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TPL Dataflow

Pär Nordström, Valtech

Frågor?

Tar vi på en gång…
På slutet…
Eller senare

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Valtech Tech Day 2010...

```
let isPrime (n:int) =
   let bound = int (System.Math.Sqrt(float n))
   seq {2 .. bound} |> Seq.exists (fun x -> n % x = 0) |> not

let primeAsync n =
    async { return (n, isPrime n) }

let primes m n =
    seq {m .. n}
        |> Seq.map primeAsync
        |> Async.Parallel
        |> Async.RunSynchronously
        |> Array.filter snd
        |> Array.map fst

primes 0 1000 |> Array.iter  (printfn "%d")
```

”F# har stora fördelar vid asynkrona flöden”

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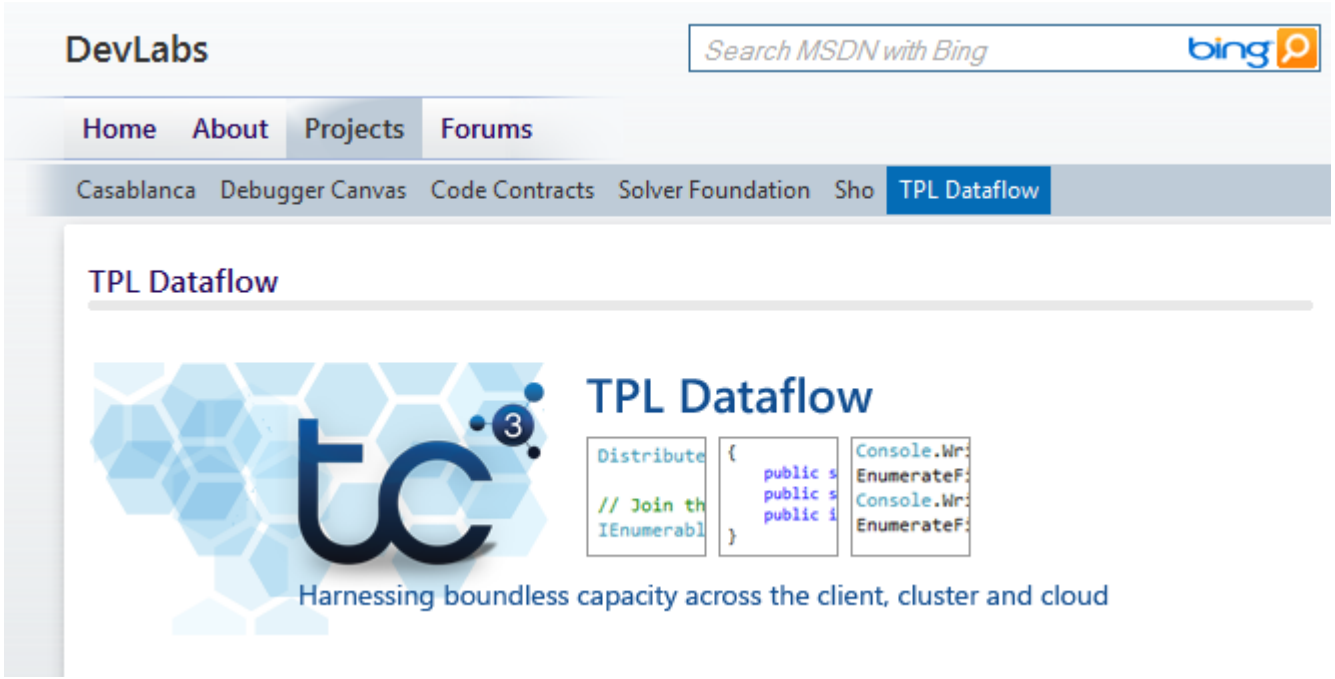
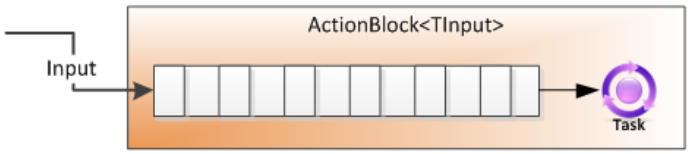
TPL Dataflow, DevLabs

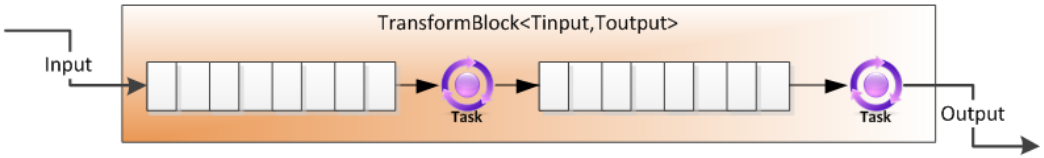


ActionBlock<T>

Demo

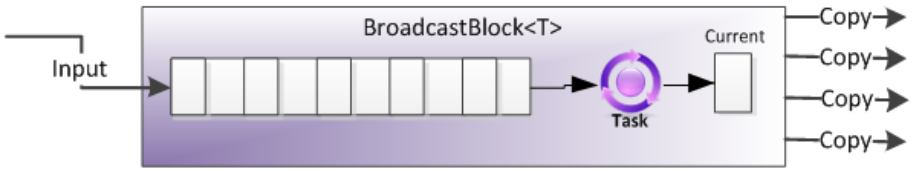


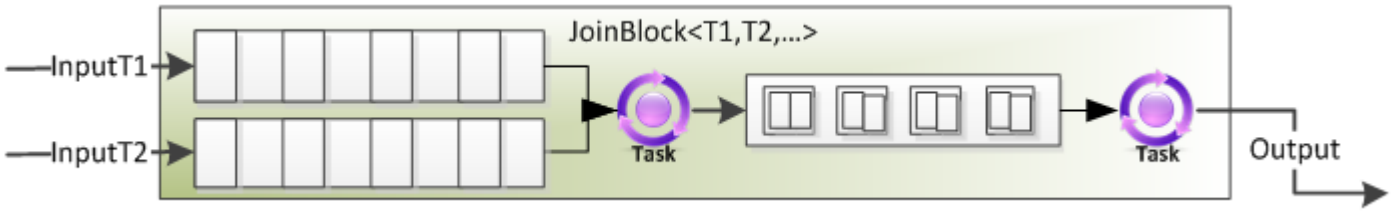
TransformBlock<Tin,TOut>



BroadcastBlock<T>
JoinBlock<T1,T2,…>

Demo





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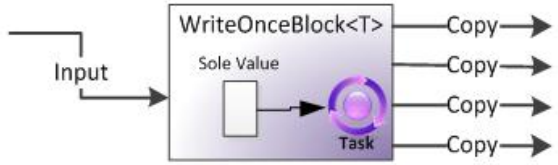
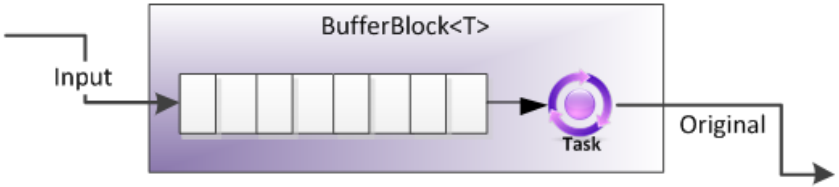
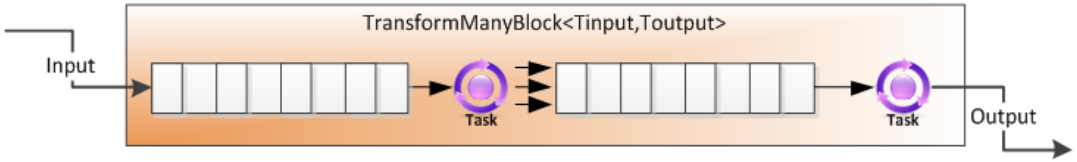
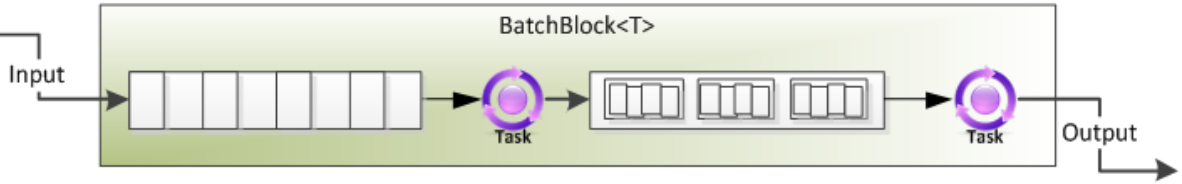
Fler…

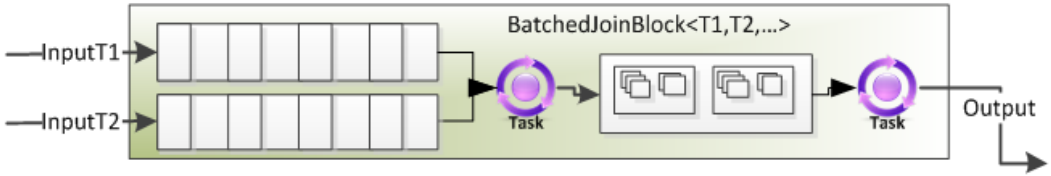
Demo











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Asynkrona flöden

```
let isPrime (n:int) =
   let bound = int (System.Math.Sqrt(float n))
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let primes m n =
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        |> Array.map fst

primes 0 1000 |> Array.iter  (printfn "%d")
```

```
private static bool IsPrime(int n)
{
    var bound = Convert.ToInt32(Math.Floor(Math.Sqrt(n)));
    return bound >= 2 ? !Enumerable.Range(2, bound - 1).Any(x => ((n % x) == 0)) : true;
}

private static Tuple<int, bool> PrimeAsync(int n)
{
    return new Tuple<int, bool>(n, IsPrime(n));
}

private static ISourceBlock<int> Primes(int min, int max)
{
    return Enumerable.Range(min, max - min)
        .Map(PrimeAsync)
        .Filter(t => t.Item2)
        .Map(t => t.Item1);
}
static void Main(string[] args)
{
    Primes(0, 100000).Iter(n => Console.WriteLine(n));
}
```

Frågor

- @parnordstrom
- parnordstrom.com

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