

HARD LINQ

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GroupJoin vs. Join

Id	Name
1	Peter
2	Paľo
3	Milan

IdParent	Kid
1	Janka
2	Šimon
1	Janko
2	Danka
2	Jerguš

GroupJoin vs. Join

Join

Parent	Kid
Peter	Janka
Peter	Janko
Paľo	Šimon
Paľo	Danka
Paľo	Jerguš

Inner join v SQL

GroupJoin

Parent	Kids
Peter	[Janka, Janko]
Paľo	[Šimon, Danka, Jerguš]
Milan	[]

Outer join v SQL

GroupJoin syntax

query

```
from parent in Parents
join kid in Children on parent.Id equals kid.IdParent into k
select new { Parent = parent.Name, Kids = k };
```

lambda

```
Parents.GroupJoin(kids, p => p.Id, k => k.IdParent,
    (p, k) => new
    {
        Parent = p.Name,
        Kids = k
    });
```

SelectMany vs Select

Students
[Miro, Martin, Matúš]
[Lukáš, Leopold, Ludwig]

Schools.Select(s => s.Students);

[[Miro, Martin, Matúš], [Lukáš, Leopold, Ludwig]]

Schools.SelectMany(s => s.Students);

[Miro, Martin, Matúš, Lukáš, Leopold, Ludwig]

Aggregate

- Vykoná operáciu na každom prvku kolekcie s tým, že si uchováva medzivýsledok
- Podobné fold funkciám z Haskellu

```
//Example1
```

```
int[] nums = new[] { 1, 2, 3, 4, 5 };  
var mult = nums.Aggregate((result, cur) => r * cur);  
//((((1 * 2) * 3) * 4) * 5)
```

```
//Example2
```

```
var multt = nums.Aggregate(2, (result, cur) => r * cur);  
//((((2 * 1) * 2) * 3) * 4) * 5)
```

```
//Example3
```

```
var res = nums.Aggregate(0, (result, cur) => r + cur,  
                             result => (decimal)result / nums.Count);  
//((((0 + 1) + 2) + 3) + 4) + 5) / 5
```