numbers.Where(n => n % 2 == 0).Average();
```

# LINQ Aggregate Functions

## Dot Net & SQL Server Playlists

<http://www.youtube.com/user/kudvenkat/playlists>

```
// Example 2
string[] countries = { "India", "USA", "UK" };

int minCount = countries.Min(x => x.Length);
int maxCount = countries.Max(x => x.Length);

Console.WriteLine("The shortest country name has {0} characters in its name", minCount);
Console.WriteLine("The longest country name has {0} characters in its name", maxCount);
```

# Additional Resources

## PRAGIM Home Page:

[www.PragimTech.com](http://www.PragimTech.com)

## Resources:

C#, ADO.NET, ASP.NET, SQL Server & MVC youtube Playlists

<http://www.youtube.com/user/kudvenkat/playlists>

Code samples and text version of all the videos on my blog

<http://www.csharp-video-tutorials.blogspot.com>

To receive email alerts when new videos are uploaded, please subscribe to my YOUTUBE channel

[www.YouTube.com/kudvenkat](http://www.YouTube.com/kudvenkat)

6

[Email This](#)

[BlogThis!](#)

[Share to Twitter](#)

[Share to Facebook](#)

[Share to Pinterest](#)

No comments:

Post a Comment

If you like this website, please share with your friends on facebook and Google+ and recommend us on google using the g+1 button on the top right hand corner.

Newer  
Post

Subscribe to: Post Comments (Atom)

[Home](#)

Older  
Post

Powered by [Blogger](#).

# Sql server, .net and c# video tutorial

Free C#, .Net and Sql server video tutorial for beginners and intermediate programmers.

[Support us](#) | [.Net Basics](#) | [C#](#) | [SQL](#) | [ASP.NET](#) | [ADO.NET](#) | [MVC](#) | [Slides](#) | [C# Programs](#) | [Subscribe](#) | [Buy DVD](#) |

Part 5 - Aggregate function in LINQ

**PRAGIM**

**TECHNOLOGIES**

Training + Placements

Best software training and placements in marathahalli, bangalore. For further details please call 09945699393.

Complete Tutorials Angular tutorial for beginners

Angular 5 Tutorial for beginners

Important Videos The Gift of Education

Web application for your business

How to become .NET developer

Resources available to help you

# LINQ Tutorial

## Part 5 - Aggregate function in LINQ

Venkat

PRAGIM Technologies

[kudvenkat@gmail.com](mailto:kudvenkat@gmail.com)

<http://csharp-video-tutorials.blogspot.com>

PRAGIM Technologies | 9900113931 | [www.pragimtech.com](http://www.pragimtech.com) | [www.facebook.com/pragimtech](https://www.facebook.com/pragimtech)

1

ASP.NET Core What is ASP.NET  
Core | Text | Slides

Dot Net Video Tutorials Angular 6  
Tutorial

Angular CRUD Tutorial

Angular CLI Tutorial

Angular 2 Tutorial

Design Patterns

SOLID Principles

ASP.NET Web API

Bootstrap

AngularJS Tutorial

jQuery Tutorial

JavaScript with ASP.NET Tutorial

JavaScript Tutorial

Charts Tutorial

LINQ

LINQ to SQL

LINQ to XML

Entity Framework

WCF

# In this session we will learn

- Aggregate function in LINQ

## LINQ Tutorial

[Part 2 - Writing LINQ Queries](#)

[Part 3 - Extension Methods](#)

[Part 4 - LINQ Aggregate Functions](#)

**Link to Dot Net Basics, ASP.NET, C#, ADO.NET and SQL Server video series**

<http://www.youtube.com/user/kudvenkat/videos?view=1>

2

PRAGIM Technologies | 9900113931 | [www.pragimtech.com](http://www.pragimtech.com) | [www.facebook.com/pragimtech](http://www.facebook.com/pragimtech)

<http://csharp-video-tutorials.blogspot.com>

ASP.NET Web Services

Dot Net Basics

C#

SQL Server

ADO.NET

ASP.NET

GridView

ASP.NET MVC

Visual Studio Tips and Tricks

Dot Net Interview Questions

Slides Entity Framework

WCF

ASP.NET Web Services

Dot Net Basics

C#

SQL Server

ADO.NET

ASP.NET

GridView

ASP.NET MVC

# Aggregate Function

Dot Net & SQL Server Playlists

<http://www.youtube.com/user/kudvenkat/playlists>

In Part 4 of LINQ Tutorial, we discussed the following functions.

Min

Max

Sum

Count

Average

In this video we will discuss the use of Aggregate() LINQ function

Visual Studio Tips and Tricks

Java Video Tutorials Part 1 :

Video | Text | Slides

Part 2 : [Video](#) | [Text](#) | [Slides](#)

Part 3 : [Video](#) | [Text](#) | [Slides](#)

Interview Questions C#

SQL Server

Written Test

# Aggregate Function

## Example 1:

```
string[] countries = { "India", "US", "UK", "Canada", "Australia" };
                        ↓
"India, US, UK, Canada, Australia"
```

```
// Without LINQ
string result = string.Empty;
for (int i = 0; i < countries.Length; i++)
{
    result = result + countries[i] + ", ";
}

int lastIndex = result.LastIndexOf(",");
result = result.Remove(lastIndex);

// With LINQ
string result = countries.Aggregate((a, b) => a + ", " + b);
```

# Aggregate Function

## Example 2:

```
// Compute the Product of all Numbers (2 X 3 X 4 X 5)  
int[] Numbers = { 2, 3, 4, 5 };
```



```
int result = Numbers.Aggregate((a, b) => a * b);
```

```
// Without LINQ  
int result = 1;  
foreach (int i in Numbers)  
{  
    result = result * i;  
}
```

```
// With LINQ  
int result = Numbers.Aggregate((a, b) => a * b);
```

## Example 3:

```
int[] Numbers = { 2, 3, 4, 5 };
```

**One of the overloaded version of Aggregate() function has a Seed parameter. If we pass 10 as the value for Seed parameter**

```
int result = Numbers.Aggregate(10, (a, b) => a * b);
```

**Result = 1200 (((10X2)X3)X4)x5)**

# Additional Resources

## PRAGIM Home Page:

[www.PragimTech.com](http://www.PragimTech.com)

## Resources:

C#, ADO.NET, ASP.NET, SQL Server & MVC youtube Playlists

<http://www.youtube.com/user/kudvenkat/playlists>

Code samples and text version of all the videos on my blog

<http://www.csharp-video-tutorials.blogspot.com>

To receive email alerts when new videos are uploaded, please subscribe to my YOUTUBE channel

[www.YouTube.com/kudvenkat](http://www.YouTube.com/kudvenkat)

6

[Email This](#)

[BlogThis!](#)

[Share to Twitter](#)

[Share to Facebook](#)

[Share to Pinterest](#)

No comments:

Post a Comment

If you like this website, please share with your friends on facebook and Google+ and recommend us on google using the g+1 button on the top right hand corner.

Newer  
Post

Subscribe to: Post Comments (Atom)

Home

Older  
Post

Powered by [Blogger](#).

# Sql server, .net and c# video tutorial

Free C#, .Net and Sql server video tutorial for beginners and intermediate programmers.

[Support us](#) | [.Net Basics](#) | [C#](#) | [SQL](#) | [ASP.NET](#) | [ADO.NET](#) | [MVC](#) | [Slides](#) | [C# Programs](#) | [Subscribe](#) | [Buy DVD](#) |

Part 6 - Restriction Operators in LINQ

**PRAGIM**

**TECHNOLOGIES**

Training + Placements

Best software training and placements in marathahalli, bangalore. For further details please call 09945699393.

Complete Tutorials Angular tutorial for beginners

Angular 5 Tutorial for beginners

Important Videos The Gift of Education

Web application for your business

How to become .NET developer

Resources available to help you

# LINQ Tutorial

## Part 6 - Restriction Operators

Venkat

PRAGIM Technologies

[kudvenkat@gmail.com](mailto:kudvenkat@gmail.com)

<http://csharp-video-tutorials.blogspot.com>

PRAGIM Technologies | 9900113931 | [www.pragimtech.com](http://www.pragimtech.com) | [www.facebook.com/pragimtech](https://www.facebook.com/pragimtech)

1

ASP.NET Core What is ASP.NET  
Core | Text | Slides

Dot Net Video Tutorials Angular 6  
Tutorial

Angular CRUD Tutorial

Angular CLI Tutorial

Angular 2 Tutorial

Design Patterns

SOLID Principles

ASP.NET Web API

Bootstrap

AngularJS Tutorial

jQuery Tutorial

JavaScript with ASP.NET Tutorial

JavaScript Tutorial

Charts Tutorial

LINQ

LINQ to SQL

LINQ to XML

Entity Framework

WCF

# In this session we will learn

- Restriction Operators in LINQ

## LINQ Tutorial

Part 3 - Extension Methods

Part 4 - LINQ Aggregate Functions

Part 5 - Aggregate function in LINQ

Link to Dot Net Basics, ASP.NET, C#, ADO.NET and SQL Server video series

<http://www.youtube.com/user/kudvenkat/videos?view=1>

2

PRAGIM Technologies | 9900113931 | [www.pragimtech.com](http://www.pragimtech.com) | [www.facebook.com/pragimtech](http://www.facebook.com/pragimtech)

<http://csharp-video-tutorials.blogspot.com>

ASP.NET Web Services

Dot Net Basics

C#

SQL Server

ADO.NET

ASP.NET

GridView

ASP.NET MVC

Visual Studio Tips and Tricks

Dot Net Interview Questions

Slides Entity Framework

WCF

ASP.NET Web Services

Dot Net Basics

C#

SQL Server

ADO.NET

ASP.NET

GridView

ASP.NET MVC

# Restriction Operators

## Dot Net & SQL Server Playlists

<http://www.youtube.com/user/kudvenkat/playlists>

The **WHERE** standard query operator belong to **Restriction Operators** category. Just like SQL, the WHERE standard query operator in LINQ is used to filter rows. The filter expression is specified using a predicate.

**2 overloaded versions of WHERE extension method in Enumerable class**

```
public static IEnumerable<TSource> Where<TSource>(
    this IEnumerable<TSource> source, Func<TSource, bool> predicate);

public static IEnumerable<TSource> Where<TSource>(
    this IEnumerable<TSource> source, Func<TSource, int, bool> predicate);
```

**What is a Predicate?**

A predicate is a function to test each element for a condition

**Please Note:** WHERE query operator is optional

3

PRAGIM Technologies | 9900113931 | [www.pragimtech.com](http://www.pragimtech.com) | [www.facebook.com/pragimtech](http://www.facebook.com/pragimtech)

<http://csharp-video-tutorials.blogspot.com>

Visual Studio Tips and Tricks

Java Video Tutorials Part 1 :  
Video | Text | Slides

Part 2 : Video | Text | Slides

Part 3 : Video | Text | Slides

Interview Questions C#

SQL Server

Written Test

# Additional Resources

## PRAGIM Home Page:

[www.PragimTech.com](http://www.PragimTech.com)

## Resources:

C#, ADO.NET, ASP.NET, SQL Server & MVC youtube Playlists

<http://www.youtube.com/user/kudvenkat/playlists>

Code samples and text version of all the videos on my blog

<http://www.csharp-video-tutorials.blogspot.com>

To receive email alerts when new videos are uploaded, please subscribe to my YOUTUBE channel

[www.YouTube.com/kudvenkat](http://www.YouTube.com/kudvenkat)

4

[Email This](#)

[BlogThis!](#)

[Share to Twitter](#)

[Share to Facebook](#)

[Share to Pinterest](#)

No comments:

Post a Comment

If you like this website, please share with your friends on facebook and Google+ and recommend us on google using the g+1 button on the top right hand corner.

Newer  
Post

Subscribe to: Post Comments (Atom)

[Home](#)

Older  
Post

Powered by [Blogger](#).

# Sql server, .net and c# video tutorial

Free C#, .Net and Sql server video tutorial for beginners and intermediate programmers.

[Support us](#) | [.Net Basics](#) | [C#](#) | [SQL](#) | [ASP.NET](#) | [ADO.NET](#) | [MVC](#) | [Slides](#) | [C# Programs](#) | [Subscribe](#) | [Buy DVD](#) |

Part 7 - Projection Operators in LINQ

**PRAGIM**

**TECHNOLOGIES**

Training + Placements

Best software training and placements in marathahalli, bangalore. For further details please call 09945699393.

Complete Tutorials Angular tutorial for beginners

Angular 5 Tutorial for beginners

Important Videos The Gift of Education

Web application for your business

How to become .NET developer

Resources available to help you

# LINQ Tutorial

## Part 7 - Projection Operators

Venkat

PRAGIM Technologies

[kudvenkat@gmail.com](mailto:kudvenkat@gmail.com)

<http://csharp-video-tutorials.blogspot.com>

PRAGIM Technologies | 9900113931 | [www.pragimtech.com](http://www.pragimtech.com) | [www.facebook.com/pragimtech](https://www.facebook.com/pragimtech)

1

ASP.NET Core What is ASP.NET  
Core | Text | Slides

Dot Net Video Tutorials Angular 6  
Tutorial

Angular CRUD Tutorial

Angular CLI Tutorial

Angular 2 Tutorial

Design Patterns

SOLID Principles

ASP.NET Web API

Bootstrap

AngularJS Tutorial

jQuery Tutorial

JavaScript with ASP.NET Tutorial

JavaScript Tutorial

Charts Tutorial

LINQ

LINQ to SQL

LINQ to XML

Entity Framework

WCF

# In this session we will learn

- Projection Operators in LINQ

## LINQ Tutorial

[Part 4 - LINQ Aggregate Functions](#)

[Part 5 - Aggregate function](#)

[Part 6 - Restriction Operators](#)

**Link to Dot Net Basics, ASP.NET, C#, ADO.NET and SQL Server video series**

<http://www.youtube.com/user/kudvenkat/videos?view=1>

2

PRAGIM Technologies | 9900113931 | [www.pragimtech.com](http://www.pragimtech.com) | [www.facebook.com/pragimtech](http://www.facebook.com/pragimtech)

<http://csharp-video-tutorials.blogspot.com>

ASP.NET Web Services

Dot Net Basics

C#

SQL Server

ADO.NET

ASP.NET

GridView

ASP.NET MVC

Visual Studio Tips and Tricks

Dot Net Interview Questions

Slides Entity Framework

WCF

ASP.NET Web Services

Dot Net Basics

C#

SQL Server

ADO.NET

ASP.NET

GridView

ASP.NET MVC

# Projection Operators in LINQ

Dot Net & SQL Server Playlists

<http://www.youtube.com/user/kudvenkat/playlists>

## LINQ Projection Operators

Select

SelectMany

Projection Operators are used to transform the results of a query. Select clause in SQL allows to specify what columns we want to retrieve. In a similar fashion LINQ SELECT standard query operator allows us to specify what properties we want to retrieve. It also allows us to perform calculations.

### Using the SELECT projection operator

1. We can select just EmployeeID property
2. We can select multiple properties (FirstName & Gender) into an anonymous type
3. Perform calculations
  - a) MonthlySalary = AnnualSalary / 12
  - b) FullName = FirstName + " " + LastName

```
public class Employee
{
    public int EmployeeID { get; set; }
    public string FirstName { get; set; }
    public string LastName { get; set; }
    public string Gender { get; set; }
    public int AnnualSalary { get; set; }
}
```

3

PRAGIM Technologies | 9900113931 | [www.pragimtech.com](http://www.pragimtech.com) | [www.facebook.com/pragimtech](http://www.facebook.com/pragimtech)

<http://csharp-video-tutorials.blogspot.com>

Visual Studio Tips and Tricks

Java Video Tutorials Part 1 :

Video | Text | Slides

Part 2 : Video | Text | Slides

Part 3 : Video | Text | Slides

Interview Questions C#

SQL Server

Written Test

# Projection Operators in LINQ

**Example 1:** Retrieves just the EmployeeID property of all employees

```
IEnumerable<int> employeeIds = Employee.GetAllEmployees().Select(emp => emp.EmployeeID);
foreach (int id in employeeIds)
{
    Console.WriteLine(id);
}
```

**Output:**

```
101
102
103
104
Press any key to continue...
```

```
public class Employee
{
    public int EmployeeID { get; set; }
    public string FirstName { get; set; }
    public string LastName { get; set; }
    public string Gender { get; set; }
    public int AnnualSalary { get; set; }
}
```

# Projection Operators in LINQ

**Example 2:** Projects FirstName & Gender properties of all employees into anonymous type.

```
var result = Employee.GetAllEmployees()
    .Select(emp => new { FirstName = emp.FirstName, Gender = emp.Gender });

foreach (var v in result)
{
    Console.WriteLine(v.FirstName + " - " + v.Gender);
}
```

**Output:**

```
Tom – Male
Mike – Male
Mary – Female
Pam – Female
Press any key to continue...
```

```
public class Employee
{
    public int EmployeeID { get; set; }
    public string FirstName { get; set; }
    public string LastName { get; set; }
    public string Gender { get; set; }
    public int AnnualSalary { get; set; }
}
```

# Projection Operators in LINQ

**Example 3:** Computes **FullName & MonthlySalary** of all employees and projects these 2 new computed properties into anonymous type.

```
var result = Employee.GetAllEmployees().Select(emp => new
{
    FullName = emp.FirstName + " " + emp.LastName,
    MonthlySalary = emp.AnnualSalary / 12
});

foreach (var v in result)
{
    Console.WriteLine(v.FullName + " - " + v.MonthlySalary);
}
```

## Output:

```
Tom Daely – 5000
Mike Mist – 6000
Mary Lambeth – 4000
Pam Penny – 7000
Press any key to continue...
```

```
public class Employee
{
    public int EmployeeID { get; set; }
    public string FirstName { get; set; }
    public string LastName { get; set; }
    public string Gender { get; set; }
    public int AnnualSalary { get; set; }
}
```

# Projection Operators in LINQ

**Example 4:** Give 10% bonus to all employees whose annual salary is greater than 50000 and project all such employee's FirstName, AnnualSalary and Bonus into anonymous type.

```
var result = Employee.GetAllEmployees().Where(emp => emp.AnnualSalary > 50000)
    .Select(emp => new
    {
        Name = emp.FirstName,
        Salary = emp.AnnualSalary,
        Bonus = emp.AnnualSalary * .1
    });

foreach (var v in result)
{
    Console.WriteLine(v.Name + " : " + v.Salary + " - " + v.Bonus);
}
```

## Output:

```
Tom : 60000 - 6000
Mike : 72000 - 7200
Pam : 84000 - 8400
Press any key to continue...
```

```
public class Employee
{
    public int EmployeeID { get; set; }
    public string FirstName { get; set; }
    public string LastName { get; set; }
    public string Gender { get; set; }
    public int AnnualSalary { get; set; }
}
```

# Additional Resources

## PRAGIM Home Page:

[www.PragimTech.com](http://www.PragimTech.com)

## Resources:

C#, ADO.NET, ASP.NET, SQL Server & MVC youtube Playlists

<http://www.youtube.com/user/kudvenkat/playlists>

Code samples and text version of all the videos on my blog

<http://www.csharp-video-tutorials.blogspot.com>

To receive email alerts when new videos are uploaded, please subscribe to my YOUTUBE channel

[www.YouTube.com/kudvenkat](http://www.YouTube.com/kudvenkat)

8

[Email This](#)

[BlogThis!](#)

[Share to Twitter](#)

[Share to Facebook](#)

[Share to Pinterest](#)

No comments:

Post a Comment

If you like this website, please share with your friends on facebook and Google+ and recommend us on google using the g+1 button on the top right hand corner.

Newer  
Post

Subscribe to: Post Comments (Atom)

Home

Older  
Post

Powered by [Blogger](#).

# Sql server, .net and c# video tutorial

Free C#, .Net and Sql server video tutorial for beginners and intermediate programmers.

[Support us](#) | [.Net Basics](#) | [C#](#) | [SQL](#) | [ASP.NET](#) | [ADO.NET](#) | [MVC](#) | [Slides](#) | [C# Programs](#) | [Subscribe](#) | [Buy DVD](#) |

Part 8 - SelectMany Operator in LINQ

**PRAGIM**

**TECHNOLOGIES**

Training + Placements

Best software training and placements in marathahalli, bangalore. For further details please call 09945699393.

Complete Tutorials Angular tutorial for beginners

Angular 5 Tutorial for beginners

Important Videos The Gift of Education

Web application for your business

How to become .NET developer

Resources available to help you

# LINQ Tutorial

## Part 8 - SelectMany Operator

Venkat

PRAGIM Technologies

[kudvenkat@gmail.com](mailto:kudvenkat@gmail.com)

<http://csharp-video-tutorials.blogspot.com>

PRAGIM Technologies | 9900113931 | [www.pragimtech.com](http://www.pragimtech.com) | [www.facebook.com/pragimtech](https://www.facebook.com/pragimtech)

1

ASP.NET Core What is ASP.NET  
Core | Text | Slides

Dot Net Video Tutorials Angular 6  
Tutorial

Angular CRUD Tutorial

Angular CLI Tutorial

Angular 2 Tutorial

Design Patterns

SOLID Principles

ASP.NET Web API

Bootstrap

AngularJS Tutorial

jQuery Tutorial

JavaScript with ASP.NET Tutorial

JavaScript Tutorial

Charts Tutorial

LINQ

LINQ to SQL

LINQ to XML

Entity Framework

WCF

# In this session we will learn

- SelectMany Operator

## LINQ Tutorial

- Part 5 - Aggregate function
- Part 6 - Restriction Operators
- Part 7 - Projection Operators

Link to Dot Net Basics, ASP.NET, C#, ADO.NET and SQL Server video series

<http://www.youtube.com/user/kudvenkat/videos?view=1>

2

PRAGIM Technologies | 9900113931 | [www.pragimtech.com](http://www.pragimtech.com) | [www.facebook.com/pragimtech](http://www.facebook.com/pragimtech)

<http://csharp-video-tutorials.blogspot.com>

ASP.NET Web Services

Dot Net Basics

C#

SQL Server

ADO.NET

ASP.NET

GridView

ASP.NET MVC

Visual Studio Tips and Tricks

Dot Net Interview Questions

Slides Entity Framework

WCF

ASP.NET Web Services

Dot Net Basics

C#

SQL Server

ADO.NET

ASP.NET

GridView

ASP.NET MVC

# SelectMany Operator in LINQ

Dot Net & SQL Server Playlists

<http://www.youtube.com/user/kudvenkat/playlists>

LINQ Projection Operators

Select

SelectMany

SelectMany is used to project each element of a sequence to an IEnumerable<T> and flattens the resulting sequences into one sequence

Subjects property in this class is a collection of strings

```
public class Student
{
    public string Name { get; set; }
    public string Gender { get; set; }
    public List<string> Subjects { get; set; }
}
```

Visual Studio Tips and Tricks

Java Video Tutorials Part 1 :

Video | Text | Slides

Part 2 : [Video](#) | [Text](#) | [Slides](#)

Part 3 : [Video](#) | [Text](#) | [Slides](#)

Interview Questions C#

SQL Server

Written Test

# SelectMany Operator in LINQ

**Example 1:** Projects all subject strings of a given a student to an `IEnumerable<string>`.

In this example since we have 4 students, there will be 4 `IEnumerable<string>` sequences, which are then flattened to form a single sequence i.e a single `IEnumerable<string>` sequence.

```
IEnumerable<string> allSubjects = Student.GetAllStudents().SelectMany(s => s.Subjects);
foreach (string subject in allSubjects)
{
    Console.WriteLine(subject);
}
```

## Output:

```
ASP.NET
C#
ADO.NET
C#
AJAX
WCF
SQL Server
C#
WPF
LINQ
ASP.NET
Press any key to continue...
```

4

PRAGIM Technologies | 9900113931 | [www.pragimtech.com](http://www.pragimtech.com) | [www.facebook.com/pragimtech](http://www.facebook.com/pragimtech)

<http://csharp-video-tutorials.blogspot.com>

# SelectMany Operator in LINQ

**Example 2:** Rewrite Example1 using SQL like syntax. When using SQL like syntax style, we don't use **SelectMany**, instead we will have an additional from clause, which will get it's data from the results of the first from clause.

```
IEnumerable<string> allSubjects = from student in Student.GetAllStudents()
                                    from subject in student.Subjects
                                    select subject;

foreach (string subject in allSubjects)
{
    Console.WriteLine(subject);
}
```

## Output:

```
ASP.NET
C#
ADO.NET
C#
AJAX
WCF
SQL Server
C#
WPF
LINQ
ASP.NET
Press any key to continue...
```

5

PRAGIM Technologies | 9900113931 | [www.pragimtech.com](http://www.pragimtech.com) | [www.facebook.com/pragimtech](http://www.facebook.com/pragimtech)

<http://csharp-video-tutorials.blogspot.com>

# SelectMany Operator in LINQ

**Example 3:** Projects each string to an `IEnumerable<char>`. In this example since we have 2 strings, there will be 2 `IEnumerable<char>` sequences, which are then flattened to form a single sequence i.e a single `IEnumerable<char>` sequence.

```
string[] stringArray =  
{  
    "ABCDEFGHIJKLMNOPQRSTUVWXYZ",  
    "0123456789"  
};  
  
IEnumerable<char> result = stringArray.SelectMany(s => s);  
foreach (char c in result)  
{  
    Console.WriteLine(c);  
}
```

Output

```
A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
K  
L  
M  
N  
O  
P  
Q  
R  
S  
T  
U  
V  
W  
X  
Y  
Z  
0  
1  
2  
3  
4  
5  
6  
7  
8  
9
```

Press any key to continue ...

# SelectMany Operator in LINQ

Example 4: Rewrite Example 3 using SQL like syntax

```
string[] stringArray =  
{  
    "ABCDEFGHIJKLMNPQRSTUVWXYZ",  
    "0123456789"  
};  
  
IQueryable<char> result = from s in stringArray  
                           from c in s  
                           select c;  
  
foreach (char c in result)  
{  
    Console.WriteLine(c);  
}
```

Output

```
A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
K  
L  
M  
N  
O  
P  
Q  
R  
S  
T  
U  
V  
W  
X  
Y  
Z  
0  
1  
2  
3  
4  
5  
6  
7  
8  
9
```

Press any key to continue...

# SelectMany Operator in LINQ

## Example 5: Selects only the distinct subjects

```
 IEnumerable<string> allSubjects = Student.GetAllStudents()
                                .SelectMany(s => s.Subjects).Distinct();
foreach (string subject in allSubjects)
{
    Console.WriteLine(subject);
}
```

## Output:

```
ASP.NET
C#
ADO.NET
AJAX
WCF
SQL Server
WPF
LINQ
Press any key to continue ...
```

# SelectMany Operator in LINQ

## Example 6: Rewrite Example5 using SQL like syntax

```
IEnumerable<string> allSubjects = (from student in Student.GetAllStudents()
                                    from subject in student.Subjects
                                    select subject).Distinct();

foreach (string subject in allSubjects)
{
    Console.WriteLine(subject);
}
```

### Output:

```
ASP.NET
C#
ADO.NET
AJAX
WCF
SQL Server
WPF
LINQ
Press any key to continue ...
```

9

PRAGIM Technologies | 9900113931 | [www.pragimtech.com](http://www.pragimtech.com) | [www.facebook.com/pragimtech](http://www.facebook.com/pragimtech)

<http://csharp-video-tutorials.blogspot.com>

# SelectMany Operator in LINQ

## Example 7: Selects studentname along with all the subjects

```
var result = Student.GetAllStudents().SelectMany(s => s.Subjects, (student, subject) =>
    new { StudentName = student.Name, Subject = subject });

foreach (var v in result)
{
    Console.WriteLine(v.StudentName + " - " + v.Subject);
}
```

### Output:

```
Tom - ASP.NET
Tom - C#
Mike - ADO.NET
Mike - C#
Mike - AJAX
Pam - WCF
Pam - SQL Server
Pam - C#
Mary - WPF
Mary - LINQ
Mary - ASP.NET
Press any key to continue...
```

# SelectMany Operator in LINQ

## Example 8: Rewrite Example 7 using SQL like syntax

```
var result = from student in Student.GetAllStudents()
             from subject in student.Subjects
             select new { StudnetName = student.Name, Subject = subject };

foreach (var v in result)
{
    Console.WriteLine(v.StudnetName + " - " + v.Subject);
}
```

## Output:

```
Tom - ASP.NET
Tom - C#
Mike - ADO.NET
Mike - C#
Mike - AJAX
Pam - WCF
Pam - SQL Server
Pam - C#
Mary - WPF
Mary - LINQ
Mary - ASP.NET
Press any key to continue...
```

# Additional Resources

## PRAGIM Home Page:

[www.PragimTech.com](http://www.PragimTech.com)

## Resources:

C#, ADO.NET, ASP.NET, SQL Server & MVC youtube Playlists

<http://www.youtube.com/user/kudvenkat/playlists>

Code samples and text version of all the videos on my blog

<http://www.csharp-video-tutorials.blogspot.com>

To receive email alerts when new videos are uploaded, please subscribe to my YOUTUBE channel

[www.YouTube.com/kudvenkat](http://www.YouTube.com/kudvenkat)

12

[Email This](#)

[BlogThis!](#)

[Share to Twitter](#)

[Share to Facebook](#)

[Share to Pinterest](#)

No comments:

Post a Comment

If you like this website, please share with your friends on facebook and Google+ and recommend us on google using the g+1 button on the top right hand corner.

Newer  
Post

Subscribe to: Post Comments (Atom)

Home

Older  
Post

Powered by [Blogger](#).

# Sql server, .net and c# video tutorial

Free C#, .Net and Sql server video tutorial for beginners and intermediate programmers.

[Support us](#) | [.Net Basics](#) | [C#](#) | [SQL](#) | [ASP.NET](#) | [ADO.NET](#) | [MVC](#) | [Slides](#) | [C# Programs](#) | [Subscribe](#) | [Buy DVD](#) |

Part 9 - Difference between Select and SelectMany in LINQ

**PRAGIM**

**TECHNOLOGIES**

Training + Placements

Best software training and placements in marathahalli, bangalore. For further details please call 09945699393.

Complete Tutorials Angular tutorial for beginners

Angular 5 Tutorial for beginners

Important Videos The Gift of Education

Web application for your business

How to become .NET developer

Resources available to help you

# LINQ Tutorial

## Part 9 - Select v/s SelectMany

Venkat

PRAGIM Technologies

[kudvenkat@gmail.com](mailto:kudvenkat@gmail.com)

<http://csharp-video-tutorials.blogspot.com>

PRAGIM Technologies | 9900113931 | [www.pragimtech.com](http://www.pragimtech.com) | [www.facebook.com/pragimtech](https://www.facebook.com/pragimtech)

1

ASP.NET Core What is ASP.NET  
Core | Text | Slides

Dot Net Video Tutorials Angular 6  
Tutorial

Angular CRUD Tutorial

Angular CLI Tutorial

Angular 2 Tutorial

Design Patterns

SOLID Principles

ASP.NET Web API

Bootstrap

AngularJS Tutorial

jQuery Tutorial

JavaScript with ASP.NET Tutorial

JavaScript Tutorial

Charts Tutorial

LINQ

LINQ to SQL

LINQ to XML

Entity Framework

WCF

# In this session we will learn

- Difference between Select and SelectMany

## LINQ Tutorial

- Part 6 - Restriction Operators
- Part 7 - Projection Operators
- Part 8 - SelectMany Operator

Link to Dot Net Basics, ASP.NET, C#, ADO.NET and SQL Server video series  
<http://www.youtube.com/user/kudvenkat/videos?view=1>

2

PRAGIM Technologies | 9900113931 | [www.pragimtech.com](http://www.pragimtech.com) | [www.facebook.com/pragimtech](http://www.facebook.com/pragimtech)  
<http://csharp-video-tutorials.blogspot.com>

ASP.NET Web Services

Dot Net Basics

C#

SQL Server

ADO.NET

ASP.NET

GridView

ASP.NET MVC

Visual Studio Tips and Tricks

Dot Net Interview Questions

Slides Entity Framework

WCF

ASP.NET Web Services

Dot Net Basics

C#

SQL Server

ADO.NET

ASP.NET

GridView

ASP.NET MVC

# Select v/s SelectMany

**Select() method returns List of List<string>. To print all the subjects we will have to use 2 nested foreach loops.**

```
IEnumerable<List<string>> result = Student.GetAllStudents()
    .Select(s => s.Subjects);
foreach (List<string> stringList in result)
{
    foreach (string str in stringList)
    {
        Console.WriteLine(str);
    }
}
```

```
ASP.NET
C#
ADO.NET
C#
AJAX
WCF
SQL Server
C#
WPF
LINQ
ASP.NET
Press any key to continue...
```

**SelectMany() on the other hand, flattens queries that return lists of lists into a single list. So in this case to print all the subjects we have to use just one foreach loop.**

```
IEnumerable<string> result = Student.GetAllStudents().SelectMany(s => s.Subjects);
foreach (string str in result)
{
    Console.WriteLine(str);
}
```

**Dot Net & SQL Server Playlists**

<http://www.youtube.com/user/kudvenkat/playlists>

3

PRAGIM Technologies | 9900113931 | [www.pragimtech.com](http://www.pragimtech.com) | [www.facebook.com/pragimtech](http://www.facebook.com/pragimtech)

<http://csharp-video-tutorials.blogspot.com>

Visual Studio Tips and Tricks

Java Video Tutorials Part 1 :  
[Video](#) | [Text](#) | [Slides](#)

Part 2 : [Video](#) | [Text](#) | [Slides](#)

Part 3 : [Video](#) | [Text](#) | [Slides](#)

Interview Questions C#

SQL Server

Written Test

# Additional Resources

## PRAGIM Home Page:

[www.PragimTech.com](http://www.PragimTech.com)

## Resources:

C#, ADO.NET, ASP.NET, SQL Server & MVC youtube Playlists

<http://www.youtube.com/user/kudvenkat/playlists>

Code samples and text version of all the videos on my blog

<http://www.csharp-video-tutorials.blogspot.com>

To receive email alerts when new videos are uploaded, please subscribe to my YOUTUBE channel

[www.YouTube.com/kudvenkat](http://www.YouTube.com/kudvenkat)

4

[Email This](#)

[BlogThis!](#)

[Share to Twitter](#)

[Share to Facebook](#)

[Share to Pinterest](#)

No comments:

Post a Comment

If you like this website, please share with your friends on facebook and Google+ and recommend us on google using the g+1 button on the top right hand corner.

Newer  
Post

Subscribe to: Post Comments (Atom)

Home

Older  
Post

Powered by [Blogger](#).

# Sql server, .net and c# video tutorial

Free C#, .Net and Sql server video tutorial for beginners and intermediate programmers.

[Support us](#) | [.Net Basics](#) | [C#](#) | [SQL](#) | [ASP.NET](#) | [ADO.NET](#) | [MVC](#) | [Slides](#) | [C# Programs](#) | [Subscribe](#) | [Buy DVD](#) |

Part 10 - Ordering Operators in LINQ

**PRAGIM**

**TECHNOLOGIES**

Training + Placements

Best software training and placements in marathahalli, bangalore. For further details please call 09945699393.

Complete Tutorials Angular tutorial for beginners

Angular 5 Tutorial for beginners

Important Videos The Gift of Education

Web application for your business

How to become .NET developer

Resources available to help you

## LINQ Tutorial

### Part 10 - Ordering Operators

Venkat

PRAGIM Technologies

[kudvenkat@gmail.com](mailto:kudvenkat@gmail.com)

<http://csharp-video-tutorials.blogspot.com>

PRAGIM Technologies | 9900113931 | [www.pragimtech.com](http://www.pragimtech.com) | [www.facebook.com/pragimtech](https://www.facebook.com/pragimtech)

1

ASP.NET Core What is ASP.NET  
Core | Text | Slides

Dot Net Video Tutorials Angular 6  
Tutorial

Angular CRUD Tutorial

Angular CLI Tutorial

Angular 2 Tutorial

Design Patterns

SOLID Principles

ASP.NET Web API

Bootstrap

AngularJS Tutorial

jQuery Tutorial

JavaScript with ASP.NET Tutorial

JavaScript Tutorial

Charts Tutorial

LINQ

LINQ to SQL

LINQ to XML

Entity Framework

WCF

# In this session we will learn

- Ordering Operators in LINQ

## LINQ Tutorial

Part 7 - Projection Operators

Part 8 - SelectMany Operator

Part 9 - Difference between Select and SelectMany

Link to Dot Net Basics, ASP.NET, C#, ADO.NET and SQL Server video series

<http://www.youtube.com/user/kudvenkat/videos?view=1>

2

PRAGIM Technologies | 9900113931 | [www.pragimtech.com](http://www.pragimtech.com) | [www.facebook.com/pragimtech](http://www.facebook.com/pragimtech)

<http://csharp-video-tutorials.blogspot.com>

ASP.NET Web Services

Dot Net Basics

C#

SQL Server

ADO.NET

ASP.NET

GridView

ASP.NET MVC

Visual Studio Tips and Tricks

Dot Net Interview Questions

Slides Entity Framework

WCF

ASP.NET Web Services

Dot Net Basics

C#

SQL Server

ADO.NET

ASP.NET

GridView

ASP.NET MVC

# Ordering Operators

Dot Net & SQL Server Playlists

<http://www.youtube.com/user/kudvenkat/playlists>

**Ordering Operators**

**OrderBy**

**OrderByDescending**

**ThenBy**

**ThenByDescending**

**Reverse**

**OrderBy**, **OrderByDescending**, **ThenBy**, and **ThenByDescending** can be used to sort data.

**Reverse** method simply reverses the items in a given collection.

Visual Studio Tips and Tricks

Java Video Tutorials Part 1 :

Video | Text | Slides

Part 2 : [Video](#) | [Text](#) | [Slides](#)

Part 3 : [Video](#) | [Text](#) | [Slides](#)

Interview Questions C#

SQL Server

Written Test

# Ordering Operators

## Example 1: Sort Students by Name in ascending order

```
IEnumerable<Student> result = Student.GetAllStudents().OrderBy(s => s.Name);
foreach (Student student in result)
{
    Console.WriteLine(student.Name);
}
```

### Output:

```
John
Mary
Tom
Valarie
Press any key to continue...
```

## Example 2: Rewrite Example 1 using SQL like syntax

```
IEnumerable<Student> result = from student in Student.GetAllStudents()
                                orderby student.Name
                                select student;

foreach (Student student in result)
{
    Console.WriteLine(student.Name);
}
```

# Ordering Operators

## Example 3: Sort Students by Name in descending order

```
IEnumerable<Student> result = Student.GetAllStudents().OrderByDescending(s => s.Name);  
foreach (Student student in result)  
{  
    Console.WriteLine(student.Name);  
}
```

### Output:

```
Valarie  
Tom  
Mary  
John  
Press any key to continue...
```

## Example 4: Rewrite Example 3 using SQL like syntax

```
IEnumerable<Student> result = from student in Student.GetAllStudents()  
                                orderby student.Name descending  
                                select student;  
  
foreach (Student student in result)  
{  
    Console.WriteLine(student.Name);  
}
```

# Additional Resources

## PRAGIM Home Page:

[www.PragimTech.com](http://www.PragimTech.com)

## Resources:

C#, ADO.NET, ASP.NET, SQL Server & MVC youtube Playlists

<http://www.youtube.com/user/kudvenkat/playlists>

Code samples and text version of all the videos on my blog

<http://www.csharp-video-tutorials.blogspot.com>

To receive email alerts when new videos are uploaded, please subscribe to my YOUTUBE channel

[www.YouTube.com/kudvenkat](http://www.YouTube.com/kudvenkat)

6

[Email This](#)

[BlogThis!](#)

[Share to Twitter](#)

[Share to Facebook](#)

[Share to Pinterest](#)

No comments:

Post a Comment

If you like this website, please share with your friends on facebook and Google+ and recommend us on google using the g+1 button on the top right hand corner.

Newer  
Post

Subscribe to: Post Comments (Atom)

Home

Older  
Post

Powered by [Blogger](#).

# Sql server, .net and c# video tutorial

Free C#, .Net and Sql server video tutorial for beginners and intermediate programmers.

[Support us](#) | [.Net Basics](#) | [C#](#) | [SQL](#) | [ASP.NET](#) | [ADO.NET](#) | [MVC](#) | [Slides](#) | [C# Programs](#) | [Subscribe](#) | [Buy DVD](#) |

Part 11 - Ordering Operators in LINQ - II

**PRAGIM**

**TECHNOLOGIES**

Training + Placements

Best software training and placements in marathahalli, bangalore. For further details please call 09945699393.

Complete Tutorials Angular tutorial for beginners

Angular 5 Tutorial for beginners

Important Videos The Gift of Education

Web application for your business

How to become .NET developer

Resources available to help you

## LINQ Tutorial

### Part 11 - Ordering Operators - II

Venkat

PRAGIM Technologies

[kudvenkat@gmail.com](mailto:kudvenkat@gmail.com)

<http://csharp-video-tutorials.blogspot.com>

PRAGIM Technologies | 9900113931 | [www.pragimtech.com](http://www.pragimtech.com) | [www.facebook.com/pragimtech](https://www.facebook.com/pragimtech)

1

ASP.NET Core What is ASP.NET  
Core | Text | Slides

Dot Net Video Tutorials Angular 6  
Tutorial

Angular CRUD Tutorial

Angular CLI Tutorial

Angular 2 Tutorial

Design Patterns

SOLID Principles

ASP.NET Web API

Bootstrap

AngularJS Tutorial

jQuery Tutorial

JavaScript with ASP.NET Tutorial

JavaScript Tutorial

Charts Tutorial

LINQ

LINQ to SQL

LINQ to XML

Entity Framework

WCF

# In this session we will learn

- Ordering Operators in LINQ continued...

## LINQ Tutorial

[Part 8 - SelectMany Operator](#)

[Part 9 - Difference between Select and SelectMany](#)

[Part 10 - Ordering Operators in LINQ](#)

**Link to Dot Net Basics, ASP.NET, C#, ADO.NET and SQL Server video series**

<http://www.youtube.com/user/kudvenkat/videos?view=1>

2

PRAGIM Technologies | 9900113931 | [www.pragimtech.com](http://www.pragimtech.com) | [www.facebook.com/pragimtech](http://www.facebook.com/pragimtech)

<http://csharp-video-tutorials.blogspot.com>

ASP.NET Web Services

Dot Net Basics

C#

SQL Server

ADO.NET

ASP.NET

GridView

ASP.NET MVC

Visual Studio Tips and Tricks

Dot Net Interview Questions

Slides Entity Framework

WCF

ASP.NET Web Services

Dot Net Basics

C#

SQL Server

ADO.NET

ASP.NET

GridView

ASP.NET MVC

# Ordering Operators

Dot Net & SQL Server Playlists

<http://www.youtube.com/user/kudvenkat/playlists>

**Ordering Operators**

OrderBy

OrderByDescending

ThenBy

ThenByDescending

Reverse

OrderBy, OrderByDescending, ThenBy, and ThenByDescending can be used to sort data.

Reverse method simply reverses the items in a given collection.

OrderBy or OrderByDescending work fine when we want to sort a collection just by one value or expression. If we want to sort by more than one value or expression, that's when we use ThenBy or ThenByDescending along with OrderBy or OrderByDescending

OrderBy or OrderByDescending performs the primary sort. ThenBy or ThenByDescending is used for adding secondary sort. Secondary Sort operators (ThenBy or ThenByDescending) can be used more than once in the same LINQ query.

3

PRAGIM Technologies | 9900113931 | [www.pragimtech.com](http://www.pragimtech.com) | [www.facebook.com/pragimtech](http://www.facebook.com/pragimtech)

<http://csharp-video-tutorials.blogspot.com>

Visual Studio Tips and Tricks

Java Video Tutorials Part 1 :

Video | Text | Slides

Part 2 : Video | Text | Slides

Part 3 : Video | Text | Slides

Interview Questions C#

SQL Server

Written Test

# Ordering Operators

## Example 1:

- a) Sorts Students first by **TotalMarks** in ascending order(Primary Sort)
- b) The 4 Students with **TotalMarks of 800**, will then be sorted by **Name** in ascending order (First Secondary Sort)
- c) The 2 Students with **Name of John**, will then be sorted by **StudentID** in ascending order (Second Secondary Sort)

```
IEnumerable<Student> result = Student.GetAllStudents()
    .OrderBy(s => s.TotalMarks).ThenBy(s => s.Name).ThenBy(s => s.StudentID);
foreach (Student student in result)
{
    Console.WriteLine(student.TotalMarks + "\t" + student.Name + "\t" + student.StudentID);
}
```

## Output:

```
800  John  104
800  John  105
800  Pam   103
800  Tom   101
900  Mary   102
Press any key to continue...
```

4

PRAGIM Technologies | 9900113931 | [www.pragimtech.com](http://www.pragimtech.com) | [www.facebook.com/pragimtech](http://www.facebook.com/pragimtech)

<http://csharp-video-tutorials.blogspot.com>

# Ordering Operators

**Example 2:** Rewrite Example 1 using SQL like syntax. With SQL like syntax we do not use ThenBy or ThenByDescending, instead we specify the sort expressions using a comma separated list. The first sort expression will be used for primary sort and the subsequent sort expressions for secondary sort.

```
IEnumerable<Student> result = from student in Student.GetAllStudents()
                                orderby student.TotalMarks, student.Name, student.StudentID
                                select student;
foreach (Student student in result)
{
    Console.WriteLine(student.TotalMarks + "\t" + student.Name + "\t" + student.StudentID);
}
```

## Output:

```
800 John 104
800 John 105
800 Pam 103
800 Tom 101
900 Mary 102
```

Press any key to continue...

# Ordering Operators

Example 3: Reverses the items in the collection.

```
IEnumerable<Student> students = Student.GetAllStudents();

Console.WriteLine("Before calling Reverse");
foreach (Student s in students)
{
    Console.WriteLine(s.StudentID + "\t" + s.Name + "\t" + s.TotalMarks);
}

Console.WriteLine();
IEnumerable<Student> result = students.Reverse();

Console.WriteLine("After calling Reverse");
foreach (Student s in result)
{
    Console.WriteLine(s.StudentID + "\t" + s.Name + "\t" + s.TotalMarks);
}
```

```
Before Calling Reverse
101 Tom 800
102 Mary 900
103 Pam 800
104 John 800
105 John 800

After Calling Reverse
105 John 800
104 John 800
103 Pam 800
102 Mary 900
101 Tom 800

Press any key to continue...
```

# Additional Resources

## PRAGIM Home Page:

[www.PragimTech.com](http://www.PragimTech.com)

## Resources:

C#, ADO.NET, ASP.NET, SQL Server & MVC youtube Playlists

<http://www.youtube.com/user/kudvenkat/playlists>

Code samples and text version of all the videos on my blog

<http://www.csharp-video-tutorials.blogspot.com>

To receive email alerts when new videos are uploaded, please subscribe to my YOUTUBE channel

[www.YouTube.com/kudvenkat](http://www.YouTube.com/kudvenkat)

7

[Email This](#)

[BlogThis!](#)

[Share to Twitter](#)

[Share to Facebook](#)

[Share to Pinterest](#)

No comments:

Post a Comment

If you like this website, please share with your friends on facebook and Google+ and recommend us on google using the g+1 button on the top right hand corner.

Newer  
Post

Subscribe to: Post Comments (Atom)

Home

Older  
Post

Powered by [Blogger](#).

# Sql server, .net and c# video tutorial

Free C#, .Net and Sql server video tutorial for beginners and intermediate programmers.

[Support us](#) | [.Net Basics](#) | [C#](#) | [SQL](#) | [ASP.NET](#) | [ADO.NET](#) | [MVC](#) | [Slides](#) | [C# Programs](#) | [Subscribe](#) | [Buy DVD](#) |

Part 12 - Partitioning Operators in LINQ

**PRAGIM**

**TECHNOLOGIES**

Training + Placements

Best software training and placements in marathahalli, bangalore. For further details please call 09945699393.

Complete Tutorials Angular tutorial for beginners

Angular 5 Tutorial for beginners

Important Videos The Gift of Education

Web application for your business

How to become .NET developer

Resources available to help you

## LINQ Tutorial

### Part 12 - Partitioning Operators

Venkat

PRAGIM Technologies

[kudvenkat@gmail.com](mailto:kudvenkat@gmail.com)

<http://csharp-video-tutorials.blogspot.com>

PRAGIM Technologies | 9900113931 | [www.pragimtech.com](http://www.pragimtech.com) | [www.facebook.com/pragimtech](https://www.facebook.com/pragimtech)

1

ASP.NET Core What is ASP.NET  
Core | Text | Slides

Dot Net Video Tutorials Angular 6  
Tutorial

Angular CRUD Tutorial

Angular CLI Tutorial

Angular 2 Tutorial

Design Patterns

SOLID Principles

ASP.NET Web API

Bootstrap

AngularJS Tutorial

jQuery Tutorial

JavaScript with ASP.NET Tutorial

JavaScript Tutorial

Charts Tutorial

LINQ

LINQ to SQL

LINQ to XML

Entity Framework

WCF

# In this session we will learn

- Partitioning Operators in LINQ

## LINQ Tutorial

**Part 9 - Difference between Select and SelectMany**

**Part 10 - Ordering Operators in LINQ**

**Part 11 - Ordering Operators in LINQ - II**

**Link to Dot Net Basics, ASP.NET, C#, ADO.NET and SQL Server video series**

<http://www.youtube.com/user/kudvenkat/videos?view=1>

2

PRAGIM Technologies | 9900113931 | [www.pragimtech.com](http://www.pragimtech.com) | [www.facebook.com/pragimtech](http://www.facebook.com/pragimtech)

<http://csharp-video-tutorials.blogspot.com>

ASP.NET Web Services

Dot Net Basics

C#

SQL Server

ADO.NET

ASP.NET

GridView

ASP.NET MVC

Visual Studio Tips and Tricks

Dot Net Interview Questions

Slides Entity Framework

WCF

ASP.NET Web Services

Dot Net Basics

C#

SQL Server

ADO.NET

ASP.NET

GridView

ASP.NET MVC

# Partitioning Operators in LINQ

Dot Net & SQL Server Playlists

<http://www.youtube.com/user/kudvenkat/playlists>

## Partitioning Operators - (Take, Skip, TakeWhile, SkipWhile)

**Take** method returns a specified number of elements from the start of the collection.

The number of items to return is specified using the count parameter this method expects.

### Example 1: Retrieve only the first 3 countries of the array

```
string[] countries = { "Australia", "Canada", "Germany", "US", "India", "UK", "Italy" };

IEnumerable<string> result = countries.Take(3);

foreach (string country in result)
{
    Console.WriteLine(country);
}
```

### Output:

```
Australia
Canada
Germany
Press any key to continue...
```

PRAGIM Technologies | 9900113931 | [www.pragimtech.com](http://www.pragimtech.com) | [www.facebook.com/pragimtech](http://www.facebook.com/pragimtech)

<http://csharp-video-tutorials.blogspot.com>

Visual Studio Tips and Tricks

Java Video Tutorials Part 1 :  
Video | Text | Slides

Part 2 : [Video](#) | [Text](#) | [Slides](#)

Part 3 : [Video](#) | [Text](#) | [Slides](#)

Interview Questions C#

SQL Server

Written Test

# Partitioning Operators in LINQ

## Example 2: Rewrite Example 1 using SQL like syntax

```
string[] countries = { "Australia", "Canada", "Germany", "US", "India", "UK", "Italy" };

IQueryable<string> result = (from country in countries
                             select country).Take(3);

foreach (string country in result)
{
    Console.WriteLine(country);
}
```

### Output:

```
Australia
Canada
Germany
Press any key to continue...
```

4

PRAGIM Technologies | 9900113931 | [www.pragimtech.com](http://www.pragimtech.com) | [www.facebook.com/pragimtech](http://www.facebook.com/pragimtech)

<http://csharp-video-tutorials.blogspot.com>

# Partitioning Operators in LINQ

**Skip** method skips a specified number of elements in a collection and then returns the remaining elements. The number of items to skip is specified using the count parameter this method expects.

**Example 3:** Skip the first 3 countries and retrieve the rest of them

```
string[] countries = { "Australia", "Canada", "Germany", "US", "India", "UK", "Italy" };

IEnumerable<string> result = countries.Skip(3);

foreach (string country in result)
{
    Console.WriteLine(country);
}
```

**Output:**

```
US
India
UK
Italy
Press any key to continue...
```

**Please Note:** For the same argument value, the Skip method returns all of the items that the Take method would not return.

# Partitioning Operators in LINQ

**TakeWhile method** returns elements from a collection as long as the given condition specified by the predicate is true.

**Example 4:** Return countries starting from the beginning of the array until a country name is hit that does not have length greater than 2 characters.

```
string[] countries = { "Australia", "Canada", "Germany", "US", "India", "UK", "Italy" };

IEnumerable<string> result = countries.TakeWhile(s => s.Length > 2);

foreach (string country in result)
{
    Console.WriteLine(country);
}
```

**Output:**

```
Australia
Canada
Germany
Press any key to continue...
```

# Partitioning Operators in LINQ

**SkipWhile** method skips elements in a collection as long as the given condition specified by the predicate is true, and then returns the remaining elements.

**Example 5:** Skip elements starting from the beginning of the array, until a country name is hit that does not have length greater than 2 characters, and then return the remaining elements.

```
string[] countries = { "Australia", "Canada", "Germany", "US", "India", "UK", "Italy" };

IEnumerable<string> result = countries.SkipWhile(s => s.Length > 2);

foreach (string country in result)
{
    Console.WriteLine(country);
}
```

**Output:**

```
US
India
UK
Italy
```

Press any key to continue...

7

PRAGIM Technologies | 9900113931 | [www.pragimtech.com](http://www.pragimtech.com) | [www.facebook.com/pragimtech](http://www.facebook.com/pragimtech)

<http://csharp-video-tutorials.blogspot.com>

# Additional Resources

## PRAGIM Home Page:

[www.PragimTech.com](http://www.PragimTech.com)

## Resources:

C#, ADO.NET, ASP.NET, SQL Server & MVC youtube Playlists

<http://www.youtube.com/user/kudvenkat/playlists>

Code samples and text version of all the videos on my blog

<http://www.csharp-video-tutorials.blogspot.com>

To receive email alerts when new videos are uploaded, please subscribe to my YOUTUBE channel

[www.YouTube.com/kudvenkat](http://www.YouTube.com/kudvenkat)

8

[Email This](#)

[BlogThis!](#)

[Share to Twitter](#)

[Share to Facebook](#)

[Share to Pinterest](#)

No comments:

Post a Comment

If you like this website, please share with your friends on facebook and Google+ and recommend us on google using the g+1 button on the top right hand corner.

Newer  
Post

Subscribe to: Post Comments (Atom)

[Home](#)

Older  
Post

Powered by [Blogger](#).

# Sql server, .net and c# video tutorial

Free C#, .Net and Sql server video tutorial for beginners and intermediate programmers.

[Support us](#) | [.Net Basics](#) | [C#](#) | [SQL](#) | [ASP.NET](#) | [ADO.NET](#) | [MVC](#) | [Slides](#) | [C# Programs](#) | [Subscribe](#) | [Buy DVD](#) |

Part 13 - Implement paging using skip and take operators

**PRAGIM**

**TECHNOLOGIES**

Training + Placements

Best software training and placements in marathahalli, bangalore. For further details please call 09945699393.

Complete Tutorials Angular tutorial for beginners

Angular 5 Tutorial for beginners

Important Videos The Gift of Education

Web application for your business

How to become .NET developer

Resources available to help you

## LINQ Tutorial

### Part 13 - Implement Paging with LINQ

Venkat

PRAGIM Technologies

[kudvenkat@gmail.com](mailto:kudvenkat@gmail.com)

<http://csharp-video-tutorials.blogspot.com>

PRAGIM Technologies | 9900113931 | [www.pragimtech.com](http://www.pragimtech.com) | [www.facebook.com/pragimtech](https://www.facebook.com/pragimtech)

1

ASP.NET Core What is ASP.NET  
Core | Text | Slides

Dot Net Video Tutorials Angular 6  
Tutorial

Angular CRUD Tutorial

Angular CLI Tutorial

Angular 2 Tutorial

Design Patterns

SOLID Principles

ASP.NET Web API

Bootstrap

AngularJS Tutorial

jQuery Tutorial

JavaScript with ASP.NET Tutorial

JavaScript Tutorial

Charts Tutorial

LINQ

LINQ to SQL

LINQ to XML

Entity Framework

WCF

# In this session we will learn

- Implementing Paging using Skip and Take operators

## LINQ Tutorial

[Part 10 - Ordering Operators in LINQ](#)

[Part 11 - Ordering Operators in LINQ - II](#)

[Part 12 - Partitioning Operators](#)

**Link to Dot Net Basics, ASP.NET, C#, ADO.NET and SQL Server video series**

<http://www.youtube.com/user/kudvenkat/videos?view=1>

2

PRAGIM Technologies | 9900113931 | [www.pragimtech.com](http://www.pragimtech.com) | [www.facebook.com/pragimtech](http://www.facebook.com/pragimtech)

<http://csharp-video-tutorials.blogspot.com>

ASP.NET Web Services

Dot Net Basics

C#

SQL Server

ADO.NET

ASP.NET

GridView

ASP.NET MVC

Visual Studio Tips and Tricks

Dot Net Interview Questions

Slides Entity Framework

WCF

ASP.NET Web Services

Dot Net Basics

C#

SQL Server

ADO.NET

ASP.NET

GridView

ASP.NET MVC

# Implement Paging using Skip & Take

Dot Net & SQL Server Playlists

<http://www.youtube.com/user/kudvenkat/playlists>

Prompt the user to enter a page number. Once a valid page number is entered, the program should display the correct set of Students.

| StudentId | Name  | TotalMarks |
|-----------|-------|------------|
| 101       | Tom   | 800        |
| 102       | Mary  | 900        |
| 103       | Pam   | 800        |
| 104       | John  | 800        |
| 105       | John  | 800        |
| 106       | Brian | 700        |
| 107       | Jade  | 750        |
| 108       | Ron   | 850        |
| 109       | Rob   | 950        |
| 110       | Alex  | 750        |
| 111       | Susan | 860        |

```
Please enter Page Number -1,2,3 or 4  
1  
  
Displaying Page 1  
101 Tom 800  
102 Mary 900  
103 Pam 800  
  
Please enter Page Number -1,2,3 or 4  
10  
Page number must be an integer between 1 and 4  
Please enter Page Number -1,2,3 or 4  
3  
  
Displaying Page 3  
107 Jade 750  
108 Ron 850  
109 Rob 950  
  
Please enter Page Number -1,2,3 or 4
```

3

PRAGIM Technologies | 9900113931 | [www.pragimtech.com](http://www.pragimtech.com) | [www.facebook.com/pragimtech](http://www.facebook.com/pragimtech)

<http://csharp-video-tutorials.blogspot.com>

Visual Studio Tips and Tricks

Java Video Tutorials Part 1 :  
Video | Text | Slides

Part 2 : [Video](#) | [Text](#) | [Slides](#)

Part 3 : [Video](#) | [Text](#) | [Slides](#)

Interview Questions C#

SQL Server

Written Test

# Additional Resources

## PRAGIM Home Page:

[www.PragimTech.com](http://www.PragimTech.com)

## Resources:

C#, ADO.NET, ASP.NET, SQL Server & MVC youtube Playlists

<http://www.youtube.com/user/kudvenkat/playlists>

Code samples and text version of all the videos on my blog

<http://www.csharp-video-tutorials.blogspot.com>

To receive email alerts when new videos are uploaded, please subscribe to my YOUTUBE channel

[www.YouTube.com/kudvenkat](http://www.YouTube.com/kudvenkat)

4

[Email This](#)

[BlogThis!](#)

[Share to Twitter](#)

[Share to Facebook](#)

[Share to Pinterest](#)

No comments:

Post a Comment

If you like this website, please share with your friends on facebook and Google+ and recommend us on google using the g+1 button on the top right hand corner.

Newer  
Post

Subscribe to: Post Comments (Atom)

Home

Older  
Post

Powered by [Blogger](#).

# Sql server, .net and c# video tutorial

Free C#, .Net and Sql server video tutorial for beginners and intermediate programmers.

[Support us](#) | [.Net Basics](#) | [C#](#) | [SQL](#) | [ASP.NET](#) | [ADO.NET](#) | [MVC](#) | [Slides](#) | [C# Programs](#) | [Subscribe](#) | [Buy DVD](#) |

Part 14 - LINQ query deferred execution

**PRAGIM**

**TECHNOLOGIES**

Training + Placements

Best software training and placements in marathahalli, bangalore. For further details please call 09945699393.

Complete Tutorials Angular tutorial for beginners

Angular 5 Tutorial for beginners

Important Videos The Gift of Education

Web application for your business

How to become .NET developer

Resources available to help you

## LINQ Tutorial

### Part 14 - LINQ Query Deferred Execution

Venkat

PRAGIM Technologies

[kudvenkat@gmail.com](mailto:kudvenkat@gmail.com)

<http://csharp-video-tutorials.blogspot.com>

PRAGIM Technologies | 9900113931 | [www.pragimtech.com](http://www.pragimtech.com) | [www.facebook.com/pragimtech](https://www.facebook.com/pragimtech)

1

ASP.NET Core What is ASP.NET  
Core | Text | Slides

Dot Net Video Tutorials Angular 6  
Tutorial

Angular CRUD Tutorial

Angular CLI Tutorial

Angular 2 Tutorial

Design Patterns

SOLID Principles

ASP.NET Web API

Bootstrap

AngularJS Tutorial

jQuery Tutorial

JavaScript with ASP.NET Tutorial

JavaScript Tutorial

Charts Tutorial

LINQ

LINQ to SQL

LINQ to XML

Entity Framework

WCF

# In this session we will learn

- Deferred execution
- Immediate execution

## LINQ Tutorial

**Part 11 - Ordering Operators in LINQ – II**

**Part 12 - Partitioning Operators**

**Part 13 - Implement paging using skip and take operators**

**Link to Dot Net Basics, ASP.NET, C#, ADO.NET and SQL Server video series**

<http://www.youtube.com/user/kudvenkat/videos?view=1>

2

PRAGIM Technologies | 9900113931 | [www.pragimtech.com](http://www.pragimtech.com) | [www.facebook.com/pragimtech](http://www.facebook.com/pragimtech)

<http://csharp-video-tutorials.blogspot.com>

ASP.NET Web Services

Dot Net Basics

C#

SQL Server

ADO.NET

ASP.NET

GridView

ASP.NET MVC

Visual Studio Tips and Tricks

Dot Net Interview Questions

Slides Entity Framework

WCF

ASP.NET Web Services

Dot Net Basics

C#

SQL Server

ADO.NET

ASP.NET

GridView

ASP.NET MVC

# LINQ Query Deferred Execution

Dot Net & SQL Server Playlists

<http://www.youtube.com/user/kudvenkat/playlists>

**LINQ operators categories based on execution behaviour**

**1. Deferred or Lazy Operators** - These query operators use deferred execution.

Examples- select, where, Take, Skip etc

**2. Immediate or Greedy Operators** - These query operators use immediate execution.

Examples- count, average, min, max, ToList etc

3

PRAGIM Technologies | 9900113931 | [www.pragimtech.com](http://www.pragimtech.com) | [www.facebook.com/pragimtech](http://www.facebook.com/pragimtech)

<http://csharp-video-tutorials.blogspot.com>

Visual Studio Tips and Tricks

Java Video Tutorials Part 1 :

Video | Text | Slides

Part 2 : [Video](#) | [Text](#) | [Slides](#)

Part 3 : [Video](#) | [Text](#) | [Slides](#)

Interview Questions C#

SQL Server

Written Test

# LINQ Query Deferred Execution Example

```
List<Student> listStudents = new List<Student>
{
    new Student { StudentID= 101, Name = "Tom", TotalMarks = 800 },
    new Student { StudentID= 102, Name = "Mary", TotalMarks = 900 },
    new Student { StudentID= 103, Name = "Pam", TotalMarks = 800 }
};

// LINQ Query is only defined here and is not executed at this point
IEnumerable<Student> result = from student in listStudents
                                where student.TotalMarks == 800
                                select student;

// Add a new student object with TotalMarks = 800 to the source
listStudents.Add(new Student { StudentID = 104, Name = "Tim", TotalMarks = 800 });

// The above query is actually executed when we iterate thru the sequence
foreach (Student s in result)
{
    Console.WriteLine(s.StudentID + "\t" + s.Name + "\t" + s.TotalMarks);
}
```

```
101  Tom  800
103  Pam  800
104  Tim  800
Press any key to continue...
```

# LINQ Query Immediate Execution Example

```
List<Student> listStudents = new List<Student>
{
    new Student { StudentID= 101, Name = "Tom", TotalMarks = 800 },
    new Student { StudentID= 102, Name = "Mary", TotalMarks = 900 },
    new Student { StudentID= 103, Name = "Pam", TotalMarks = 800 }
};

// Since we are using ToList() which is a greedy operator
// the LINQ Query is executed immediately at this point
IEnumerable<Student> result = (from student in listStudents
                                 where student.TotalMarks == 800
                                 select student).ToList();

listStudents.Add(new Student { StudentID = 104, Name = "Tim", TotalMarks = 800 });

// The above query is executed at the point where it is defined.
// This is proved as Tim is not included in the result
foreach (Student s in result)
{
    Console.WriteLine(s.StudentID + "\t" + s.Name + "\t" + s.TotalMarks);
}
```

```
101  Tom  800
103  Pam  800
Press any key to continue...
```

# LINQ Query Immediate Execution Example

```
List<Student> listStudents = new List<Student>
{
    new Student { StudentID= 101, Name = "Tom", TotalMarks = 800 },
    new Student { StudentID= 102, Name = "Mary", TotalMarks = 900 },
    new Student { StudentID= 103, Name = "Pam", TotalMarks = 800 }
};

// Since we are using Count() operator, the LINQ Query is executed at this point
int result = (from student in listStudents
              where student.TotalMarks == 800
              select student).Count();

// Adding a new student object with TotalMarks = 800 to the source
// will have no effect on the result as the query is already executed
listStudents.Add(new Student { StudentID = 104, Name = "Tim", TotalMarks = 800 });

// The above query is executed at the point where it is defined.
// This is proved as Tim is not included in the count
Console.WriteLine("Students with Total Marks = 800 : " + result);
```

Students with Total Marks = 800 :2  
Press any key to continue...

# Additional Resources

## PRAGIM Home Page:

[www.PragimTech.com](http://www.PragimTech.com)

## Resources:

C#, ADO.NET, ASP.NET, SQL Server & MVC youtube Playlists

<http://www.youtube.com/user/kudvenkat/playlists>

Code samples and text version of all the videos on my blog

<http://www.csharp-video-tutorials.blogspot.com>

To receive email alerts when new videos are uploaded, please subscribe to my YOUTUBE channel

[www.YouTube.com/kudvenkat](http://www.YouTube.com/kudvenkat)

7

[Email This](#)

[BlogThis!](#)

[Share to Twitter](#)

[Share to Facebook](#)

[Share to Pinterest](#)

No comments:

Post a Comment

If you like this website, please share with your friends on facebook and Google+ and recommend us on google using the g+1 button on the top right hand corner.

Newer  
Post

Subscribe to: Post Comments (Atom)

Home

Older  
Post

Powered by [Blogger](#).

# Sql server, .net and c# video tutorial

Free C#, .Net and Sql server video tutorial for beginners and intermediate programmers.

[Support us](#) | [.Net Basics](#) | [C#](#) | [SQL](#) | [ASP.NET](#) | [ADO.NET](#) | [MVC](#) | [Slides](#) | [C# Programs](#) | [Subscribe](#) | [Buy DVD](#) |

Part 15 - Conversion Operators in LINQ

**PRAGIM**

**TECHNOLOGIES**

Training + Placements

Best software training and placements in marathahalli, bangalore. For further details please call 09945699393.

Complete Tutorials Angular tutorial for beginners

Angular 5 Tutorial for beginners

Important Videos The Gift of Education

Web application for your business

How to become .NET developer

Resources available to help you

## LINQ Tutorial

### Part 15 - Conversion Operators

Venkat

PRAGIM Technologies

[kudvenkat@gmail.com](mailto:kudvenkat@gmail.com)

<http://csharp-video-tutorials.blogspot.com>

PRAGIM Technologies | 9900113931 | [www.pragimtech.com](http://www.pragimtech.com) | [www.facebook.com/pragimtech](https://www.facebook.com/pragimtech)

1

ASP.NET Core What is ASP.NET  
Core | Text | Slides

Dot Net Video Tutorials Angular 6  
Tutorial

Angular CRUD Tutorial

Angular CLI Tutorial

Angular 2 Tutorial

Design Patterns

SOLID Principles

ASP.NET Web API

Bootstrap

AngularJS Tutorial

jQuery Tutorial

JavaScript with ASP.NET Tutorial

JavaScript Tutorial

Charts Tutorial

LINQ

LINQ to SQL

LINQ to XML

Entity Framework

WCF

# In this session we will learn

- Conversion Operators in LINQ

## LINQ Tutorial

Part 12 - Partitioning Operators

Part 13 - Implement paging using skip and take operators

Part 14 - LINQ Query Deferred Execution

Link to Dot Net Basics, ASP.NET, C#, ADO.NET and SQL Server video series

<http://www.youtube.com/user/kudvenkat/videos?view=1>

2

PRAGIM Technologies | 9900113931 | [www.pragimtech.com](http://www.pragimtech.com) | [www.facebook.com/pragimtech](http://www.facebook.com/pragimtech)

<http://csharp-video-tutorials.blogspot.com>

ASP.NET Web Services

Dot Net Basics

C#

SQL Server

ADO.NET

ASP.NET

GridView

ASP.NET MVC

Visual Studio Tips and Tricks

Dot Net Interview Questions

Slides Entity Framework

WCF

ASP.NET Web Services

Dot Net Basics

C#

SQL Server

ADO.NET

ASP.NET

GridView

ASP.NET MVC

# Conversion Operators in LINQ

Dot Net & SQL Server Playlists

<http://www.youtube.com/user/kudvenkat/playlists>

## Conversion Operators

|              |              |
|--------------|--------------|
| ToList       | Cast         |
| ToDictionary | OfType       |
| ToLookup     | AsEnumerable |
| ToDictionary | AsQueryable  |

**ToList operator extracts all of the items from the source sequence and returns a new `List<T>`. This operator causes the query to be executed immediately. This operator does not use deferred execution.**

```
int[] numbers = { 1, 2, 3, 4, 5 };

List<int> result = numbers.ToList();

foreach (int i in result)
{
    Console.WriteLine(i);
}
```

### Output:

```
1
2
3
4
5
Press any key to continue...
```

3

PRAGIM Technologies | 9900113931 | [www.pragimtech.com](http://www.pragimtech.com) | [www.facebook.com/pragimtech](http://www.facebook.com/pragimtech)

<http://csharp-video-tutorials.blogspot.com>

Visual Studio Tips and Tricks

Java Video Tutorials Part 1 :  
Video | Text | Slides

Part 2 : [Video](#) | [Text](#) | [Slides](#)

Part 3 : [Video](#) | [Text](#) | [Slides](#)

Interview Questions C#

SQL Server

Written Test

# Conversion Operators in LINQ

**ToArray operator extracts all of the items from the source sequence and returns a new Array. This operator causes the query to be executed immediately. This operator does not use deferred execution.**

**Example:** Convert List<string> to string array. The items in the array should be sorted in ascending order

```
List<string> countries = new List<string> { "US", "India", "UK", "Australia", "Canada" };

string[] result = (from country in countries
                   orderby country ascending
                   select country).ToArray();

foreach (string str in result)
{
    Console.WriteLine(str);
}
```

```
Australia
Canada
India
UK
US
Press any key to continue...
```

4

PRAGIM Technologies | 9900113931 | [www.pragimtech.com](http://www.pragimtech.com) | [www.facebook.com/pragimtech](http://www.facebook.com/pragimtech)

<http://csharp-video-tutorials.blogspot.com>

# Conversion Operators in LINQ

ToDictionary operator extracts all of the items from the source sequence and returns a new Dictionary. This operator causes the query to be executed immediately. This operator does not use deferred execution.

**Example :** Convert List<Student> to a Dictionary. StudentID should be the key and Name should be the value. In this example, we are using the overloaded of ToDictionary() that takes 2 parameters

- a) keySelector - A function to extract a key from each element
- b) elementSelector - A function to produce a result element from each element in the sequence

```
List<Student> listStudents = new List<Student>
{
    new Student { StudentID= 101, Name = "Tom", TotalMarks = 800 },
    new Student { StudentID= 102, Name = "Mary", TotalMarks = 900 },
    new Student { StudentID= 103, Name = "Pam", TotalMarks = 800 } };

Dictionary<int, string> result = listStudents.ToDictionary(x => x.StudentID, x => x.Name);

foreach (KeyValuePair<int, string> kvp in result)
{
    Console.WriteLine(kvp.Key + " " + kvp.Value);
}
```

# Conversion Operators in LINQ

**Example:** Convert List<Student> to a Dictionary. StudentID should be the key and Student object should be the value. In this example, we are using the overloaded of ToDictionary() that takes 1 parameter

a) **keySelector - A function to extract a key from each element**

```
List<Student> listStudents = new List<Student>
{
    new Student { StudentID= 101, Name = "Tom", TotalMarks = 800 },
    new Student { StudentID= 102, Name = "Mary", TotalMarks = 900 },
    new Student { StudentID= 103, Name = "Pam", TotalMarks = 800 }
};

Dictionary<int, Student> result = listStudents.ToDictionary(x => x.StudentID);

foreach (KeyValuePair<int, Student> kvp in result)
{
    Console.WriteLine(kvp.Key + "\t" + kvp.Value.Name + "\t" + kvp.Value.TotalMarks);
}
```

**Please Note:** Keys in the dictionary must be unique. If two identical keys are created by the keySelector function, the following System.ArgumentException will be thrown at runtime.

Unhandled Exception: System.ArgumentException:

An item with the same key has already been added.

# Conversion Operators in LINQ

ToLookup creates a Lookup. Just like a dictionary, a Lookup is a collection of key/value pairs. A dictionary cannot contain keys with identical values, whereas a Lookup can.

**Example:** Create a Lookup in which Employees are grouped by JobTitle

```
// Group employees by JobTitle
var employeesByJobTitle = listEmployees.ToLookup(x => x.JobTitle);

Console.WriteLine("Employees Grouped By JobTitle");
foreach (var kvp in employeesByJobTitle)
{
    Console.WriteLine(kvp.Key);
    foreach (var item in employeesByJobTitle[kvp.Key])
    {
        Console.WriteLine("\t" + item.Name + "\t" + item.JobTitle + "\t" + item.City);
    }
}
```

```
Employees Grouped By JobTitle
Developer
    Ben  Developer  London
    Steve  Developer  Bangalore
    Sara  Developer  London
    Pam  Developer  London

Sr. Developer
    John  Sr. Developer  Bangalore
    Stuart  Sr. Developer  London
```

# Additional Resources

## PRAGIM Home Page:

[www.PragimTech.com](http://www.PragimTech.com)

## Resources:

C#, ADO.NET, ASP.NET, SQL Server & MVC youtube Playlists

<http://www.youtube.com/user/kudvenkat/playlists>

Code samples and text version of all the videos on my blog

<http://www.csharp-video-tutorials.blogspot.com>

To receive email alerts when new videos are uploaded, please subscribe to my YOUTUBE channel

[www.YouTube.com/kudvenkat](http://www.YouTube.com/kudvenkat)

8

[Email This](#)

[BlogThis!](#)

[Share to Twitter](#)

[Share to Facebook](#)

[Share to Pinterest](#)

No comments:

Post a Comment

If you like this website, please share with your friends on facebook and Google+ and recommend us on google using the g+1 button on the top right hand corner.

Newer  
Post

Subscribe to: Post Comments (Atom)

[Home](#)

Older  
Post

Powered by [Blogger](#).

# Sql server, .net and c# video tutorial

Free C#, .Net and Sql server video tutorial for beginners and intermediate programmers.

[Support us](#) | [.Net Basics](#) | [C#](#) | [SQL](#) | [ASP.NET](#) | [ADO.NET](#) | [MVC](#) | [Slides](#) | [C# Programs](#) | [Subscribe](#) | [Buy DVD](#) |

Part 16 - Cast and OfType operators in LINQ

**PRAGIM**

**TECHNOLOGIES**

Training + Placements

Best software training and placements in marathahalli, bangalore. For further details please call 09945699393.

Complete Tutorials Angular tutorial for beginners

Angular 5 Tutorial for beginners

Important Videos The Gift of Education

Web application for your business

How to become .NET developer

Resources available to help you

## LINQ Tutorial

### Part 16 - Cast & OfType Operators

Venkat

PRAGIM Technologies

[kudvenkat@gmail.com](mailto:kudvenkat@gmail.com)

<http://csharp-video-tutorials.blogspot.com>

PRAGIM Technologies | 9900113931 | [www.pragimtech.com](http://www.pragimtech.com) | [www.facebook.com/pragimtech](https://www.facebook.com/pragimtech)

1

ASP.NET Core What is ASP.NET  
Core | Text | Slides

Dot Net Video Tutorials Angular 6  
Tutorial

Angular CRUD Tutorial

Angular CLI Tutorial

Angular 2 Tutorial

Design Patterns

SOLID Principles

ASP.NET Web API

Bootstrap

AngularJS Tutorial

jQuery Tutorial

JavaScript with ASP.NET Tutorial

JavaScript Tutorial

Charts Tutorial

LINQ

LINQ to SQL

LINQ to XML

Entity Framework

WCF

# In this session we will learn

- Cast and OfType operators
- Difference between Cast and OfType operators
- When to use one over the other

## LINQ Tutorial

**Part 13 - Implement paging using skip and take operators**

**Part 14 - LINQ Query Deferred Execution**

**Part 15 - Conversion Operators**

**Link to Dot Net Basics, ASP.NET, C#, ADO.NET and SQL Server video series**

<http://www.youtube.com/user/kudvenkat/videos?view=1>

2

PRAGIM Technologies | 9900113931 | [www.pragimtech.com](http://www.pragimtech.com) | [www.facebook.com/pragimtech](http://www.facebook.com/pragimtech)

<http://csharp-video-tutorials.blogspot.com>

ASP.NET Web Services

Dot Net Basics

C#

SQL Server

ADO.NET

ASP.NET

GridView

ASP.NET MVC

Visual Studio Tips and Tricks

Dot Net Interview Questions

Slides Entity Framework

WCF

ASP.NET Web Services

Dot Net Basics

C#

SQL Server

ADO.NET

ASP.NET

GridView

ASP.NET MVC

# Cast and OfType Operators in LINQ

Dot Net & SQL Server Playlists

<http://www.youtube.com/user/kudvenkat/playlists>

## Conversion Operators

|              |              |
|--------------|--------------|
| ToList       | Cast         |
| ToArrayList  | OfType       |
| ToDictionary | AsEnumerable |
| ToLookup     | AsQueryable  |

**Cast operator** attempts to convert all of the items within an existing collection to another type and return them in a new collection. If an item fails conversion an exception will be thrown. This method uses deferred execution.

```
ArrayList list = new ArrayList();
list.Add(1); list.Add(2); list.Add(3);

// The following item causes an exception
// list.Add("ABC");

IEnumerable<int> result = list.Cast<int>();

foreach (int i in result)
{
    Console.WriteLine(i);
}
```

1  
2  
3  
Press any key to continue ...

3

PRAGIM Technologies | 9900113931 | [www.pragimtech.com](http://www.pragimtech.com) | [www.facebook.com/pragimtech](http://www.facebook.com/pragimtech)

<http://csharp-video-tutorials.blogspot.com>

Visual Studio Tips and Tricks

Java Video Tutorials Part 1 :  
[Video](#) | [Text](#) | [Slides](#)

Part 2 : [Video](#) | [Text](#) | [Slides](#)

Part 3 : [Video](#) | [Text](#) | [Slides](#)

Interview Questions C#

SQL Server

Written Test

# Cast and OfType Operators in LINQ

**OfType operator will return only elements of the specified type. The other type elements are simply ignored and excluded from the result set.**

**Example : In the example below, items "4" and "ABC" will be ignored from the result set. No exception will be thrown.**

```
ArrayList list = new ArrayList();
list.Add(1);
list.Add(2);
list.Add(3);
list.Add("4");
list.Add("ABC");

IEnumerable<int> result = list.OfType<int>();

foreach (int i in result)
{
    Console.WriteLine(i);
}
```

1  
2  
3  
Press any key to continue ...

# Cast and OfType Operators in LINQ

## What is the difference between Cast and OfType operators

OfType operator returns only the elements of the specified type and the rest of the items in the collection will be ignored and excluded from the result.

Cast operator will try to cast all the elements in the collection into the specified type. If some of the items fail conversion, InvalidCastException will be thrown.

## When to use Cast over OfType and vice versa?

We would generally use Cast when the following 2 conditions are met

1. We want to cast all the items in the collection &
2. We know for sure the collection contains only elements of the specified type

If we want to filter the elements and return only the ones of the specified type, then we would use OfType.

# Additional Resources

## PRAGIM Home Page:

[www.PragimTech.com](http://www.PragimTech.com)

## Resources:

C#, ADO.NET, ASP.NET, SQL Server & MVC youtube Playlists

<http://www.youtube.com/user/kudvenkat/playlists>

Code samples and text version of all the videos on my blog

<http://www.csharp-video-tutorials.blogspot.com>

To receive email alerts when new videos are uploaded, please subscribe to my YOUTUBE channel

[www.YouTube.com/kudvenkat](http://www.YouTube.com/kudvenkat)

6

[Email This](#)

[BlogThis!](#)

[Share to Twitter](#)

[Share to Facebook](#)

[Share to Pinterest](#)

No comments:

Post a Comment

If you like this website, please share with your friends on facebook and Google+ and recommend us on google using the g+1 button on the top right hand corner.

Newer  
Post

Subscribe to: Post Comments (Atom)

[Home](#)

Older  
Post

Powered by [Blogger](#).

# Sql server, .net and c# video tutorial

Free C#, .Net and Sql server video tutorial for beginners and intermediate programmers.

[Support us](#) | [.Net Basics](#) | [C#](#) | [SQL](#) | [ASP.NET](#) | [ADO.NET](#) | [MVC](#) | [Slides](#) | [C# Programs](#) | [Subscribe](#) | [Buy DVD](#) |

Part 17 - AsEnumerable and AsQueryable in LINQ

**PRAGIM**

**TECHNOLOGIES**

Training + Placements

Best software training and placements in marathahalli, bangalore. For further details please call 09945699393.

Complete Tutorials Angular tutorial for beginners

Angular 5 Tutorial for beginners

Important Videos The Gift of Education

Web application for your business

How to become .NET developer

Resources available to help you

## LINQ Tutorial

### Part 17 - AsEnumerable & AsQueryable

Venkat

PRAGIM Technologies

[kudvenkat@gmail.com](mailto:kudvenkat@gmail.com)

<http://csharp-video-tutorials.blogspot.com>

PRAGIM Technologies | 9900113931 | [www.pragimtech.com](http://www.pragimtech.com) | [www.facebook.com/pragimtech](https://www.facebook.com/pragimtech)

1

ASP.NET Core What is ASP.NET  
Core | Text | Slides

Dot Net Video Tutorials Angular 6  
Tutorial

Angular CRUD Tutorial

Angular CLI Tutorial

Angular 2 Tutorial

Design Patterns

SOLID Principles

ASP.NET Web API

Bootstrap

AngularJS Tutorial

jQuery Tutorial

JavaScript with ASP.NET Tutorial

JavaScript Tutorial

Charts Tutorial

LINQ

LINQ to SQL

LINQ to XML

Entity Framework

WCF

# In this session we will learn

- What is the use of AsEnumerable and AsQueryable operators

## LINQ Tutorial

**Part 14 - LINQ Query Deferred Execution**

**Part 15 - Conversion Operators in LINQ**

**Part 16 - Cast and OfType operators in LINQ**

**Link to Dot Net Basics, ASP.NET, C#, ADO.NET and SQL Server video series**

<http://www.youtube.com/user/kudvenkat/videos?view=1>

2

PRAGIM Technologies | 9900113931 | [www.pragimtech.com](http://www.pragimtech.com) | [www.facebook.com/pragimtech](http://www.facebook.com/pragimtech)

<http://csharp-video-tutorials.blogspot.com>

ASP.NET Web Services

Dot Net Basics

C#

SQL Server

ADO.NET

ASP.NET

GridView

ASP.NET MVC

Visual Studio Tips and Tricks

Dot Net Interview Questions

Slides Entity Framework

WCF

ASP.NET Web Services

Dot Net Basics

C#

SQL Server

ADO.NET

ASP.NET

GridView

ASP.NET MVC

# AsEnumerable & AsQueryable Operators

Dot Net & SQL Server Playlists

<http://www.youtube.com/user/kudvenkat/playlists>

Both of these operators belong to Conversion Operators category

**AsQueryable operator :** There are 2 overloaded versions of this method

One overloaded version converts

`System.Collections.IEnumerable` to `System.Linq.IQueryable`

The other overloaded version converts a generic

`System.Collections.Generic.IEnumerable<T>` to a generic

`System.Linq.IQueryable<T>`

The main use of AsQueryable operator is in unit testing to mock a queryable data source using an in-memory data source.

We will discuss this operator in detail with examples in unit testing video tutorial.

3

PRAGIM Technologies | 9900113931 | [www.pragimtech.com](http://www.pragimtech.com) | [www.facebook.com/pragimtech](http://www.facebook.com/pragimtech)

<http://csharp-video-tutorials.blogspot.com>

Visual Studio Tips and Tricks

Java Video Tutorials Part 1 :

Video | Text | Slides

Part 2 : [Video](#) | [Text](#) | [Slides](#)

Part 3 : [Video](#) | [Text](#) | [Slides](#)

Interview Questions C#

SQL Server

Written Test

# AsEnumerable & AsQueryable Operators

| ID | Name    | Gender | Salary |
|----|---------|--------|--------|
| 1  | Mark    | Male   | 60000  |
| 2  | Steve   | Male   | 45000  |
| 3  | Ben     | Male   | 70000  |
| 4  | Philip  | Male   | 45000  |
| 5  | Mary    | Female | 30000  |
| 6  | Valarie | Female | 35000  |
| 7  | John    | Male   | 80000  |
| 8  | Pam     | Female | 85000  |
| 9  | Stacey  | Female | 65000  |
| 10 | Andy    | Male   | 73000  |
| 11 | Edward  | Male   | 65000  |

```
// Without AsEnumerable()
var result = dbContext.Employees.Where(x => x.Gender == "Male")
    .OrderByDescending(x => x.Salary).Take(5);
```

```
-- Generated SQL Query
exec sp_executesql N'SELECT TOP (5) [t0].[ID], [t0].[Name],
[t0].[Gender], [t0].[Salary]
FROM [dbo].[Employees] AS [t0]
WHERE [t0].[Gender] = @p0
ORDER BY [t0].[Salary] DESC',N'@p0 nvarchar(4000)',@p0=N'Male'
```

```
// With AsEnumerable()
var result = dbContext.Employees.AsEnumerable().Where(x => x.Gender == "Male")
    .OrderByDescending(x => x.Salary).Take(5);
```

```
-- Generated SQL Query
SELECT [t0].[ID], [t0].[Name], [t0].[Gender], [t0].[Salary]
FROM [dbo].[Employees] AS [t0]
```

## AsEnumerable operator breaks the query into 2 parts

1. The **INSIDE PART** (query before AsEnumerable) is executed as **Linq-to-SQL**
2. The **OUTSIDE PART** (query after AsEnumerable) is executed as **Linq-to-Objects**

# AsEnumerable & AsQueryable Operators

So in this example the following **SQL Query** is executed against SQL Server, all the data is brought into the console application and then the **WHERE, ORDERBY & TOP operators** are applied on the client-side

```
SELECT [t0].[ID], [t0].[Name], [t0].[Gender], [t0].[Salary]
FROM [dbo].[Employees] AS [t0]
```

So in short, use **AsEnumerable** operator to move query processing to the clientside.

# Additional Resources

## PRAGIM Home Page:

[www.PragimTech.com](http://www.PragimTech.com)

## Resources:

C#, ADO.NET, ASP.NET, SQL Server & MVC youtube Playlists

<http://www.youtube.com/user/kudvenkat/playlists>

Code samples and text version of all the videos on my blog

<http://www.csharp-video-tutorials.blogspot.com>

To receive email alerts when new videos are uploaded, please subscribe to my YOUTUBE channel

[www.YouTube.com/kudvenkat](http://www.YouTube.com/kudvenkat)

6

[Email This](#)

[BlogThis!](#)

[Share to Twitter](#)

[Share to Facebook](#)

[Share to Pinterest](#)

No comments:

Post a Comment

If you like this website, please share with your friends on facebook and Google+ and recommend us on google using the g+1 button on the top right hand corner.

Newer  
Post

Subscribe to: Post Comments (Atom)

Home

Older  
Post

Powered by [Blogger](#).

# Sql server, .net and c# video tutorial

Free C#, .Net and Sql server video tutorial for beginners and intermediate programmers.

[Support us](#) | [.Net Basics](#) | [C#](#) | [SQL](#) | [ASP.NET](#) | [ADO.NET](#) | [MVC](#) | [Slides](#) | [C# Programs](#) | [Subscribe](#) | [Buy DVD](#) |

Part 18 - GroupBy in LINQ

**PRAGIM**  
**TECHNOLOGIES**  
Training + Placements

Best software training and placements in marathahalli, bangalore. For further details please call 09945699393.

Complete Tutorials Angular tutorial for beginners

Angular 5 Tutorial for beginners

Important Videos The Gift of Education

Web application for your business

How to become .NET developer

Resources available to help you

# LINQ Tutorial

## Part 18 - GroupBy in LINQ

Venkat

PRAGIM Technologies

[kudvenkat@gmail.com](mailto:kudvenkat@gmail.com)

<http://csharp-video-tutorials.blogspot.com>

PRAGIM Technologies | 9900113931 | [www.pragimtech.com](http://www.pragimtech.com) | [www.facebook.com/pragimtech](https://www.facebook.com/pragimtech)

1

ASP.NET Core What is ASP.NET  
Core | Text | Slides

Dot Net Video Tutorials Angular 6  
Tutorial

Angular CRUD Tutorial

Angular CLI Tutorial

Angular 2 Tutorial

Design Patterns

SOLID Principles

ASP.NET Web API

Bootstrap

AngularJS Tutorial

jQuery Tutorial

JavaScript with ASP.NET Tutorial

JavaScript Tutorial

Charts Tutorial

LINQ

LINQ to SQL

LINQ to XML

Entity Framework

WCF

# In this session we will learn

- GroupBy in LINQ

## LINQ Tutorial

**Part 15 - Conversion Operators in LINQ**

**Part 16 - Cast and OfType operators in LINQ**

**Part 17 - AsEnumerable and AsQueryable in LINQ**

**Link to Dot Net Basics, ASP.NET, C#, ADO.NET and SQL Server video series**

<http://www.youtube.com/user/kudvenkat/videos?view=1>

2

PRAGIM Technologies | 9900113931 | [www.pragimtech.com](http://www.pragimtech.com) | [www.facebook.com/pragimtech](http://www.facebook.com/pragimtech)

<http://csharp-video-tutorials.blogspot.com>

ASP.NET Web Services

Dot Net Basics

C#

SQL Server

ADO.NET

ASP.NET

GridView

ASP.NET MVC

Visual Studio Tips and Tricks

Dot Net Interview Questions

Slides Entity Framework

WCF

ASP.NET Web Services

Dot Net Basics

C#

SQL Server

ADO.NET

ASP.NET

GridView

ASP.NET MVC

# GroupBy in LINQ

## Dot Net & SQL Server Playlists

<http://www.youtube.com/user/kudvenkat/playlists>

**GroupBy operator belong to Grouping Operators category.** This operator takes a flat sequence of items, organize that sequence into groups (**IGrouping<K,V>**) based on a specific key and return groups of sequences.

In short, GroupBy creates and returns a sequence of IGrouping<K,V>

### Example 1: Get Employee Count By Department

```
var employeeGroup = from employee in Employee.GetAllEmployees()
                     group employee by employee.Department;

foreach (var group in employeeGroup)
{
    Console.WriteLine("{0} - {1}", group.Key, group.Count());
}
```

#### Output:

|    |   |   |
|----|---|---|
| IT | - | 6 |
| HR | - | 4 |

PRAGIM Technologies | 9900113931 | [www.pragimtech.com](http://www.pragimtech.com) | [www.facebook.com/pragimtech](http://www.facebook.com/pragimtech)

<http://csharp-video-tutorials.blogspot.com>

3

Visual Studio Tips and Tricks

Java Video Tutorials Part 1 :  
Video | Text | Slides

Part 2 : Video | Text | Slides

Part 3 : Video | Text | Slides

Interview Questions C#

SQL Server

Written Test

# GroupBy in LINQ

**Example 2: Get Employee Count By Department and also each employee and department name**

```
var employeeGroup = from employee in Employee.GetAllEmployees()
                     group employee by employee.Department;

foreach (var group in employeeGroup)
{
    Console.WriteLine("{0} - {1}", group.Key, group.Count());
    Console.WriteLine("-----");
    foreach (var employee in group)
    {
        Console.WriteLine(employee.Name + "\t" + employee.Department);
    }
    Console.WriteLine(); Console.WriteLine();
}
```

|            |
|------------|
| IT - 6     |
| -----      |
| Mark IT    |
| Ben IT     |
| Philip IT  |
| John IT    |
| Pam IT     |
| Andy IT    |
| HR - 4     |
| -----      |
| Steve HR   |
| Mary HR    |
| Ualarie HR |
| Stacey HR  |

# GroupBy in LINQ

**Example 3:** Get Employee Count By Department and also each employee and department name. Data should be sorted first by Department in ascending order and then by Employee Name in ascending order.

```
var employeeGroup = from employee in Employee.GetAllEmployees()
                     group employee by employee.Department into eGroup
                     orderby eGroup.Key ascending
                     select new {
                         Key = eGroup.Key,
                         Employees = eGroup.OrderBy(x => x.Name)
                     };

foreach (var group in employeeGroup)
{
    Console.WriteLine("{0} - {1}", group.Key, group.Employees.Count());
    Console.WriteLine("-----");
    foreach (var employee in group.Employees)
    {
        Console.WriteLine(employee.Name + "\t" + employee.Department);
    }
    Console.WriteLine(); Console.WriteLine();
}
```

→

|            |
|------------|
| HR - 4     |
| Mary HR    |
| Stacey HR  |
| Steve HR   |
| Valarie HR |
| IT - 6     |
| Andy IT    |
| Ben IT     |
| John IT    |
| Mark IT    |
| Pan IT     |
| Philip IT  |

# Additional Resources

## PRAGIM Home Page:

[www.PragimTech.com](http://www.PragimTech.com)

## Resources:

C#, ADO.NET, ASP.NET, SQL Server & MVC youtube Playlists

<http://www.youtube.com/user/kudvenkat/playlists>

Code samples and text version of all the videos on my blog

<http://www.csharp-video-tutorials.blogspot.com>

To receive email alerts when new videos are uploaded, please subscribe to my YOUTUBE channel

[www.YouTube.com/kudvenkat](http://www.YouTube.com/kudvenkat)

6

[Email This](#)

[BlogThis!](#)

[Share to Twitter](#)

[Share to Facebook](#)

[Share to Pinterest](#)

No comments:

Post a Comment

If you like this website, please share with your friends on facebook and Google+ and recommend us on google using the g+1 button on the top right hand corner.

Newer  
Post

Subscribe to: Post Comments (Atom)

Home

Older  
Post

Powered by [Blogger](#).

# Sql server, .net and c# video tutorial

Free C#, .Net and Sql server video tutorial for beginners and intermediate programmers.

[Support us](#) | [.Net Basics](#) | [C#](#) | [SQL](#) | [ASP.NET](#) | [ADO.NET](#) | [MVC](#) | [Slides](#) | [C# Programs](#) | [Subscribe](#) | [Buy DVD](#) |

Part 19 - Group by multiple keys in linq

**PRAGIM**

**TECHNOLOGIES**

Training + Placements

Best software training and placements in marathahalli, bangalore. For further details please call 09945699393.

Complete Tutorials Angular tutorial for beginners

Angular 5 Tutorial for beginners

Important Videos The Gift of Education

Web application for your business

How to become .NET developer

Resources available to help you

## LINQ Tutorial

### Part 19 - GroupBy multiple keys

Venkat

PRAGIM Technologies

[kudvenkat@gmail.com](mailto:kudvenkat@gmail.com)

<http://csharp-video-tutorials.blogspot.com>

PRAGIM Technologies | 9900113931 | [www.pragimtech.com](http://www.pragimtech.com) | [www.facebook.com/pragimtech](https://www.facebook.com/pragimtech)

1

ASP.NET Core What is ASP.NET  
Core | Text | Slides

Dot Net Video Tutorials Angular 6  
Tutorial

Angular CRUD Tutorial

Angular CLI Tutorial

Angular 2 Tutorial

Design Patterns

SOLID Principles

ASP.NET Web API

Bootstrap

AngularJS Tutorial

jQuery Tutorial

JavaScript with ASP.NET Tutorial

JavaScript Tutorial

Charts Tutorial

LINQ

LINQ to SQL

LINQ to XML

Entity Framework

WCF

# In this session we will learn

- Grouping by multiple keys

## LINQ Tutorial

- Part 16 - Cast and OfType operators in LINQ
- Part 17 - AsEnumerable and AsQueryable in LINQ
- Part 18 - GroupBy in LINQ

Link to Dot Net Basics, ASP.NET, C#, ADO.NET and SQL Server video series  
<http://www.youtube.com/user/kudvenkat/videos?view=1>

2

PRAGIM Technologies | 9900113931 | [www.pragimtech.com](http://www.pragimtech.com) | [www.facebook.com/pragimtech](http://www.facebook.com/pragimtech)  
<http://csharp-video-tutorials.blogspot.com>

ASP.NET Web Services

Dot Net Basics

C#

SQL Server

ADO.NET

ASP.NET

GridView

ASP.NET MVC

Visual Studio Tips and Tricks

Dot Net Interview Questions

Slides Entity Framework

WCF

ASP.NET Web Services

Dot Net Basics

C#

SQL Server

ADO.NET

ASP.NET

GridView

ASP.NET MVC

# Grouping by multiple keys

An anonymous type is usually used when we want to group by multiple keys

**Example 1:** Group employees by Department and then by Gender. The employee groups should be sorted first by Department and then by Gender in ascending order  
Also, employees within each group must be sorted in ascending order by Name

| HR department Female employees Count = 3 |        |    |
|--|--------|----|
| Mary                                     | Female | HR |
| Stacey                                   | Female | HR |
| Valarie                                  | Female | HR |
| HR department Male employees Count = 1   |        |    |
| Steve                                    | Male   | HR |
| IT department Female employees Count = 1 |        |    |
| Pam                                      | Female | IT |
| IT department Male employees Count = 5   |        |    |
| Andy                                     | Male   | IT |
| Ben                                      | Male   | IT |
| John                                     | Male   | IT |
| Mark                                     | Male   | IT |
| Philip                                   | Male   | IT |

```
var employeeGroups = Employee.GetAllEmployees()
    .GroupBy(x => new { x.Department, x.Gender })
    .OrderBy(g => g.Key.Department).ThenBy(g => g.Key.Gender)
    .Select(g => new
    {
        Dept = g.Key.Department,
        Gender = g.Key.Gender,
        Employees = g.OrderBy(x => x.Name)
    });
}
```

Visual Studio Tips and Tricks

Java Video Tutorials Part 1 :  
[Video](#) | [Text](#) | [Slides](#)

Part 2 : [Video](#) | [Text](#) | [Slides](#)

Part 3 : [Video](#) | [Text](#) | [Slides](#)

Interview Questions C#

SQL Server

Written Test

# Grouping by multiple keys

**Example 2:** Rewrite Example 1 using SQL like syntax

```
var employeeGroups = from employee in Employee.GetAllEmployees()
                      group employee by new
                        {
                            employee.Department,
                            employee.Gender
                        } into eGroup
                      orderby eGroup.Key.Department ascending,
                            eGroup.Key.Gender ascending
                      select new
                      {
                          Dept = eGroup.Key.Department,
                          Gender = eGroup.Key.Gender,
                          Employees = eGroup.OrderBy(x => x.Name)
                      };

```

**Dot Net & SQL Server Playlists**

<http://www.youtube.com/user/kudvenkat/playlists>

# Additional Resources

## PRAGIM Home Page:

[www.PragimTech.com](http://www.PragimTech.com)

## Resources:

C#, ADO.NET, ASP.NET, SQL Server & MVC youtube Playlists

<http://www.youtube.com/user/kudvenkat/playlists>

Code samples and text version of all the videos on my blog

<http://www.csharp-video-tutorials.blogspot.com>

To receive email alerts when new videos are uploaded, please subscribe to my YOUTUBE channel

[www.YouTube.com/kudvenkat](http://www.YouTube.com/kudvenkat)

5

[Email This](#)

[BlogThis!](#)

[Share to Twitter](#)

[Share to Facebook](#)

[Share to Pinterest](#)

No comments:

Post a Comment

If you like this website, please share with your friends on facebook and Google+ and recommend us on google using the g+1 button on the top right hand corner.

Newer  
Post

Subscribe to: Post Comments (Atom)

Home

Older  
Post

Powered by [Blogger](#).

# Sql server, .net and c# video tutorial

Free C#, .Net and Sql server video tutorial for beginners and intermediate programmers.

[Support us](#) | [.Net Basics](#) | [C#](#) | [SQL](#) | [ASP.NET](#) | [ADO.NET](#) | [MVC](#) | [Slides](#) | [C# Programs](#) | [Subscribe](#) | [Buy DVD](#) |

Part 20 - Element Operators in LINQ

**PRAGIM**

**TECHNOLOGIES**

Training + Placements

Best software training and placements in marathahalli, bangalore. For further details please call 09945699393.

Complete Tutorials Angular tutorial for beginners

Angular 5 Tutorial for beginners

Important Videos The Gift of Education

Web application for your business

How to become .NET developer

Resources available to help you

# LINQ Tutorial

## Part 20 - Element Operators

Venkat

PRAGIM Technologies

[kudvenkat@gmail.com](mailto:kudvenkat@gmail.com)

<http://csharp-video-tutorials.blogspot.com>

PRAGIM Technologies | 9900113931 | [www.pragimtech.com](http://www.pragimtech.com) | [www.facebook.com/pragimtech](https://www.facebook.com/pragimtech)

1

ASP.NET Core What is ASP.NET  
Core | Text | Slides

Dot Net Video Tutorials Angular 6  
Tutorial

Angular CRUD Tutorial

Angular CLI Tutorial

Angular 2 Tutorial

Design Patterns

SOLID Principles

ASP.NET Web API

Bootstrap

AngularJS Tutorial

jQuery Tutorial

JavaScript with ASP.NET Tutorial

JavaScript Tutorial

Charts Tutorial

LINQ

LINQ to SQL

LINQ to XML

Entity Framework

WCF

# In this session we will learn

- Element Operators

## LINQ Tutorial

**Part 17 - AsEnumerable and AsQueryable in LINQ**

**Part 18 - GroupBy in LINQ**

**Part 19 - Group by multiple keys**

**Link to Dot Net Basics, ASP.NET, C#, ADO.NET and SQL Server video series**

<http://www.youtube.com/user/kudvenkat/videos?view=1>

2

PRAGIM Technologies | 9900113931 | [www.pragimtech.com](http://www.pragimtech.com) | [www.facebook.com/pragimtech](http://www.facebook.com/pragimtech)

<http://csharp-video-tutorials.blogspot.com>

ASP.NET Web Services

Dot Net Basics

C#

SQL Server

ADO.NET

ASP.NET

GridView

ASP.NET MVC

Visual Studio Tips and Tricks

Dot Net Interview Questions

Slides Entity Framework

WCF

ASP.NET Web Services

Dot Net Basics

C#

SQL Server

ADO.NET

ASP.NET

GridView

ASP.NET MVC

# Element Operators

Dot Net & SQL Server Playlists

<http://www.youtube.com/user/kudvenkat/playlists>

**Element Operators**

First / FirstOrDefault

Last / LastOrDefault

ElementAt / ElementAtOrDefault

Single / SingleOrDefault

DefaultIfEmpty

**Element Operators** retrieve a single element from a sequence using the element index or based on a condition. All of these methods have a corresponding overloaded version that accepts a predicate.

**First**: There are 2 overloaded versions of this method. The overloaded version that does not have any parameters simply returns the first element of a sequence.

**Example 1:** Returns the first element from the sequence

```
int[] numbers = { 1, 2, 3, 4, 5, 6, 7, 8, 9 };
int result = numbers.First();
Console.WriteLine("Result = " + result);
```

Output

Result= 1

3

PRAGIM Technologies | 9900113931 | [www.pragimtech.com](http://www.pragimtech.com) | [www.facebook.com/pragimtech](http://www.facebook.com/pragimtech)

<http://csharp-video-tutorials.blogspot.com>

Visual Studio Tips and Tricks

Java Video Tutorials Part 1 :

Video | Text | Slides

Part 2 : Video | Text | Slides

Part 3 : Video | Text | Slides

Interview Questions C#

SQL Server

Written Test

# Element Operators

If the sequence does not contain any elements, then First() method throws an InvalidOperationException.

## Example 2: Throws InvalidOperationException

```
int[] numbers = { };
int result = numbers.First();
Console.WriteLine("Result = " + result);
```

The other overloaded version is used to find the first element in a sequence based on a condition. If the sequence does not contain any elements or if no element in the sequence satisfies the condition then an InvalidOperationException is thrown.

## Example 3: Returns the first even number from the sequence

```
int[] numbers = { 1, 2, 3, 4, 5, 6, 7, 8, 9 };
int result = numbers.First(x => x % 2 == 0);
Console.WriteLine("Result = " + result);
```

### Output:

Result=2

# Element Operators

**Example 4:** Throws InvalidOperationException, as no element in the sequence satisfies the condition specified by the predicate.

```
int[] numbers = { 1, 2, 3, 4, 5, 6, 7, 8, 9 };
int result = numbers.First(x => x % 2 == 100);
Console.WriteLine("Result = " + result);
```

**FirstOrDefault:** This is very similar to First, except that this method does not throw an exception when there are no elements in the sequence or when no element satisfies the condition specified by the predicate. Instead, a default value of the type that is expected is returned.

For reference types the default is NULL and for value types the default depends on the actual type expected.

**Example 5:** Returns ZERO. No element in the sequence satisfies the condition, so the default value (ZERO) for int is returned.

```
int[] numbers = { 1, 2, 3, 4, 5, 6, 7, 8, 9 };
int result = numbers.FirstOrDefault(x => x % 2 == 100);
```

Output

Result= 0

# Element Operators

**Last:** Very similar to First, except it returns the last element of the sequence.

**LastOrDefault:** Very similar to FirstOrDefault, except it returns the last element of the sequence.

**ElementAt:** Returns an element at a specified index. If the sequence is empty or if the provided index value is out of range, then an ArgumentOutOfRangeException is thrown.

**Example 6:** Returns element from the sequence that is at index position 1.

```
int[] numbers = { 1, 2, 3, 4, 5, 6, 7, 8, 9 };
int result = numbers.ElementAt(1);
Console.WriteLine("Result = " + result);
```

Output

Result= 2

**Example 7:** Throws ArgumentOutOfRangeException

```
int[] numbers = { };
int result = numbers.ElementAt(0);
Console.WriteLine("Result = " + result);
```

# Element Operators

**ElementAtOrDefault:** Similar to ElementAt except that this method does not throw an exception, if the sequence is empty or if the provided index value is out of range. Instead, a default value of the type that is expected is returned.

**Single:** There are 2 overloaded versions of this method. The overloaded version that does not have any parameters returns the only element of the sequence.

**Example 8:** Returns the only element (1) of the sequence.

```
int[] numbers = { 1 };
int result = numbers.Single();
Console.WriteLine("Result = " + result);
```

Output  
Result = 1

**Single()** method throws an exception if the sequence is empty or has more than one element.

**Example 9:** Throws InvalidOperationException as the sequence contains more than ONE element.

```
int[] numbers = { 1, 2 };
int result = numbers.Single();
Console.WriteLine("Result = " + result);
```

# Element Operators

The second overloaded version of the `Single()` method is used to find the only element in a sequence that satisfies a given condition. An exception will be thrown if any of the following is true

- a) If the sequence does not contain any elements OR
- b) If no element in the sequence satisfies the condition OR
- c) If more than one element in the sequence satisfies the condition

**Example 1.0:** Throws `InvalidOperationException` as more than one element in the sequence satisfies the condition

```
int[] numbers = { 1, 2, 4 };
int result = numbers.Single(x => x % 2 == 0);
Console.WriteLine("Result = " + result);
```

**SingleOrDefault:** Very similar to `Single()`, except this method does not throw an exception when the sequence is empty or when no element in the sequence satisfies the given condition. Just like `Single()`, this method will still throw an exception, if more than one element in the sequence satisfies the given condition.

**Example 1.1:** Throws `InvalidOperationException`

```
int[] numbers = { 1, 2, 4 };
int result = numbers.SingleOrDefault(x => x % 2 == 0);
Console.WriteLine("Result = " + result);
```

# Element Operators

**DefaultIfEmpty:** If the sequence on which this method is called is not empty, then the values of the original sequence are returned.

**Example 12 :** Returns a copy of the original sequence

```
int[] numbers = { 1, 2, 3 };
IEnumerable<int> result = numbers.DefaultIfEmpty();
foreach (int i in result)
{
    Console.WriteLine(i);
}
```

Output → 1  
2  
3

If the sequence is empty, then DefaultIfEmpty() returns a sequence with the default value of the expected type

**Example 13 :** Since the sequence is empty, a sequence containing the default value (ZERO) of int is returned.

```
int[] numbers = { };
IEnumerable<int> result = numbers.DefaultIfEmpty();
foreach (int i in result)
{
    Console.WriteLine(i);
}
```

Output → 0

# Element Operators

The other overloaded version with a parameter allows us to specify a default value. If this method is called on a sequence that is not empty, then the values of the original sequence are returned. If the sequence is empty, then this method returns a sequence with the specified default value.

**Example 14 :** Since the sequence is empty, a sequence containing the specified default value (10) is returned.

```
int[] numbers = { };
IEnumerable<int> result = numbers.DefaultIfEmpty(10);
foreach (int i in result)
{
    Console.WriteLine(i);
}
```

Output → 10

# Additional Resources

## PRAGIM Home Page:

[www.PragimTech.com](http://www.PragimTech.com)

## Resources:

C#, ADO.NET, ASP.NET, SQL Server & MVC youtube Playlists

<http://www.youtube.com/user/kudvenkat/playlists>

Code samples and text version of all the videos on my blog

<http://www.csharp-video-tutorials.blogspot.com>

To receive email alerts when new videos are uploaded, please subscribe to my YOUTUBE channel

[www.YouTube.com/kudvenkat](http://www.YouTube.com/kudvenkat)

11

[Email This](#)

[BlogThis!](#)

[Share to Twitter](#)

[Share to Facebook](#)

[Share to Pinterest](#)

No comments:

Post a Comment

If you like this website, please share with your friends on facebook and Google+ and recommend us on google using the g+1 button on the top right hand corner.

Newer  
Post

Subscribe to: Post Comments (Atom)

Home

Older  
Post

Powered by [Blogger](#).

# Sql server, .net and c# video tutorial

Free C#, .Net and Sql server video tutorial for beginners and intermediate programmers.

[Support us](#) | [.Net Basics](#) | [C#](#) | [SQL](#) | [ASP.NET](#) | [ADO.NET](#) | [MVC](#) | [Slides](#) | [C# Programs](#) | [Subscribe](#) | [Buy DVD](#) |

Part 21 - Group Join in LINQ

**PRAGIM**  
**TECHNOLOGIES**  
Training + Placements

Best software training and placements in marathahalli, bangalore. For further details please call 09945699393.

Complete Tutorials Angular tutorial for beginners

Angular 5 Tutorial for beginners

Important Videos The Gift of Education

Web application for your business

How to become .NET developer

Resources available to help you

# LINQ Tutorial

## Part 21 - Group Join in LINQ

Venkat

PRAGIM Technologies

[kudvenkat@gmail.com](mailto:kudvenkat@gmail.com)

<http://csharp-video-tutorials.blogspot.com>

PRAGIM Technologies | 9900113931 | [www.pragimtech.com](http://www.pragimtech.com) | [www.facebook.com/pragimtech](https://www.facebook.com/pragimtech)

1

ASP.NET Core What is ASP.NET  
Core | Text | Slides

Dot Net Video Tutorials Angular 6  
Tutorial

Angular CRUD Tutorial

Angular CLI Tutorial

Angular 2 Tutorial

Design Patterns

SOLID Principles

ASP.NET Web API

Bootstrap

AngularJS Tutorial

jQuery Tutorial

JavaScript with ASP.NET Tutorial

JavaScript Tutorial

Charts Tutorial

LINQ

LINQ to SQL

LINQ to XML

Entity Framework

WCF

# In this session we will learn

- Group Join in LINQ

## LINQ Tutorial

- Part 18 - GroupBy in LINQ
- Part 19 - Group by multiple keys
- Part 20 - Element Operators in LINQ

Link to Dot Net Basics, ASP.NET, C#, ADO.NET and SQL Server video series

<http://www.youtube.com/user/kudvenkat/videos?view=1>

2

PRAGIM Technologies | 9900113931 | [www.pragimtech.com](http://www.pragimtech.com) | [www.facebook.com/pragimtech](http://www.facebook.com/pragimtech)

<http://csharp-video-tutorials.blogspot.com>

ASP.NET Web Services

Dot Net Basics

C#

SQL Server

ADO.NET

ASP.NET

GridView

ASP.NET MVC

Visual Studio Tips and Tricks

Dot Net Interview Questions

Slides Entity Framework

WCF

ASP.NET Web Services

Dot Net Basics

C#

SQL Server

ADO.NET

ASP.NET

GridView

ASP.NET MVC

# Group Join in LINQ

Dot Net & SQL Server Playlists

<http://www.youtube.com/user/kudvenkat/playlists>

If you are in need of the DVD with all the videos and PPT's, please visit

<http://pragimtech.com/order.aspx>

Different types of joins in LINQ

GroupJoin

InnerJoin

LeftOuterJoin

CrossJoin

Group Join produces hierarchical data structures. Each element from the first collection is paired with a set of correlated elements from the second collection.

Group Join with Extension Method Syntax - use GroupJoin() extension method

Group Join with SQL like syntax - Use join operator and the into keyword

Visual Studio Tips and Tricks

Java Video Tutorials Part 1 :

Video | Text | Slides

Part 2 : Video | Text | Slides

Part 3 : Video | Text | Slides

Interview Questions C#

SQL Server

Written Test

# Group Join in LINQ

Example 1: Group employees by Department.

```
var employeesByDepartment = Department.GetAllDepartments()
    .GroupJoin(Employee.GetAllEmployees(),
    d => d.ID,
    e => e.DepartmentID,
    (department, employees) => new
    {
        Department = department,
        Employees = employees
    });

foreach (var department in employeesByDepartment)
{
    Console.WriteLine(department.Department.Name);
    foreach (var employee in department.Employees)
    {
        Console.WriteLine(" " + employee.Name);
    }
    Console.WriteLine();
}
```

|         |         |
|---------|---------|
| IT      | Mark    |
|         | Ben     |
|         | Philip  |
|         | John    |
|         | Pam     |
|         | Andy    |
| HR      | Steve   |
|         | Mary    |
|         | Ualarie |
|         | Stacey  |
| Payroll |         |

# Group Join in LINQ

Example 2: Rewrite Example 1 using SQL like syntax.

```
var employeesByDepartment = from d in Department.GetAllDepartments()
                             join e in Employee.GetAllEmployees()
                             on d.ID equals e.DepartmentID into eGroup
                             select new
                             {
                                 Department = d,
                                 Employees = eGroup
                             };

foreach (var department in employeesByDepartment)
{
    Console.WriteLine(department.Department.Name);
    foreach (var employee in department.Employees)
    {
        Console.WriteLine(" " + employee.Name);
    }
    Console.WriteLine();
}
```

|         |         |
|---------|---------|
| IT      | Mark    |
|         | Ben     |
|         | Philip  |
|         | John    |
|         | Pam     |
|         | Andy    |
| HR      | Steve   |
|         | Mary    |
|         | Valarie |
|         | Stacey  |
| Payroll |         |

Please note: Group Join uses the join operator and the into keyword to group the results of the join.

# Additional Resources

## PRAGIM Home Page:

[www.PragimTech.com](http://www.PragimTech.com)

## Resources:

C#, ADO.NET, ASP.NET, SQL Server & MVC youtube Playlists

<http://www.youtube.com/user/kudvenkat/playlists>

Code samples and text version of all the videos on my blog

<http://www.csharp-video-tutorials.blogspot.com>

To receive email alerts when new videos are uploaded, please subscribe to my YOUTUBE channel

[www.YouTube.com/kudvenkat](http://www.YouTube.com/kudvenkat)

6

[Email This](#)

[BlogThis!](#)

[Share to Twitter](#)

[Share to Facebook](#)

[Share to Pinterest](#)

No comments:

Post a Comment

If you like this website, please share with your friends on facebook and Google+ and recommend us on google using the g+1 button on the top right hand corner.

Newer  
Post

Subscribe to: Post Comments (Atom)

Home

Older  
Post

Powered by [Blogger](#).

# Sql server, .net and c# video tutorial

Free C#, .Net and Sql server video tutorial for beginners and intermediate programmers.

[Support us](#) | [.Net Basics](#) | [C#](#) | [SQL](#) | [ASP.NET](#) | [ADO.NET](#) | [MVC](#) | [Slides](#) | [C# Programs](#) | [Subscribe](#) | [Buy DVD](#) |

Part 22 - Inner Join in LINQ

**PRAGIM**

**TECHNOLOGIES**

Training + Placements

Best software training and placements in marathahalli, bangalore. For further details please call 09945699393.

Complete Tutorials Angular tutorial for beginners

Angular 5 Tutorial for beginners

Important Videos The Gift of Education

Web application for your business

How to become .NET developer

Resources available to help you

# LINQ Tutorial

## Part 22 - Inner Join in LINQ

Venkat

PRAGIM Technologies

[kudvenkat@gmail.com](mailto:kudvenkat@gmail.com)

<http://csharp-video-tutorials.blogspot.com>

PRAGIM Technologies | 9900113931 | [www.pragimtech.com](http://www.pragimtech.com) | [www.facebook.com/pragimtech](https://www.facebook.com/pragimtech)

1

ASP.NET Core What is ASP.NET  
Core | Text | Slides

Dot Net Video Tutorials Angular 6  
Tutorial

Angular CRUD Tutorial

Angular CLI Tutorial

Angular 2 Tutorial

Design Patterns

SOLID Principles

ASP.NET Web API

Bootstrap

AngularJS Tutorial

jQuery Tutorial

JavaScript with ASP.NET Tutorial

JavaScript Tutorial

Charts Tutorial

LINQ

LINQ to SQL

LINQ to XML

Entity Framework

WCF

# In this session we will learn

- Inner Join in LINQ

## LINQ Tutorial

[Part 19 - Group by multiple keys](#)

[Part 20 - Element Operators in LINQ](#)

[Part 21 - Group Join in LINQ](#)

**Link to Dot Net Basics, ASP.NET, C#, ADO.NET and SQL Server video series**

<http://www.youtube.com/user/kudvenkat/playlists>

2

PRAGIM Technologies | 9900113931 | [www.pragimtech.com](http://www.pragimtech.com) | [www.facebook.com/pragimtech](http://www.facebook.com/pragimtech)

<http://csharp-video-tutorials.blogspot.com>

ASP.NET Web Services

Dot Net Basics

C#

SQL Server

ADO.NET

ASP.NET

GridView

ASP.NET MVC

Visual Studio Tips and Tricks

Dot Net Interview Questions

Slides Entity Framework

WCF

ASP.NET Web Services

Dot Net Basics

C#

SQL Server

ADO.NET

ASP.NET

GridView

ASP.NET MVC

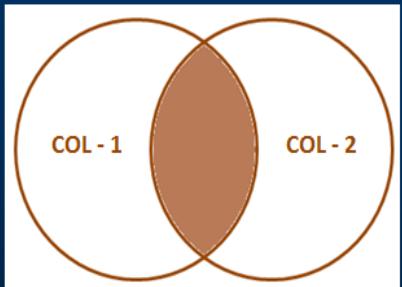
# Inner Join in LINQ

Dot Net & SQL Server Playlists

<http://www.youtube.com/user/kudvenkat/playlists>

If you are in need of the DVD with all the videos and PPT's, please visit

<http://pragimtech.com/order.aspx>



**INNER JOIN:** If you have 2 collections, and when you perform an inner join, then only the matching elements between the 2 collections are included in the result set.

Non-Matching elements are excluded from the result set

Visual Studio Tips and Tricks

Java Video Tutorials Part 1 :

Video | Text | Slides

Part 2 : Video | Text | Slides

Part 3 : Video | Text | Slides

Interview Questions C#

SQL Server

Written Test

# Inner Join in LINQ

**Example 1 : Join the Employees and Department collections and print all the Employees and their respective department names.**

```
var employees = Employee.GetAllEmployees()
    .Join(Department.GetAllDepartments(), e => e.DepartmentID,
        d => d.ID, (employee, department) => new
    {
        EmployeeName = employee.Name,
        DepartmentName = department.Name
    });

foreach (var employee in employees)
{
    Console.WriteLine(employee.EmployeeName + "\t" + employee.DepartmentName);
}
```

**Output:**

|         |    |
|---------|----|
| Mark    | IT |
| Steve   | HR |
| Ben     | IT |
| Philip  | IT |
| Mary    | HR |
| Ualarie | HR |
| John    | IT |
| Pam     | IT |
| Stacey  | HR |

**Notice that, in the output we don't have Andy record. This is because, Andy does not have a matching department in Department collection. So this is effectively an inner join.**

# Inner Join in LINQ

**Example 2 : Rewrite Example 1 using SQL like syntax.**

```
var employees = from e in Employee.GetAllEmployees()
                join d in Department.GetAllDepartments()
                on e.DepartmentID equals d.ID
                select new { EmployeeName = e.Name, DepartmentName = d.Name };

foreach (var employee in employees)
{
    Console.WriteLine(employee.EmployeeName + "\t" + employee.DepartmentName);
}
```

**Please Note:**

**When specifying the matching keys, equals keyword must be used instead of ==**

# Additional Resources

## PRAGIM Home Page:

[www.PragimTech.com](http://www.PragimTech.com)

## Resources:

C#, ADO.NET, ASP.NET, SQL Server & MVC youtube Playlists

<http://www.youtube.com/user/kudvenkat/playlists>

Code samples and text version of all the videos on my blog

<http://www.csharp-video-tutorials.blogspot.com>

To receive email alerts when new videos are uploaded, please subscribe to my YOUTUBE channel

[www.YouTube.com/kudvenkat](http://www.YouTube.com/kudvenkat)

6

[Email This](#)

[BlogThis!](#)

[Share to Twitter](#)

[Share to Facebook](#)

[Share to Pinterest](#)

No comments:

Post a Comment

If you like this website, please share with your friends on facebook and Google+ and recommend us on google using the g+1 button on the top right hand corner.

Newer  
Post

Subscribe to: Post Comments (Atom)

Home

Older  
Post

Powered by [Blogger](#).

# Sql server, .net and c# video tutorial

Free C#, .Net and Sql server video tutorial for beginners and intermediate programmers.

[Support us](#) | [.Net Basics](#) | [C#](#) | [SQL](#) | [ASP.NET](#) | [ADO.NET](#) | [MVC](#) | [Slides](#) | [C# Programs](#) | [Subscribe](#) | [Buy DVD](#) |

Part 23 - Difference between group join and inner join  
in linq

**PRAGIM**

**TECHNOLOGIES**

Training + Placements

Best software training and  
placements in marathahalli,  
bangalore. For further details  
please call 09945699393.

Complete Tutorials Angular tutorial  
for beginners

Angular 5 Tutorial for beginners

Important Videos The Gift of  
Education

Web application for your business

How to become .NET developer

Resources available to help you

# LINQ Tutorial

## Part 23 - Group Join v/s Inner Join

Venkat

PRAGIM Technologies

[kudvenkat@gmail.com](mailto:kudvenkat@gmail.com)

<http://csharp-video-tutorials.blogspot.com>

PRAGIM Technologies | 9900113931 | [www.pragimtech.com](http://www.pragimtech.com) | [www.facebook.com/pragimtech](https://www.facebook.com/pragimtech)

1

ASP.NET Core What is ASP.NET  
Core | Text | Slides

Dot Net Video Tutorials Angular 6  
Tutorial

Angular CRUD Tutorial

Angular CLI Tutorial

Angular 2 Tutorial

Design Patterns

SOLID Principles

ASP.NET Web API

Bootstrap

AngularJS Tutorial

jQuery Tutorial

JavaScript with ASP.NET Tutorial

JavaScript Tutorial

Charts Tutorial

LINQ

LINQ to SQL

LINQ to XML

Entity Framework

WCF

# In this session we will learn

- Difference between group join and inner join in linq

## LINQ Tutorial

[Part 20 - Element Operators in LINQ](#)

[Part 21 - Group Join in LINQ](#)

[Part 22 - Inner Join in LINQ](#)

**Link to Dot Net Basics, ASP.NET, C#, ADO.NET and SQL Server video series**

<http://www.youtube.com/user/kudvenkat/playlists>

2

PRAGIM Technologies | 9900113931 | [www.pragimtech.com](http://www.pragimtech.com) | [www.facebook.com/pragimtech](http://www.facebook.com/pragimtech)

<http://csharp-video-tutorials.blogspot.com>

ASP.NET Web Services

Dot Net Basics

C#

SQL Server

ADO.NET

ASP.NET

GridView

ASP.NET MVC

Visual Studio Tips and Tricks

Dot Net Interview Questions

Slides Entity Framework

WCF

ASP.NET Web Services

Dot Net Basics

C#

SQL Server

ADO.NET

ASP.NET

GridView

ASP.NET MVC

# Group Join v/s Inner Join

Dot Net & SQL Server Playlists

<http://www.youtube.com/user/kudvenkat/playlists>

If you are in need of the DVD with all the videos and PPT's, please visit

<http://pragimtech.com/order.aspx>

| Department Data |      |
|-----------------|------|
| ID              | Name |
| 1               | IT   |
| 2               | HR   |
| 3               | XX   |

| Employee Data |        |              |
|---------------|--------|--------------|
| ID            | Name   | DepartmentID |
| 1             | Mark   | 1            |
| 2             | Steve  | 2            |
| 3             | Ben    | 1            |
| 4             | Philip | 1            |
| 5             | Mary   | 2            |

```
// Group Join
var result = from d in Department.GetAllDepartments()
             join e in Employee.GetAllEmployees()
             on d.ID equals e.DepartmentID into eGroup
             select new { Department = d, Employees = eGroup };
```

```
// Inner Join
var result = from e in Employee.GetAllEmployees()
             join d in Department.GetAllDepartments()
             on e.DepartmentID equals d.ID
             select new { e, d };
```

Note: INTO keyword is used along with JOIN operator to implement Group Join

3

PRAGIM Technologies | 9900113931 | [www.pragimtech.com](http://www.pragimtech.com) | [www.facebook.com/pragimtech](http://www.facebook.com/pragimtech)

<http://csharp-video-tutorials.blogspot.com>

Visual Studio Tips and Tricks

Java Video Tutorials Part 1 :  
Video | Text | Slides

Part 2 : Video | Text | Slides

Part 3 : Video | Text | Slides

Interview Questions C#

SQL Server

Written Test

# Group Join v/s Inner Join

| Department Data |      |
|-----------------|------|
| ID              | Name |
| 1               | IT   |
| 2               | HR   |
| 3               | XX   |

| Employee Data |        |              |
|---------------|--------|--------------|
| ID            | Name   | DepartmentID |
| 1             | Mark   | 1            |
| 2             | Steve  | 2            |
| 3             | Ben    | 1            |
| 4             | Philip | 1            |
| 5             | Mary   | 2            |

```
// Group Join
var result = from d in Department.GetAllDepartments()
             join e in Employee.GetAllEmployees()
             on d.ID equals e.DepartmentID into eGroup
             select new { Department = d, Employees = eGroup };
```

Employees Grouped By Department

| Department          | Employee                                   | Employee                                  | Employee                                    |
|---------------------|--|---|---|
| ID = 1<br>Name = IT | ID = 1<br>Name = Mark<br>DepartmentID = 1  | ID = 3<br>Name = Ben<br>DepartmentID = 1  | ID = 4<br>Name = Philip<br>DepartmentID = 1 |
| Department          | Employee                                   | Employee                                  |   |
| ID = 2<br>Name = HR | ID = 2<br>Name = Steve<br>DepartmentID = 2 | ID = 5<br>Name = Mary<br>DepartmentID = 2 |   |
| Department          |  |   |   |
| ID = 3<br>Name = XX |  |   |   |

# Group Join v/s Inner Join

| Department Data |      |
|-----------------|------|
| ID              | Name |
| 1               | IT   |
| 2               | HR   |
| 3               | XX   |

| Employee Data |        |              |
|---------------|--------|--------------|
| ID            | Name   | DepartmentID |
| 1             | Mark   | 1            |
| 2             | Steve  | 2            |
| 3             | Ben    | 1            |
| 4             | Philip | 1            |
| 5             | Mary   | 2            |

| Department          | Employee                                   | Employee                                  | Employee                                    |
|---------------------|--|---|---|
| ID = 1<br>Name = IT | ID = 1<br>Name = Mark<br>DepartmentID = 1  | ID = 3<br>Name = Ben<br>DepartmentID = 1  | ID = 4<br>Name = Philip<br>DepartmentID = 1 |
| ID = 2<br>Name = HR | ID = 2<br>Name = Steve<br>DepartmentID = 2 | ID = 5<br>Name = Mary<br>DepartmentID = 2 |   |
| ID = 3<br>Name = XX |  |   |   |

To print the Department and Employee Names we use 2 foreach loops

```
foreach (var department in result)
{
    Console.WriteLine(department.Department.Name);
    foreach (var employee in department.Employees)
    {
        Console.WriteLine(" " + employee.Name);
    }
    Console.WriteLine();
}
```

# Group Join v/s Inner Join

```
// Inner Join  
var result = from e in Employee.GetAllEmployees()  
             join d in Department.GetAllDepartments()  
             on e.DepartmentID equals d.ID  
             select new { e, d };
```

Inner Join produces a flat result set

| Department Data |      |
|-----------------|------|
| ID              | Name |
| 1               | IT   |
| 2               | HR   |
| 3               | XX   |

| Employee Data |        |              |
|---------------|--------|--------------|
| ID            | Name   | DepartmentID |
| 1             | Mark   | 1            |
| 2             | Steve  | 2            |
| 3             | Ben    | 1            |
| 4             | Philip | 1            |
| 5             | Mary   | 2            |

|                                   |   |
|-----------------------------------|---|
| Department<br>ID = 1<br>Name = IT | Employee<br>ID = 1<br>Name = Mark<br>DepartmentID = 1   |
| Department<br>ID = 1<br>Name = IT | Employee<br>ID = 3<br>Name = Ben<br>DepartmentID = 1    |
| Department<br>ID = 1<br>Name = IT | Employee<br>ID = 4<br>Name = Philip<br>DepartmentID = 1 |
| Department<br>ID = 2<br>Name = HR | Employee<br>ID = 2<br>Name = Steve<br>DepartmentID = 2  |
| Department<br>ID = 2<br>Name = HR | Employee<br>ID = 5<br>Name = Mary<br>DepartmentID = 2   |

To print the Department and Employee Names we use just 1 foreach loop

```
foreach (var employee in result)  
{  
    Console.WriteLine(employee.e.Name + "\t" + employee.d.Name);  
}
```

# Group Join v/s Inner Join

```
// Group Join using extension method
var result = Department.GetAllDepartments()
    .GroupJoin(Employee.GetAllEmployees(),
        d => d.ID,
        e => e.DepartmentID,
        (department, employees) => new
    {
        Department = department,
        Employees = employees
    });
}
```

```
// Inner Join using extension method
var result = Employee.GetAllEmployees()
    .Join(Department.GetAllDepartments(),
        e => e.DepartmentID,
        d => d.ID, (employee, department) => new
    {
        e = employee,
        d = department
    });
}
```

**Join** is similar to **INNER JOIN** in SQL and **GroupJoin** is similar to **OUTER JOIN** in SQL

# Additional Resources

## PRAGIM Home Page:

[www.PragimTech.com](http://www.PragimTech.com)

## Resources:

C#, ADO.NET, ASP.NET, SQL Server & MVC youtube Playlists

<http://www.youtube.com/user/kudvenkat/playlists>

Code samples and text version of all the videos on my blog

<http://www.csharp-video-tutorials.blogspot.com>

To receive email alerts when new videos are uploaded, please subscribe to my YOUTUBE channel

[www.YouTube.com/kudvenkat](http://www.YouTube.com/kudvenkat)

8

[Email This](#)

[BlogThis!](#)

[Share to Twitter](#)

[Share to Facebook](#)

[Share to Pinterest](#)

No comments:

Post a Comment

If you like this website, please share with your friends on facebook and Google+ and recommend us on google using the g+1 button on the top right hand corner.

Newer  
Post

Subscribe to: Post Comments (Atom)

[Home](#)

Older  
Post

Powered by [Blogger](#).

# Sql server, .net and c# video tutorial

Free C#, .Net and Sql server video tutorial for beginners and intermediate programmers.

[Support us](#) | [.Net Basics](#) | [C#](#) | [SQL](#) | [ASP.NET](#) | [ADO.NET](#) | [MVC](#) | [Slides](#) | [C# Programs](#) | [Subscribe](#) | [Buy DVD](#) |

Part 24 - Left Outer Join in LINQ

**PRAGIM**

**TECHNOLOGIES**

Training + Placements

Best software training and placements in marathahalli, bangalore. For further details please call 09945699393.

Complete Tutorials Angular tutorial for beginners

Angular 5 Tutorial for beginners

Important Videos The Gift of Education

Web application for your business

How to become .NET developer

Resources available to help you

# LINQ Tutorial

## Part 24 - Left Outer Join

Venkat

PRAGIM Technologies

[kudvenkat@gmail.com](mailto:kudvenkat@gmail.com)

<http://csharp-video-tutorials.blogspot.com>

PRAGIM Technologies | 9900113931 | [www.pragimtech.com](http://www.pragimtech.com) | [www.facebook.com/pragimtech](https://www.facebook.com/pragimtech)

1

ASP.NET Core What is ASP.NET  
Core | Text | Slides

Dot Net Video Tutorials Angular 6  
Tutorial

Angular CRUD Tutorial

Angular CLI Tutorial

Angular 2 Tutorial

Design Patterns

SOLID Principles

ASP.NET Web API

Bootstrap

AngularJS Tutorial

jQuery Tutorial

JavaScript with ASP.NET Tutorial

JavaScript Tutorial

Charts Tutorial

LINQ

LINQ to SQL

LINQ to XML

Entity Framework

WCF

# In this session we will learn

- Left Outer Join in LINQ

## LINQ Tutorial

[Part 21 - Group Join in LINQ](#)

[Part 22 - Inner Join in LINQ](#)

[Part 23 - Difference between group join and inner join in linq](#)

**Link to Dot Net Basics, ASP.NET, C#, ADO.NET and SQL Server video series**

<http://www.youtube.com/user/kudvenkat/playlists>

2

PRAGIM Technologies | 9900113931 | [www.pragimtech.com](http://www.pragimtech.com) | [www.facebook.com/pragimtech](http://www.facebook.com/pragimtech)

<http://csharp-video-tutorials.blogspot.com>

ASP.NET Web Services

Dot Net Basics

C#

SQL Server

ADO.NET

ASP.NET

GridView

ASP.NET MVC

Visual Studio Tips and Tricks

Dot Net Interview Questions

Slides Entity Framework

WCF

ASP.NET Web Services

Dot Net Basics

C#

SQL Server

ADO.NET

ASP.NET

GridView

ASP.NET MVC

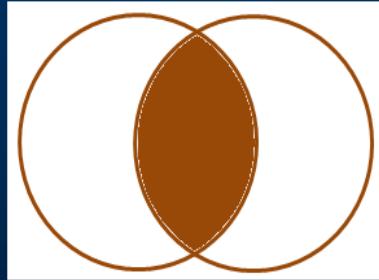
# Left Outer Join in LINQ

Dot Net & SQL Server Playlists

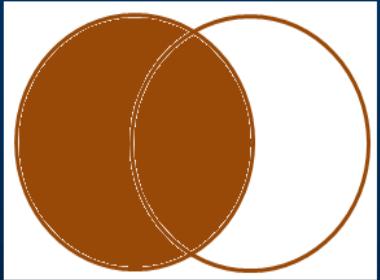
<http://www.youtube.com/user/kudvenkat/playlists>

If you are in need of the DVD with all the videos and PPT's, please visit

<http://pragimtech.com/order.aspx>



With **INNER JOIN** only the matching elements are included in the result set. Non-matching elements are excluded from the result set.



With **LEFT OUTER JOIN** all the matching elements + all the non matching elements from the left collection are included in the result set.

Visual Studio Tips and Tricks

Java Video Tutorials Part 1 :

Video | Text | Slides

Part 2 : Video | Text | Slides

Part 3 : Video | Text | Slides

Interview Questions C#

SQL Server

Written Test

# Left Outer Join in LINQ

**Example 1 :** Implement a Left Outer Join between Employees and Department collections and print all the Employees and their respective department names. Employees without a department, should display "No Department" against their name.

```
var result = from e in Employee.GetAllEmployees()
             join d in Department.GetAllDepartments()
             on e.DepartmentID equals d.ID into eGroup
             from d in eGroup.DefaultIfEmpty()
             select new
             {
                 EmployeeName = e.Name,
                 DepartmentName = d == null ? "No Department" : d.Name
             };

foreach (var v in result)
{
    Console.WriteLine(v.EmployeeName + "\t" + v.DepartmentName);
}
```

**Output:** Notice that, we also have Mary record in spite of she not having a department. So this is effectively a left outer join.

|        |               |
|--------|---------------|
| Mark   | IT            |
| Steve  | HR            |
| Ben    | IT            |
| Philip | IT            |
| Mary   | No Department |

# Left Outer Join in LINQ

## Example 2 : Rewrite Example 1 using extension method syntax

```
var result = Employee.GetAllEmployees()
    .GroupJoin (Department.GetAllDepartments(),
                e => e.DepartmentID,
                d => d.ID,
                (emp, depts) => new { emp, depts })
    .SelectMany(z => z.depts.DefaultIfEmpty(),
                (a, b) => new
    {
        EmployeeName = a.emp.Name,
        DepartmentName = b == null ? "No Department" : b.Name
    });

foreach (var v in result)
{
    Console.WriteLine(" " + v.EmployeeName + "\t" + v.DepartmentName);
}
```

To implement Left Outer Join, with extension method syntax we use the **GroupJoin()** method along with **SelectMany()** and **DefaultIfEmpty()** methods.

# Additional Resources

## PRAGIM Home Page:

[www.PragimTech.com](http://www.PragimTech.com)

## Resources:

C#, ADO.NET, ASP.NET, SQL Server & MVC youtube Playlists

<http://www.youtube.com/user/kudvenkat/playlists>

Code samples and text version of all the videos on my blog

<http://www.csharp-video-tutorials.blogspot.com>

To receive email alerts when new videos are uploaded, please subscribe to my YOUTUBE channel

[www.YouTube.com/kudvenkat](http://www.YouTube.com/kudvenkat)

6

[Email This](#)

[BlogThis!](#)

[Share to Twitter](#)

[Share to Facebook](#)

[Share to Pinterest](#)

No comments:

Post a Comment

If you like this website, please share with your friends on facebook and Google+ and recommend us on google using the g+1 button on the top right hand corner.

Newer  
Post

Subscribe to: Post Comments (Atom)

Home

Older  
Post

Powered by [Blogger](#).

# Sql server, .net and c# video tutorial

Free C#, .Net and Sql server video tutorial for beginners and intermediate programmers.

[Support us](#) | [.Net Basics](#) | [C#](#) | [SQL](#) | [ASP.NET](#) | [ADO.NET](#) | [MVC](#) | [Slides](#) | [C# Programs](#) | [Subscribe](#) | [Buy DVD](#) |

Part 25 - Cross Join in LINQ

**PRAGIM**

**TECHNOLOGIES**

Training + Placements

Best software training and placements in marathahalli, bangalore. For further details please call 09945699393.

Complete Tutorials Angular tutorial for beginners

Angular 5 Tutorial for beginners

Important Videos The Gift of Education

Web application for your business

How to become .NET developer

Resources available to help you

# LINQ Tutorial

## Part 25 - Cross Join in LINQ

Venkat

PRAGIM Technologies

[kudvenkat@gmail.com](mailto:kudvenkat@gmail.com)

<http://csharp-video-tutorials.blogspot.com>

PRAGIM Technologies | 9900113931 | [www.pragimtech.com](http://www.pragimtech.com) | [www.facebook.com/pragimtech](https://www.facebook.com/pragimtech)

1

ASP.NET Core What is ASP.NET  
Core | Text | Slides

Dot Net Video Tutorials Angular 6  
Tutorial

Angular CRUD Tutorial

Angular CLI Tutorial

Angular 2 Tutorial

Design Patterns

SOLID Principles

ASP.NET Web API

Bootstrap

AngularJS Tutorial

jQuery Tutorial

JavaScript with ASP.NET Tutorial

JavaScript Tutorial

Charts Tutorial

LINQ

LINQ to SQL

LINQ to XML

Entity Framework

WCF

# In this session we will learn

- Cross Join in LINQ

## LINQ Tutorial

Part 22 - Inner Join in LINQ

Part 23 - Difference between group join and inner join in linq

Part 24 - Left Outer Join in LINQ

Link to Dot Net Basics, ASP.NET, C#, ADO.NET and SQL Server video series

<http://www.youtube.com/user/kudvenkat/playlists>

2

PRAGIM Technologies | 9900113931 | [www.pragimtech.com](http://www.pragimtech.com) | [www.facebook.com/pragimtech](http://www.facebook.com/pragimtech)

<http://csharp-video-tutorials.blogspot.com>

ASP.NET Web Services

Dot Net Basics

C#

SQL Server

ADO.NET

ASP.NET

GridView

ASP.NET MVC

Visual Studio Tips and Tricks

Dot Net Interview Questions

Slides Entity Framework

WCF

ASP.NET Web Services

Dot Net Basics

C#

SQL Server

ADO.NET

ASP.NET

GridView

ASP.NET MVC

# Cross Join in LINQ

Dot Net & SQL Server Playlists

<http://www.youtube.com/user/kudvenkat/playlists>

If you are in need of the DVD with all the videos and PPT's, please visit

<http://pragimtech.com/order.aspx>

Different types of joins in LINQ

Group Join      Part 21

Inner Join      Part 22

Left Outer Join      Part 24

Cross Join      We will discuss in this video

Cross join produces a Cartesian product i.e when we cross join two sequences, every element in the first collection is combined with every element in the second collection. The total number of elements in the resultant sequence will always be equal to the product of the elements in the two source sequences.

The on keyword that specifies the JOIN KEY is not required.

3

PRAGIM Technologies | 9900113931 | [www.pragimtech.com](http://www.pragimtech.com) | [www.facebook.com/pragimtech](http://www.facebook.com/pragimtech)

<http://csharp-video-tutorials.blogspot.com>

Visual Studio Tips and Tricks

Java Video Tutorials Part 1 :

Video | Text | Slides

Part 2 : Video | Text | Slides

Part 3 : Video | Text | Slides

Interview Questions C#

SQL Server

Written Test

# Cross Join in LINQ

## Example 1 : Cross Join Employees collection with Departments collections

```
var result = from e in Employee.GetAllEmployees()
             from d in Department.GetAllDepartments()
             select new { e, d };

foreach (var v in result)
{
    Console.WriteLine(v.e.Name + "\t" + v.d.Name);
}
```

**Output:** We have 5 elements in Employees collection and 2 elements in Departments collection. In the result we have 10 elements, i.e the Cartesian product of the elements present in Employees and Departments collection. Notice that every element from the Employees collection is combined with every element in the Departments collection.

|        |    |
|--------|----|
| Mark   | IT |
| Mark   | HR |
| Steve  | IT |
| Steve  | HR |
| Ben    | IT |
| Ben    | HR |
| Philip | IT |
| Philip | HR |
| Mary   | IT |
| Mary   | HR |

# Cross Join in LINQ

## Example 2 : Cross Join Departments collections with Employees collection

```
var result = from d in Department.GetAllDepartments()
             from e in Employee.GetAllEmployees()
             select new { e, d };

foreach (var v in result)
{
    Console.WriteLine(v.e.Name + "\t" + v.d.Name);
}
```

**Output:** Notice that the output in this case is slightly different from Example 1. In this case, every element from the Departments collection is combined with every element in the Employees collection.

|        |    |
|--------|----|
| Mark   | IT |
| Steve  | IT |
| Ben    | IT |
| Philip | IT |
| Mary   | IT |
| Mark   | HR |
| Steve  | HR |
| Ben    | HR |
| Philip | HR |
| Mary   | HR |

# Cross Join in LINQ

**Example 3:** Rewrite Example 1 using extension method syntax.

To implement Cross Join using extension method syntax, we could either use **SelectMany()** method or **Join()** method

```
//Implementing cross join using SelectMany()
var result = Employee.GetAllEmployees().SelectMany(e => Department.GetAllDepartments(),
                                                    (e, d) => new { e, d });

foreach (var v in result)
{
    Console.WriteLine(" " + v.e.Name + "\t" + v.d.Name);
}
```

```
//Implementing cross join using Join()
var result = Employee.GetAllEmployees().Join(Department.GetAllDepartments(),
                                              e => true,
                                              d => true,
                                              (e, d) => new { e, d });

foreach (var v in result)
{
    Console.WriteLine(" " + v.e.Name + "\t" + v.d.Name);
}
```

# Additional Resources

## PRAGIM Home Page:

[www.PragimTech.com](http://www.PragimTech.com)

## Resources:

C#, ADO.NET, ASP.NET, SQL Server & MVC youtube Playlists

<http://www.youtube.com/user/kudvenkat/playlists>

Code samples and text version of all the videos on my blog

<http://www.csharp-video-tutorials.blogspot.com>

To receive email alerts when new videos are uploaded, please subscribe to my YOUTUBE channel

[www.YouTube.com/kudvenkat](http://www.YouTube.com/kudvenkat)

7

[Email This](#)

[BlogThis!](#)

[Share to Twitter](#)

[Share to Facebook](#)

[Share to Pinterest](#)

No comments:

Post a Comment

If you like this website, please share with your friends on facebook and Google+ and recommend us on google using the g+1 button on the top right hand corner.

Newer  
Post

Subscribe to: Post Comments (Atom)

Home

Older  
Post

Powered by [Blogger](#).

# Sql server, .net and c# video tutorial

Free C#, .Net and Sql server video tutorial for beginners and intermediate programmers.

[Support us](#) | [.Net Basics](#) | [C#](#) | [SQL](#) | [ASP.NET](#) | [ADO.NET](#) | [MVC](#) | [Slides](#) | [C# Programs](#) | [Subscribe](#) | [Buy DVD](#) |

Part 26 - Set operators in LINQ

**PRAGIM**

**TECHNOLOGIES**

Training + Placements

Best software training and placements in marathahalli, bangalore. For further details please call 09945699393.

Complete Tutorials Angular tutorial for beginners

Angular 5 Tutorial for beginners

Important Videos The Gift of Education

Web application for your business

How to become .NET developer

Resources available to help you

# LINQ Tutorial

## Part 26 - Set operators in LINQ

Venkat

PRAGIM Technologies

[kudvenkat@gmail.com](mailto:kudvenkat@gmail.com)

<http://csharp-video-tutorials.blogspot.com>

PRAGIM Technologies | 9900113931 | [www.pragimtech.com](http://www.pragimtech.com) | [www.facebook.com/pragimtech](https://www.facebook.com/pragimtech)

1

ASP.NET Core What is ASP.NET  
Core | Text | Slides

Dot Net Video Tutorials Angular 6  
Tutorial

Angular CRUD Tutorial

Angular CLI Tutorial

Angular 2 Tutorial

Design Patterns

SOLID Principles

ASP.NET Web API

Bootstrap

AngularJS Tutorial

jQuery Tutorial

JavaScript with ASP.NET Tutorial

JavaScript Tutorial

Charts Tutorial

LINQ

LINQ to SQL

LINQ to XML

Entity Framework

WCF

# In this session we will learn

- Set operators in LINQ

## LINQ Tutorial

[Part 23 - Difference between group join and inner join in linq](#)

[Part 24 - Left Outer Join in LINQ](#)

[Part 25 - CrossJoin in LINQ](#)

[Link to Dot Net Basics, ASP.NET, C#, ADO.NET and SQL Server video series](#)

<http://www.youtube.com/user/kudvenkat/playlists>

2

PRAGIM Technologies | 9900113931 | [www.pragimtech.com](http://www.pragimtech.com) | [www.facebook.com/pragimtech](http://www.facebook.com/pragimtech)

<http://csharp-video-tutorials.blogspot.com>

ASP.NET Web Services

Dot Net Basics

C#

SQL Server

ADO.NET

ASP.NET

GridView

ASP.NET MVC

Visual Studio Tips and Tricks

Dot Net Interview Questions

Slides Entity Framework

WCF

ASP.NET Web Services

Dot Net Basics

C#

SQL Server

ADO.NET

ASP.NET

GridView

ASP.NET MVC

# Set operators in LINQ

Dot Net & SQL Server Playlists

<http://www.youtube.com/user/kudvenkat/playlists>

If you are in need of the DVD with all the videos and PPT's, please visit

<http://pragimtech.com/order.aspx>

## Set Operators

Distinct

Union

Intersect

Except

Distinct operator returns distinct elements from a given collection.

PRAGIM Technologies | 9900113931 | [www.pragimtech.com](http://www.pragimtech.com) | [www.facebook.com/pragimtech](http://www.facebook.com/pragimtech)

<http://csharp-video-tutorials.blogspot.com>

Visual Studio Tips and Tricks

Java Video Tutorials Part 1 :

Video | Text | Slides

Part 2 : Video | Text | Slides

Part 3 : Video | Text | Slides

Interview Questions C#

SQL Server

Written Test

# Set operators in LINQ

**Example 1:** Return distinct country names. In this example the default comparer is being used and the comparison is case-sensitive, so in the output we see country USA 2 times.

```
string[] countries = { "USA", "usa", "INDIA", "UK", "UK" };
var result = countries.Distinct();

foreach (var v in result)
{
    Console.WriteLine(v);
}
```

```
USA  
usa  
INDIA  
UK
```

**Example 2:** For the comparison to be case-insensitive, use the other overloaded version of Distinct() method to which we can pass a class that implements IEqualityComparer as an argument. In this case we see country USA only once in the output.

```
string[] countries = { "USA", "usa", "INDIA", "UK", "UK" };
var result = countries.Distinct(StringComparer.OrdinalIgnoreCase);

foreach (var v in result)
{
    Console.WriteLine(v);
}
```

```
USA  
INDIA  
UK
```

# Set operators in LINQ

When comparing elements, `Distinct()` works in a slightly different manner with complex types like `Employee`, `Customer` etc.

**Example 3:** Notice that in the output we don't get unique employees. This is because, the default comparer is being used which will just check for object references being equal and not the individual property values.

```
List<Employee> list = new List<Employee>()
{
    new Employee { ID = 101, Name = "Mike" },
    new Employee { ID = 101, Name = "Mike" },
    new Employee { ID = 102, Name = "Mary" }
};

var result = list.Distinct();

foreach (var v in result)
{
    Console.WriteLine(v.ID + "\t" + v.Name);
}
```



# Set operators in LINQ

To solve the problem in Example 3, there are 3 ways

1. Use the other overloaded version of `Distinct()` method to which we can pass a custom class that implements `IEqualityComparer`
2. Override `Equals()` and `GetHashCode()` methods in `Employee` class
3. Project the properties into a new anonymous type, which overrides `Equals()` and `GetHashCode()` methods

**Example 4 : Using the overloaded version of `Distinct()` method to which we can pass a custom class that implements `IEqualityComparer`**

```
// Step 1 : Create a custom class that implements IEqualityComparer<T>
// and implement Equals() and GetHashCode() methods
public class EmployeeComparer : IEqualityComparer<Employee>
{
    public bool Equals(Employee x, Employee y)
    {
        return x.ID == y.ID && x.Name == y.Name;
    }
    public int GetHashCode(Employee obj)
    {
        return obj.ID.GetHashCode() ^ obj.Name.GetHashCode();
    }
}
```

# Set operators in LINQ

**Step 2 : Pass an instance of EmployeeComparer as an argument to Distinct() method**

```
List<Employee> list = new List<Employee>()
{
    new Employee { ID = 101, Name = "Mike" },
    new Employee { ID = 101, Name = "Mike" },
    new Employee { ID = 102, Name = "Mary" }
};

var result = list.Distinct(new EmployeeComparer());

foreach (var v in result)
{
    Console.WriteLine(v.ID + "\t" + v.Name);
}
```



|     |      |
|-----|------|
| 101 | Mike |
| 102 | Mary |

# Set operators in LINQ

**Example 5 : Override Equals() and GetHashCode() methods in Employee class**

```
public class Employee
{
    public int ID { get; set; }
    public string Name { get; set; }

    public override bool Equals(object obj)
    {
        return this.ID == ((Employee)obj).ID && this.Name == ((Employee)obj).Name;
    }

    public override int GetHashCode()
    {
        return this.ID.GetHashCode() ^ this.Name.GetHashCode();
    }
}
```

# Set operators in LINQ

**Example 6 : Project the properties into a new anonymous type, which overrides Equals() and GetHashCode() methods**

```
List<Employee> list = new List<Employee>()
{
    new Employee { ID = 101, Name = "Mike" },
    new Employee { ID = 101, Name = "Mike" },
    new Employee { ID = 102, Name = "Mary" }
};

var result = list.Select(x => new { x.ID, x.Name }).Distinct();

foreach (var v in result)
{
    Console.WriteLine(" " + v.ID + "\t" + v.Name);
}
```



# Additional Resources

## PRAGIM Home Page:

[www.PragimTech.com](http://www.PragimTech.com)

## Resources:

C#, ADO.NET, ASP.NET, SQL Server & MVC youtube Playlists

<http://www.youtube.com/user/kudvenkat/playlists>

Code samples and text version of all the videos on my blog

<http://www.csharp-video-tutorials.blogspot.com>

To receive email alerts when new videos are uploaded, please subscribe to my YOUTUBE channel

[www.YouTube.com/kudvenkat](http://www.YouTube.com/kudvenkat)

10

[Email This](#)

[BlogThis!](#)

[Share to Twitter](#)

[Share to Facebook](#)

[Share to Pinterest](#)

No comments:

Post a Comment

If you like this website, please share with your friends on facebook and Google+ and recommend us on google using the g+1 button on the top right hand corner.

Newer  
Post

Subscribe to: Post Comments (Atom)

Home

Older  
Post

Powered by [Blogger](#).

# Sql server, .net and c# video tutorial

Free C#, .Net and Sql server video tutorial for beginners and intermediate programmers.

[Support us](#) | [.Net Basics](#) | [C#](#) | [SQL](#) | [ASP.NET](#) | [ADO.NET](#) | [MVC](#) | [Slides](#) | [C# Programs](#) | [Subscribe](#) | [Buy DVD](#) |

Part 27 - Union, Intersect and Except operators in LINQ

**PRAGIM**

**TECHNOLOGIES**

Training + Placements

Best software training and placements in marathahalli, bangalore. For further details please call 09945699393.

Complete Tutorials Angular tutorial for beginners

Angular 5 Tutorial for beginners

Important Videos The Gift of Education

Web application for your business

How to become .NET developer

Resources available to help you

## LINQ Tutorial

### Part 27 - Union, Intersect & Except

Venkat

PRAGIM Technologies

[kudvenkat@gmail.com](mailto:kudvenkat@gmail.com)

<http://csharp-video-tutorials.blogspot.com>

PRAGIM Technologies | 9900113931 | [www.pragimtech.com](http://www.pragimtech.com) | [www.facebook.com/pragimtech](https://www.facebook.com/pragimtech)

1

ASP.NET Core What is ASP.NET  
Core | Text | Slides

Dot Net Video Tutorials Angular 6  
Tutorial

Angular CRUD Tutorial

Angular CLI Tutorial

Angular 2 Tutorial

Design Patterns

SOLID Principles

ASP.NET Web API

Bootstrap

AngularJS Tutorial

jQuery Tutorial

JavaScript with ASP.NET Tutorial

JavaScript Tutorial

Charts Tutorial

LINQ

LINQ to SQL

LINQ to XML

Entity Framework

WCF

# In this session we will learn

- Union, Intersect and Except operators in LINQ

## LINQ Tutorial

[Part 24 - Left Outer Join in LINQ](#)

[Part 25 - Cross Join in LINQ](#)

[Part 26 - Set operators in LINQ](#)

**Link to Dot Net Basics, ASP.NET, C#, ADO.NET and SQL Server video series**

<http://www.youtube.com/user/kudvenkat/playlists>

2

PRAGIM Technologies | 9900113931 | [www.pragimtech.com](http://www.pragimtech.com) | [www.facebook.com/pragimtech](http://www.facebook.com/pragimtech)

<http://csharp-video-tutorials.blogspot.com>

ASP.NET Web Services

Dot Net Basics

C#

SQL Server

ADO.NET

ASP.NET

GridView

ASP.NET MVC

Visual Studio Tips and Tricks

Dot Net Interview Questions

Slides Entity Framework

WCF

ASP.NET Web Services

Dot Net Basics

C#

SQL Server

ADO.NET

ASP.NET

GridView

ASP.NET MVC

# Union, Intersect and Except Operators

Dot Net & SQL Server Playlists

<http://www.youtube.com/user/kudvenkat/playlists>

If you are in need of the DVD with all the videos and PPT's, please visit

<http://pragimtech.com/order.aspx>

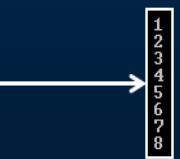
**Union** combines two collections into one collection while removing the duplicate elements.

**Example 1:** numbers1 and numbers2 collections are combined into a single collection. Notice that, the duplicate elements are removed.

```
int[] numbers1 = { 1, 2, 3, 4, 5 };
int[] numbers2 = { 1, 3, 6, 7, 8 };

var result = numbers1.Union(numbers2);

foreach (var v in result)
{
    Console.WriteLine(v);
}
```



PRAGIM Technologies | 9900113931 | [www.pragimtech.com](http://www.pragimtech.com) | [www.facebook.com/pragimtech](http://www.facebook.com/pragimtech)

<http://csharp-video-tutorials.blogspot.com>

3

Visual Studio Tips and Tricks

Java Video Tutorials Part 1 :

Video | Text | Slides

Part 2 : Video | Text | Slides

Part 3 : Video | Text | Slides

Interview Questions C#

SQL Server

Written Test

# Union, Intersect and Except Operators

When comparing elements, just like **Distinct()** method, **Union()**, **Intersect()** and **Except()** methods work in a slightly different manner with complex types like **Employee**, **Customer** etc.

**Example 2 :** Notice that in the output the **duplicate employee objects are not removed**. This is because, the default comparer is being used which will just check for object references being equal and not the individual property values.

```
List<Employee> list1 = new List<Employee>()
{
    new Employee { ID = 101, Name = "Mike"},
    new Employee { ID = 102, Name = "Susy"},
    new Employee { ID = 103, Name = "Mary"}
};

List<Employee> list2 = new List<Employee>()
{
    new Employee { ID = 101, Name = "Mike"},
    new Employee { ID = 104, Name = "John"}
};

var result = list1.Union(list2);

foreach (var v in result)
{
    Console.WriteLine(v.ID + "\t" + v.Name);
}
```



|     |      |
|-----|------|
| 101 | Mike |
| 102 | Susy |
| 103 | Mary |
| 101 | Mike |
| 104 | John |

# Union, Intersect and Except Operators

**Example 3 : To solve the problem in Example 2, there are 3 ways**

**1. Use the other overloaded version of Union() method to which we can pass a custom class that implements IEqualityComparer**

**2. Override Equals() and GetHashCode() methods in Employee class**

**3. Project the properties into a new anonymous type, which overrides Equals() and GetHashCode() methods**

**Project the properties into a new anonymous type, which overrides Equals() and GetHashCode() methods**

```
var result = list1.Select(x => new { x.ID, x.Name })
                  .Union(list2.Select(x => new { x.ID, x.Name }));  
  
foreach (var v in result)
{
    Console.WriteLine(v.ID + "\t" + v.Name);
}
```



|     |      |
|-----|------|
| 101 | Mike |
| 102 | Susy |
| 103 | Mary |
| 104 | John |

# Union, Intersect and Except Operators

Intersect() returns the common elements between the 2 collections

**Example 4 :** Return common elements in numbers1 and numbers2 collections.

```
int[] numbers1 = { 1, 2, 3, 4, 5 };
int[] numbers2 = { 1, 3, 6, 7, 8 };

var result = numbers1.Intersect(numbers2);

foreach (var v in result)
{
    Console.WriteLine(v);
}
```



1  
3

Except() returns the elements that are present in the first collection but not in the second collection.

**Example 5:** Return the elements that are present in the first collection but not in the second collection.

```
var result = numbers1.Except(numbers2);
```



2  
4  
5

# Additional Resources

## PRAGIM Home Page:

[www.PragimTech.com](http://www.PragimTech.com)

## Resources:

C#, ADO.NET, ASP.NET, SQL Server & MVC youtube Playlists

<http://www.youtube.com/user/kudvenkat/playlists>

Code samples and text version of all the videos on my blog

<http://www.csharp-video-tutorials.blogspot.com>

To receive email alerts when new videos are uploaded, please subscribe to my YOUTUBE channel

[www.YouTube.com/kudvenkat](http://www.YouTube.com/kudvenkat)

7

[Email This](#)

[BlogThis!](#)

[Share to Twitter](#)

[Share to Facebook](#)

[Share to Pinterest](#)

No comments:

Post a Comment

If you like this website, please share with your friends on facebook and Google+ and recommend us on google using the g+1 button on the top right hand corner.

Newer  
Post

Subscribe to: Post Comments (Atom)

Home

Older  
Post

Powered by [Blogger](#).

# Sql server, .net and c# video tutorial

Free C#, .Net and Sql server video tutorial for beginners and intermediate programmers.

[Support us](#) | [.Net Basics](#) | [C#](#) | [SQL](#) | [ASP.NET](#) | [ADO.NET](#) | [MVC](#) | [Slides](#) | [C# Programs](#) | [Subscribe](#) | [Buy DVD](#) |

Part 28 - Generation Operators in LINQ

**PRAGIM**

**TECHNOLOGIES**

Training + Placements

Best software training and placements in marathahalli, bangalore. For further details please call 09945699393.

Complete Tutorials Angular tutorial for beginners

Angular 5 Tutorial for beginners

Important Videos The Gift of Education

Web application for your business

How to become .NET developer

Resources available to help you

## LINQ Tutorial

### Part 28 - Generation Operators

Venkat

PRAGIM Technologies

[kudvenkat@gmail.com](mailto:kudvenkat@gmail.com)

<http://csharp-video-tutorials.blogspot.com>

PRAGIM Technologies | 9900113931 | [www.pragimtech.com](http://www.pragimtech.com) | [www.facebook.com/pragimtech](https://www.facebook.com/pragimtech)

1

ASP.NET Core What is ASP.NET  
Core | Text | Slides

Dot Net Video Tutorials Angular 6  
Tutorial

Angular CRUD Tutorial

Angular CLI Tutorial

Angular 2 Tutorial

Design Patterns

SOLID Principles

ASP.NET Web API

Bootstrap

AngularJS Tutorial

jQuery Tutorial

JavaScript with ASP.NET Tutorial

JavaScript Tutorial

Charts Tutorial

LINQ

LINQ to SQL

LINQ to XML

Entity Framework

WCF

# In this session we will learn

- Generation Operators in LINQ

## LINQ Tutorial

**Part 25 - Cross Join in LINQ**

**Part 26 - Set operators in LINQ**

**Part 27 - Union, Intersect and Except operators in LINQ**

**Link to Dot Net Basics, ASP.NET, C#, ADO.NET and SQL Server video series**

<http://www.youtube.com/user/kudvenkat/playlists>

2

PRAGIM Technologies | 9900113931 | [www.pragimtech.com](http://www.pragimtech.com) | [www.facebook.com/pragimtech](http://www.facebook.com/pragimtech)

<http://csharp-video-tutorials.blogspot.com>

ASP.NET Web Services

Dot Net Basics

C#

SQL Server

ADO.NET

ASP.NET

GridView

ASP.NET MVC

Visual Studio Tips and Tricks

Dot Net Interview Questions

Slides Entity Framework

WCF

ASP.NET Web Services

Dot Net Basics

C#

SQL Server

ADO.NET

ASP.NET

GridView

ASP.NET MVC

# Generation Operators in LINQ

Dot Net & SQL Server Playlists

<http://www.youtube.com/user/kudvenkat/playlists>

If you are in need of the DVD with all the videos and PPT's, please visit  
<http://pragimtech.com/order.aspx>

## Generation Operators

Range Repeat Empty

Range operator generates a sequence of integers within a specified range. This method has 2 integer parameters. The start parameter specifies the integer to start with and the count parameter specifies the number of sequential integers to generate.

```
// Without LINQ
for (int i = 1; i <= 10; i++)
{
    if (i % 2 == 0)
    {
        Console.WriteLine(i);
    }
}
```

```
// With LINQ
var evenNumbers = Enumerable
    .Range(1, 10)
    .Where(x => x % 2 == 0);

foreach (int i in evenNumbers)
{
    Console.WriteLine(i);
}
```



3

PRAGIM Technologies | 9900113931 | [www.pragimtech.com](http://www.pragimtech.com) | [www.facebook.com/pragimtech](http://www.facebook.com/pragimtech)

<http://csharp-video-tutorials.blogspot.com>

Visual Studio Tips and Tricks

Java Video Tutorials Part 1 :  
Video | Text | Slides

Part 2 : Video | Text | Slides

Part 3 : Video | Text | Slides

Interview Questions C#

SQL Server

Written Test

# Generation Operators in LINQ

Repeat operator is used to generate a sequence that contains one repeated value

For example the following code returns a string sequence that contains 5 "Hello" string objects in it

```
var result = Enumerable.Repeat("Hello", 5);  
  
foreach (var v in result)  
{  
    Console.WriteLine(v);  
}
```



Empty operator returns an empty sequence of the specified type.

For example

|                            |                                      |
|----------------------------|--------------------------------------|
| Enumerable.Empty<int>()    | Returns an empty IEnumerable<int>    |
| Enumerable.Empty<string>() | Returns an empty IEnumerable<string> |

# Generation Operators in LINQ

Here we are using **NULL-COALEScing** operator that checks if the **GetIntegerSequence()** method returns **NULL**, in which case the result variable is initialized with an empty **IEnumerable<int>**

```
class Program
{
    public static void Main()
    {
        IEnumerable<int> result = GetIntegerSequence() ?? Enumerable.Empty<int>();

        foreach (var v in result)
        {
            Console.WriteLine(v);
        }
    }

    private static IEnumerable<int> GetIntegerSequence()
    {
        return null;
    }
}
```

# Additional Resources

## PRAGIM Home Page:

[www.PragimTech.com](http://www.PragimTech.com)

## Resources:

C#, ADO.NET, ASP.NET, SQL Server & MVC youtube Playlists

<http://www.youtube.com/user/kudvenkat/playlists>

Code samples and text version of all the videos on my blog

<http://www.csharp-video-tutorials.blogspot.com>

To receive email alerts when new videos are uploaded, please subscribe to my YOUTUBE channel

[www.YouTube.com/kudvenkat](http://www.YouTube.com/kudvenkat)

6

[Email This](#)

[BlogThis!](#)

[Share to Twitter](#)

[Share to Facebook](#)

[Share to Pinterest](#)

No comments:

Post a Comment

If you like this website, please share with your friends on facebook and Google+ and recommend us on google using the g+1 button on the top right hand corner.

Newer  
Post

Subscribe to: Post Comments (Atom)

[Home](#)

Older  
Post

Powered by [Blogger](#).

# Sql server, .net and c# video tutorial

Free C#, .Net and Sql server video tutorial for beginners and intermediate programmers.

[Support us](#) | [.Net Basics](#) | [C#](#) | [SQL](#) | [ASP.NET](#) | [ADO.NET](#) | [MVC](#) | [Slides](#) | [C# Programs](#) | [Subscribe](#) | [Buy DVD](#) |

Part 29 - Concat operator in LINQ

**PRAGIM**

**TECHNOLOGIES**

Training + Placements

Best software training and placements in marathahalli, bangalore. For further details please call 09945699393.

Complete Tutorials Angular tutorial for beginners

Angular 5 Tutorial for beginners

Important Videos The Gift of Education

Web application for your business

How to become .NET developer

Resources available to help you

# LINQ Tutorial

## Part 29 - Concat Operator

Venkat

PRAGIM Technologies

[kudvenkat@gmail.com](mailto:kudvenkat@gmail.com)

<http://csharp-video-tutorials.blogspot.com>

PRAGIM Technologies | 9900113931 | [www.pragimtech.com](http://www.pragimtech.com) | [www.facebook.com/pragimtech](https://www.facebook.com/pragimtech)

1

ASP.NET Core What is ASP.NET  
Core | Text | Slides

Dot Net Video Tutorials Angular 6  
Tutorial

Angular CRUD Tutorial

Angular CLI Tutorial

Angular 2 Tutorial

Design Patterns

SOLID Principles

ASP.NET Web API

Bootstrap

AngularJS Tutorial

jQuery Tutorial

JavaScript with ASP.NET Tutorial

JavaScript Tutorial

Charts Tutorial

LINQ

LINQ to SQL

LINQ to XML

Entity Framework

WCF

# In this session we will learn

- The use of Concat operator
- Difference between Concat and Union operators

## LINQ Tutorial

**Part 26 - Set operators in LINQ**

**Part 27 - Union, Intersect and Except operators in LINQ**

**Part 28 - Generation Operators in LINQ**

**Link to Dot Net Basics, ASP.NET, C#, ADO.NET and SQL Server video series**

<http://www.youtube.com/user/kudvenkat/playlists>

2

PRAGIM Technologies | 9900113931 | [www.pragimtech.com](http://www.pragimtech.com) | [www.facebook.com/pragimtech](http://www.facebook.com/pragimtech)

<http://csharp-video-tutorials.blogspot.com>

ASP.NET Web Services

Dot Net Basics

C#

SQL Server

ADO.NET

ASP.NET

GridView

ASP.NET MVC

Visual Studio Tips and Tricks

Dot Net Interview Questions

Slides Entity Framework

WCF

ASP.NET Web Services

Dot Net Basics

C#

SQL Server

ADO.NET

ASP.NET

GridView

ASP.NET MVC

# Concat operator in LINQ

Dot Net & SQL Server Playlists

<http://www.youtube.com/user/kudvenkat/playlists>

If you are in need of the DVD with all the videos and PPT's, please visit  
<http://pragimtech.com/order.aspx>

Concat operator concatenates two sequences into one sequence.

Concatenates both the integer sequences (numbers1 & numbers2) into one integer sequence. Notice that the duplicate elements ARE NOT REMOVED.

```
int[] numbers1 = { 1, 2, 3 };
int[] numbers2 = { 1, 4, 5 };

var result = numbers1.Concat(numbers2);

foreach (var v in result)
{
    Console.WriteLine(v);
}
```



3

PRAGIM Technologies | 9900113931 | [www.pragimtech.com](http://www.pragimtech.com) | [www.facebook.com/pragimtech](http://www.facebook.com/pragimtech)

<http://csharp-video-tutorials.blogspot.com>

Visual Studio Tips and Tricks

Java Video Tutorials Part 1 :  
Video | Text | Slides

Part 2 : Video | Text | Slides

Part 3 : Video | Text | Slides

Interview Questions C#

SQL Server

Written Test

# Concat operator in LINQ

Just like Concat operator, Union operator also combines the 2 integer sequences (numbers1 & numbers2) into one integer sequence, but notice that the duplicate elements ARE REMOVED.

```
int[] numbers1 = { 1, 2, 3 };
int[] numbers2 = { 1, 4, 5 };

var result = numbers1.Union(numbers2);

foreach (var v in result)
{
    Console.WriteLine(v);
}
```



**What is the difference between Concat and Union operators?**

Concat operator combines 2 sequences into 1 sequence. Duplicate elements are not removed. It simply returns the items from the first sequence followed by the items from the second sequence.

Union operator also combines 2 sequences into 1 sequence, but will remove the duplicate elements.

# Additional Resources

## PRAGIM Home Page:

[www.PragimTech.com](http://www.PragimTech.com)

## Resources:

C#, ADO.NET, ASP.NET, SQL Server & MVC youtube Playlists

<http://www.youtube.com/user/kudvenkat/playlists>

Code samples and text version of all the videos on my blog

<http://www.csharp-video-tutorials.blogspot.com>

To receive email alerts when new videos are uploaded, please subscribe to my YOUTUBE channel

[www.YouTube.com/kudvenkat](http://www.YouTube.com/kudvenkat)

5

[Email This](#)

[BlogThis!](#)

[Share to Twitter](#)

[Share to Facebook](#)

[Share to Pinterest](#)

No comments:

Post a Comment

If you like this website, please share with your friends on facebook and Google+ and recommend us on google using the g+1 button on the top right hand corner.

Newer  
Post

Subscribe to: Post Comments (Atom)

[Home](#)

Older  
Post

Powered by [Blogger](#).

# Sql server, .net and c# video tutorial

Free C#, .Net and Sql server video tutorial for beginners and intermediate programmers.

[Support us](#) | [.Net Basics](#) | [C#](#) | [SQL](#) | [ASP.NET](#) | [ADO.NET](#) | [MVC](#) | [Slides](#) | [C# Programs](#) | [Subscribe](#) | [Buy DVD](#) |

Part 30 - SequenceEqual Operator in LINQ

**PRAGIM**

**TECHNOLOGIES**

Training + Placements

Best software training and placements in marathahalli, bangalore. For further details please call 09945699393.

Complete Tutorials Angular tutorial for beginners

Angular 5 Tutorial for beginners

Important Videos The Gift of Education

Web application for your business

How to become .NET developer

Resources available to help you

# LINQ Tutorial

## Part 30 - SequenceEqual Operator

Venkat

PRAGIM Technologies

[kudvenkat@gmail.com](mailto:kudvenkat@gmail.com)

<http://csharp-video-tutorials.blogspot.com>

PRAGIM Technologies | 9900113931 | [www.pragimtech.com](http://www.pragimtech.com) | [www.facebook.com/pragimtech](https://www.facebook.com/pragimtech)

1

ASP.NET Core What is ASP.NET  
Core | Text | Slides

Dot Net Video Tutorials Angular 6  
Tutorial

Angular CRUD Tutorial

Angular CLI Tutorial

Angular 2 Tutorial

Design Patterns

SOLID Principles

ASP.NET Web API

Bootstrap

AngularJS Tutorial

jQuery Tutorial

JavaScript with ASP.NET Tutorial

JavaScript Tutorial

Charts Tutorial

LINQ

LINQ to SQL

LINQ to XML

Entity Framework

WCF

# In this session we will learn

- SequenceEqual Operator in LINQ

## LINQ Tutorial

[Part 27 - Union, Intersect and Except operators in LINQ](#)

[Part 28 - Generation Operators in LINQ](#)

[Part 29 - Concat operator in LINQ](#)

**Link to Dot Net Basics, ASP.NET, C#, ADO.NET and SQL Server video series**

<http://www.youtube.com/user/kudvenkat/playlists>

2

PRAGIM Technologies | 9900113931 | [www.pragimtech.com](http://www.pragimtech.com) | [www.facebook.com/pragimtech](http://www.facebook.com/pragimtech)

<http://csharp-video-tutorials.blogspot.com>

ASP.NET Web Services

Dot Net Basics

C#

SQL Server

ADO.NET

ASP.NET

GridView

ASP.NET MVC

Visual Studio Tips and Tricks

Dot Net Interview Questions

Slides Entity Framework

WCF

ASP.NET Web Services

Dot Net Basics

C#

SQL Server

ADO.NET

ASP.NET

GridView

ASP.NET MVC

# SequenceEqual Operator in LINQ

Dot Net & SQL Server Playlists

<http://www.youtube.com/user/kudvenkat/playlists>

If you are in need of the DVD with all the videos and PPT's, please visit  
<http://pragimtech.com/order.aspx>

**SequenceEqual()** method is used to determine whether two sequences are equal. This method returns true if the sequences are equal otherwise false.

**For 2 sequences to be equal**

1. Both the sequences should have same number of elements and
2. Same values should be present in the same order in both the sequences

**Example 1 : SequenceEqual() returns true**

```
string[] countries1 = { "USA", "India", "UK" };
string[] countries2 = { "USA", "India", "UK" };

var result = countries1.SequenceEqual(countries2);

Console.WriteLine("Are Equal = " + result);
```

3

PRAGIM Technologies | 9900113931 | [www.pragimtech.com](http://www.pragimtech.com) | [www.facebook.com/pragimtech](http://www.facebook.com/pragimtech)

<http://csharp-video-tutorials.blogspot.com>

Visual Studio Tips and Tricks

Java Video Tutorials Part 1 :  
Video | Text | Slides

Part 2 : [Video](#) | [Text](#) | [Slides](#)

Part 3 : [Video](#) | [Text](#) | [Slides](#)

Interview Questions C#

SQL Server

Written Test

# SequenceEqual Operator in LINQ

**Example 2 :** SequenceEqual() returns false, as the default comparison is case sensitive

```
string[] countries1 = { "USA", "INDIA", "UK" };
string[] countries2 = { "usa", "india", "uk" };

var result = countries1.SequenceEqual(countries2);

Console.WriteLine("Are Equal = " + result);
```

**Example 3:** If we want the comparison to be case insensitive, then use the other overloaded version of SequenceEqual() method to which we can pass an alternate comparer

```
string[] countries1 = { "USA", "INDIA", "UK" };
string[] countries2 = { "usa", "india", "uk" };

var result = countries1.SequenceEqual(countries2, StringComparison.OrdinalIgnoreCase);

Console.WriteLine("Are Equal = " + result);
```

# SequenceEqual Operator in LINQ

**Example 4 :** SequenceEqual() returns false. This is because, although both the sequences contain same data, the data is not present in the same order

```
string[] countries1 = { "USA", "INDIA", "UK" };
string[] countries2 = { "UK", "INDIA", "USA" };

var result = countries1.SequenceEqual(countries2);

Console.WriteLine("Are Equal = " + result);
```

**Example 5 :** To fix the problem in Example 4, use OrderBy() to sort data in the source sequences

```
string[] countries1 = { "USA", "INDIA", "UK" };
string[] countries2 = { "UK", "INDIA", "USA" };

var result = countries1.OrderBy(c => c).SequenceEqual(countries2.OrderBy(c => c));

Console.WriteLine("Are Equal = " + result);
```

# SequenceEqual Operator in LINQ

**Example 6 :** When comparing complex types, the default comparer will only check if the object references are equal. So, in this case SequenceEqual() returns false.

```
List<Employee> list1 = new List<Employee>()
{
    new Employee { ID = 101, Name = "Mike" },
    new Employee { ID = 102, Name = "Susy" },
};

List<Employee> list2 = new List<Employee>()
{
    new Employee { ID = 101, Name = "Mike" },
    new Employee { ID = 102, Name = "Susy" },
};

var result = list1.SequenceEqual(list2);

Console.WriteLine("Are Equal = " + result);
```

## Three ways to fix

1. Use the other overloaded version of SequenceEqual() method to which we can pass a custom class that implements **IEqualityComparer**
2. Override **Equals()** and **GetHashCode()** methods in **Employee** class
3. Project the properties into a new anonymous type, which overrides **Equals()** and **GetHashCode()** methods

We discussed implementing these 3 options for **Distinct()** method in Part 26 of **LINQ Tutorial**. In the same way these options can be implemented for **SequenceEqual()** method

# Additional Resources

## PRAGIM Home Page:

[www.PragimTech.com](http://www.PragimTech.com)

## Resources:

C#, ADO.NET, ASP.NET, SQL Server & MVC youtube Playlists

<http://www.youtube.com/user/kudvenkat/playlists>

Code samples and text version of all the videos on my blog

<http://www.csharp-video-tutorials.blogspot.com>

To receive email alerts when new videos are uploaded, please subscribe to my YOUTUBE channel

[www.YouTube.com/kudvenkat](http://www.YouTube.com/kudvenkat)

7

[Email This](#)

[BlogThis!](#)

[Share to Twitter](#)

[Share to Facebook](#)

[Share to Pinterest](#)

No comments:

Post a Comment

If you like this website, please share with your friends on facebook and Google+ and recommend us on google using the g+1 button on the top right hand corner.

Newer  
Post

Subscribe to: Post Comments (Atom)

[Home](#)

Older  
Post

Powered by [Blogger](#).

# Sql server, .net and c# video tutorial

Free C#, .Net and Sql server video tutorial for beginners and intermediate programmers.

[Support us](#) | [.Net Basics](#) | [C#](#) | [SQL](#) | [ASP.NET](#) | [ADO.NET](#) | [MVC](#) | [Slides](#) | [C# Programs](#) | [Subscribe](#) | [Buy DVD](#) |

Part 31 - Quantifiers in LINQ

**PRAGIM**

**TECHNOLOGIES**

Training + Placements

Best software training and placements in marathahalli, bangalore. For further details please call 09945699393.

Complete Tutorials Angular tutorial for beginners

Angular 5 Tutorial for beginners

Important Videos The Gift of Education

Web application for your business

How to become .NET developer

Resources available to help you

# LINQ Tutorial

## Part 31 - Quantifiers in LINQ

Venkat

PRAGIM Technologies

[kudvenkat@gmail.com](mailto:kudvenkat@gmail.com)

<http://csharp-video-tutorials.blogspot.com>

PRAGIM Technologies | 9900113931 | [www.pragimtech.com](http://www.pragimtech.com) | [www.facebook.com/pragimtech](https://www.facebook.com/pragimtech)

1

ASP.NET Core What is ASP.NET  
Core | Text | Slides

Dot Net Video Tutorials Angular 6  
Tutorial

Angular CRUD Tutorial

Angular CLI Tutorial

Angular 2 Tutorial

Design Patterns

SOLID Principles

ASP.NET Web API

Bootstrap

AngularJS Tutorial

jQuery Tutorial

JavaScript with ASP.NET Tutorial

JavaScript Tutorial

Charts Tutorial

LINQ

LINQ to SQL

LINQ to XML

Entity Framework

WCF

# In this session we will learn

- Quantifiers in LINQ

## LINQ Tutorial

[Part 28 - Generation Operators in LINQ](#)

[Part 29 - Concat operator in LINQ](#)

[Part 30 - SequenceEqual Operator in LINQ](#)

**Link to Dot Net Basics, ASP.NET, C#, ADO.NET and SQL Server video series**

<http://www.youtube.com/user/kudvenkat/playlists>

2

PRAGIM Technologies | 9900113931 | [www.pragimtech.com](http://www.pragimtech.com) | [www.facebook.com/pragimtech](http://www.facebook.com/pragimtech)

<http://csharp-video-tutorials.blogspot.com>

ASP.NET Web Services

Dot Net Basics

C#

SQL Server

ADO.NET

ASP.NET

GridView

ASP.NET MVC

Visual Studio Tips and Tricks

Dot Net Interview Questions

Slides Entity Framework

WCF

ASP.NET Web Services

Dot Net Basics

C#

SQL Server

ADO.NET

ASP.NET

GridView

ASP.NET MVC

# Quantifiers in LINQ

Dot Net & SQL Server Playlists

<http://www.youtube.com/user/kudvenkat/playlists>

If you are in need of the DVD with all the videos and PPT's, please visit

<http://pragimtech.com/order.aspx>

Quantifiers return true or false depending on whether if some or all of the elements in a sequence satisfy a condition.

All

Any

Contains

**All()** method returns true if all the elements in a sequence satisfy a given condition, otherwise false

**Example 1 : Returns true, as all the numbers are less than 10**

```
int[] numbers = { 1, 2, 3, 4, 5 };

var result = numbers.All(x => x < 10);

Console.WriteLine(result);
```

3

PRAGIM Technologies | 9900113931 | [www.pragimtech.com](http://www.pragimtech.com) | [www.facebook.com/pragimtech](http://www.facebook.com/pragimtech)

<http://csharp-video-tutorials.blogspot.com>

Visual Studio Tips and Tricks

Java Video Tutorials Part 1 :

Video | Text | Slides

Part 2 : Video | Text | Slides

Part 3 : Video | Text | Slides

Interview Questions C#

SQL Server

Written Test

# Quantifiers in LINQ

**There are 2 overloaded versions of Any() method.** The version without any parameters checks if the sequence contains at least one element. The other version with a predicate parameter checks if the sequence contains at least one element that satisfies a given condition.

**Example 2 :** Returns true as the sequence contains at least one element

```
int[] numbers = { 1, 2, 3, 4, 5 };

var result = numbers.Any();

Console.WriteLine(result);
```

**Example 3 :** Returns false as the sequence does not contain any element that satisfies the given condition (No element in the sequence is greater than 10)

```
int[] numbers = { 1, 2, 3, 4, 5 };

var result = numbers.Any(x => x > 10);

Console.WriteLine(result);
```

# Quantifiers in LINQ

There are 2 overloaded versions of the Contains() method. One of the overloaded version checks if the sequence contains a specified element using the default equality comparer. The other overloaded version checks if the sequence contains a specified element using an alternate equality comparer

**Example 4 :** Returns true as the sequence contains number 3. In this case the default equality comparer is used.

```
int[] numbers = { 1, 2, 3, 4, 5 };

var result = numbers.Contains(3);

Console.WriteLine(result);
```

**Example 5 :** Returns true. In this case we are using an alternate equality comparer (StringComparer) for the comparison to be case-insensitive

```
string[] countries = { "USA", "INDIA", "UK" };

var result = countries.Contains("india", StringComparison.OrdinalIgnoreCase);

Console.WriteLine(result);
```

# Quantifiers in LINQ

When comparing complex types like Employee, Customer etc, the default comparer will only check if the object references are equal, and not the individual property values of the objects that are being compared.

**Example 6 :** Returns false, as the default comparer will only check if the object references are equal.

```
List<Employee> employees = new List<Employee>()
{
    new Employee { ID = 101, Name = "Rosy" },
    new Employee { ID = 102, Name = "Susy" }
};

var result = employees.Contains(new Employee { ID = 101, Name = "Rosy" });

Console.WriteLine(result);
```

# Quantifiers in LINQ

To solve the problem in Example 6, there are 3 ways

1. Use the other overloaded version of Contains() method to which we can pass a custom class that implements IEqualityComparer
2. Override Equals() and GetHashCode() methods in Employee class
3. Project the properties into a new anonymous type, which overrides Equals() and GetHashCode() methods

We discussed implementing these 3 options for Distinct() method in Part 26 of LINQ Tutorial. In the same way these options can be implemented for Contains() method.

# Additional Resources

## PRAGIM Home Page:

[www.PragimTech.com](http://www.PragimTech.com)

## Resources:

C#, ADO.NET, ASP.NET, SQL Server & MVC youtube Playlists

<http://www.youtube.com/user/kudvenkat/playlists>

Code samples and text version of all the videos on my blog

<http://www.csharp-video-tutorials.blogspot.com>

To receive email alerts when new videos are uploaded, please subscribe to my YOUTUBE channel

[www.YouTube.com/kudvenkat](http://www.YouTube.com/kudvenkat)

8

[Email This](#)

[BlogThis!](#)

[Share to Twitter](#)

[Share to Facebook](#)

[Share to Pinterest](#)

No comments:

Post a Comment

If you like this website, please share with your friends on facebook and Google+ and recommend us on google using the g+1 button on the top right hand corner.

Newer  
Post

Subscribe to: Post Comments (Atom)

[Home](#)

Older  
Post

Powered by [Blogger](#).

# Sql server, .net and c# video tutorial

Free C#, .Net and Sql server video tutorial for beginners and intermediate programmers.

[Support us](#) | [.Net Basics](#) | [C#](#) | [SQL](#) | [ASP.NET](#) | [ADO.NET](#) | [MVC](#) | [Slides](#) | [C# Programs](#) | [Subscribe](#) | [Buy DVD](#) |

Part 32 - LinqPad Tutorial

**PRAGIM**  
**TECHNOLOGIES**  
Training + Placements

Best software training and placements in marathahalli, bangalore. For further details please call 09945699393.

Complete Tutorials Angular tutorial for beginners

Angular 5 Tutorial for beginners

Important Videos The Gift of Education

Web application for your business

How to become .NET developer

Resources available to help you

# LINQ Tutorial

## Part 32 - LinqPad

Venkat

PRAGIM Technologies

[kudvenkat@gmail.com](mailto:kudvenkat@gmail.com)

<http://csharp-video-tutorials.blogspot.com>

PRAGIM Technologies | 9900113931 | [www.pragimtech.com](http://www.pragimtech.com) | [www.facebook.com/pragimtech](https://www.facebook.com/pragimtech)

1

ASP.NET Core What is ASP.NET  
Core | Text | Slides

Dot Net Video Tutorials Angular 6  
Tutorial

Angular CRUD Tutorial

Angular CLI Tutorial

Angular 2 Tutorial

Design Patterns

SOLID Principles

ASP.NET Web API

Bootstrap

AngularJS Tutorial

jQuery Tutorial

JavaScript with ASP.NET Tutorial

JavaScript Tutorial

Charts Tutorial

LINQ

LINQ to SQL

LINQ to XML

Entity Framework

WCF

# In this session we will learn

- LinqPad

## LINQ Tutorial

Part 29 - Concat operator in LINQ

Part 30 - SequenceEqual Operator in LINQ

Part 31 - Quantifiers in LINQ

Link to Dot Net Basics, ASP.NET, C#, ADO.NET and SQL Server video series

<http://www.youtube.com/user/kudvenkat/playlists>

2

PRAGIM Technologies | 9900113931 | [www.pragimtech.com](http://www.pragimtech.com) | [www.facebook.com/pragimtech](http://www.facebook.com/pragimtech)

<http://csharp-video-tutorials.blogspot.com>

ASP.NET Web Services

Dot Net Basics

C#

SQL Server

ADO.NET

ASP.NET

GridView

ASP.NET MVC

Visual Studio Tips and Tricks

Dot Net Interview Questions

Slides Entity Framework

WCF

ASP.NET Web Services

Dot Net Basics

C#

SQL Server

ADO.NET

ASP.NET

GridView

ASP.NET MVC

# LinqPad Tutorial

Dot Net & SQL Server Playlists

<http://www.youtube.com/user/kudvenkat/playlists>

If you are in need of the DVD with all the videos and PPT's, please visit

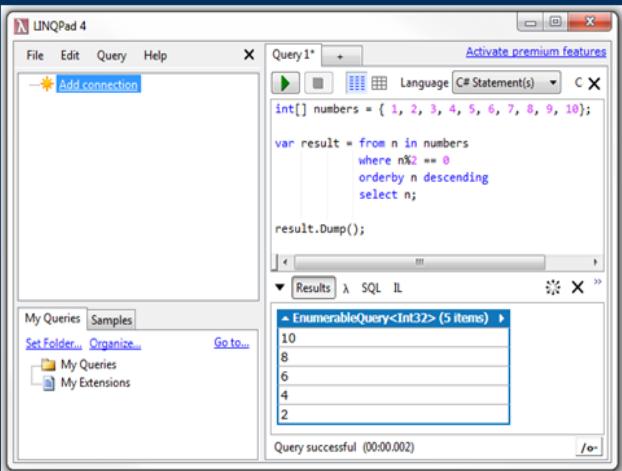
<http://pragimtech.com/order.aspx>

## What is LinqPad

LinqPad is a free tool that you can download from <http://www.linqpad.net>

It helps learn, write and test LINQ Queries

Dump() method is similar to Console.WriteLine() in a console application.



The screenshot shows the LinqPad 4 interface. In the main window, there is a code editor with the following C# statement:

```
int[] numbers = { 1, 2, 3, 4, 5, 6, 7, 8, 9, 10};  
  
var result = from n in numbers  
             where n%2 == 0  
             orderby n descending  
             select n;  
  
result.Dump();
```

Below the code editor is a results pane titled "Results". It displays the output of the query as an "EnumerableQuery<Int32> (5 items)" list:

|    |
|----|
| 10 |
| 8  |
| 6  |
| 4  |
| 2  |

At the bottom of the results pane, it says "Query successful (00:00:002)".

3

PRAGIM Technologies | 9900113931 | [www.pragimtech.com](http://www.pragimtech.com) | [www.facebook.com/pragimtech](http://www.facebook.com/pragimtech)

<http://csharp-video-tutorials.blogspot.com>

Visual Studio Tips and Tricks

Java Video Tutorials Part 1 :  
Video | Text | Slides

Part 2 : Video | Text | Slides

Part 3 : Video | Text | Slides

Interview Questions C#

SQL Server

Written Test

# Additional Resources

## PRAGIM Home Page:

[www.PragimTech.com](http://www.PragimTech.com)

## Resources:

C#, ADO.NET, ASP.NET, SQL Server & MVC youtube Playlists

<http://www.youtube.com/user/kudvenkat/playlists>

Code samples and text version of all the videos on my blog

<http://www.csharp-video-tutorials.blogspot.com>

To receive email alerts when new videos are uploaded, please subscribe to my YOUTUBE channel

[www.YouTube.com/kudvenkat](http://www.YouTube.com/kudvenkat)

4

[Email This](#)

[BlogThis!](#)

[Share to Twitter](#)

[Share to Facebook](#)

[Share to Pinterest](#)

No comments:

Post a Comment

If you like this website, please share with your friends on facebook and Google+ and recommend us on google using the g+1 button on the top right hand corner.

Newer  
Post

Subscribe to: Post Comments (Atom)

Home

Older  
Post

Powered by [Blogger](#).