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Category Theory for .NET Developers

Understanding Functors in C# and F#

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Why Function Matter

You're already using them in C# — LINQ Select is a functor!

Familiar C# Code

```
numbers.Select(x => x * 2)
```



```
items.Select(MapFunction)
```



You write this daily!

implements

Functor

map function

implements

generalizes to

Category Theory

$$F: A \rightarrow B$$

map

$g \circ f$

{morphism}

Abstract concept

Key Point: Function preserve structure while transforming data