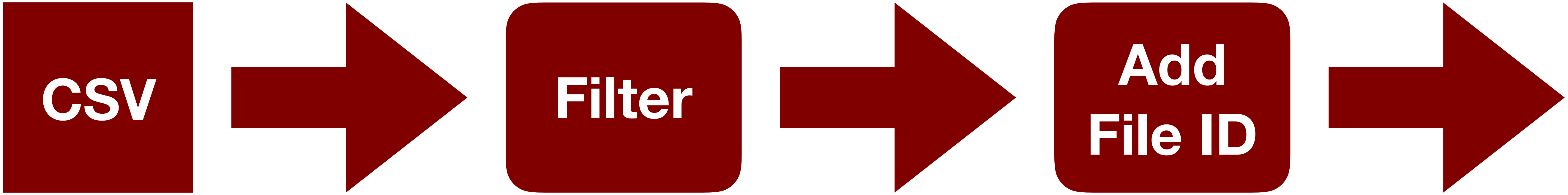
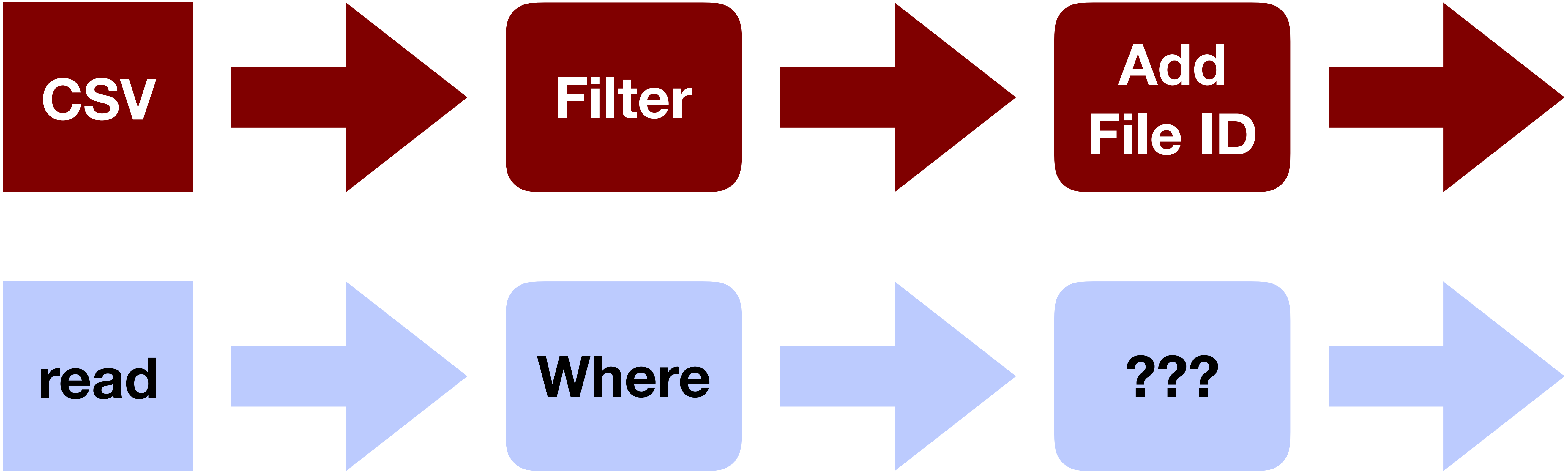
Combinators

Mike Harris

How to Add Data Without Stopping Flow?

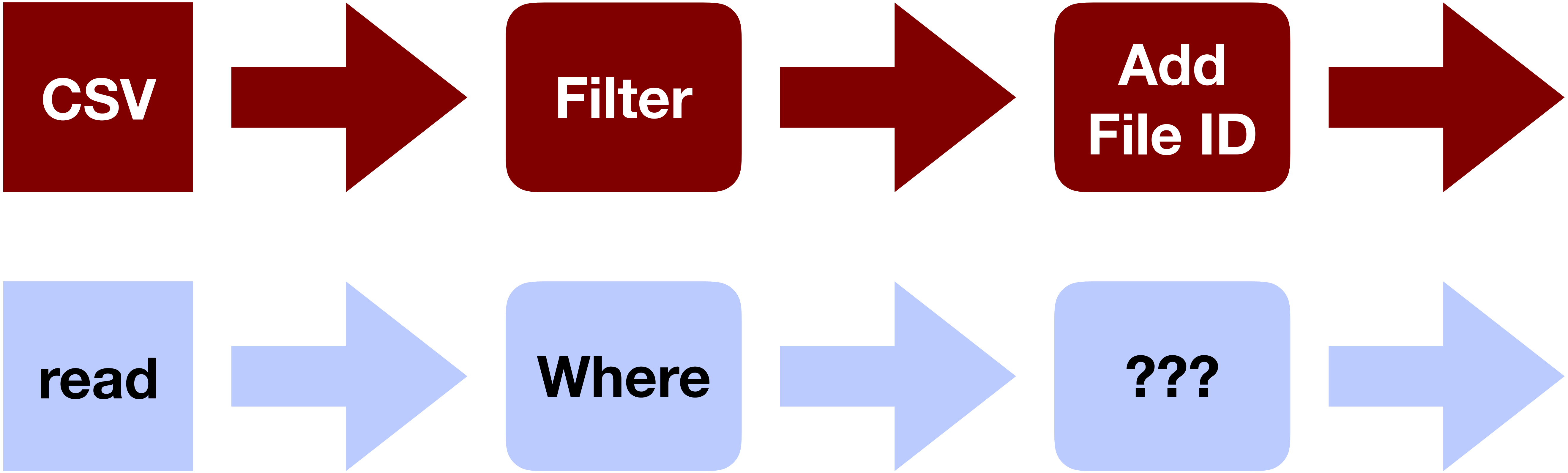


How to Add Data Without Stopping Flow? (LINQ)



C#

How to Add Data Without Stopping Flow? (LINQ)



CSV

Filter

Add File ID

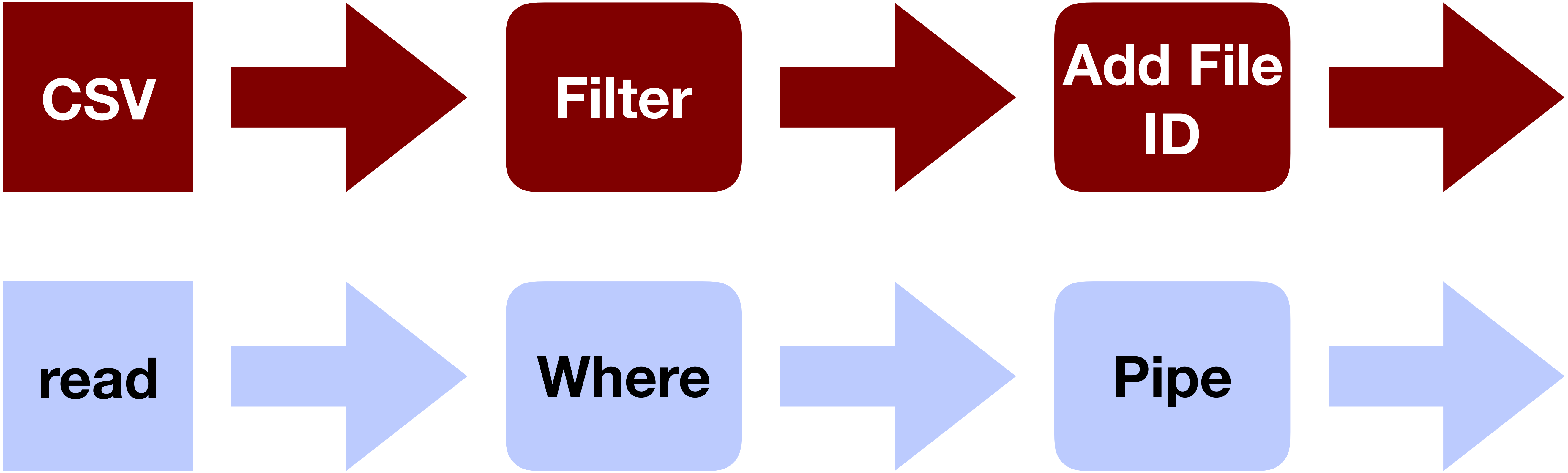
read

Where

???

C#

How to Add Data Without Stopping Flow?
K combinator



C#

MoreLINQ’s Pipe

```
public static IEnumerable<T> Pipe<T>(
  this IEnumerable<T> source,
  Action<T> action
)
```

C#

MoreLINQ’s Pipe in Context

```
csv.GetRecords<TTarget>()
  .Where(x => x.PricingDate != "")
  .Pipe(x => { x.FileId = fileId; })
…
```

C#

Combinators

K combinator

```
let K x y = x
```

F#

K combinator

```
const tap =
  f => x => {f(x); return x;};
const K = tap;
```

JS

I combinator

```
let I x = x
```

F#

I combinator

```
const identity =
  x => x;
const I = identity;
```

S combinator

```
let S x y z =
  x z (y z)
```

F#

S combinator

```
const seq =
  function(/*funcs*/) {
  const funcs =
 Array.prototype.slice.call(arguments);
  return x =>
    funcs.forEach(f => f(x));
};
const S = seq;
```

JS

Example

I = SKK

```
I = SKK
```

I = SKK

$$I\ x = SKK\ x$$

definitions

- $I\ x = x$
- $K\ xy = x$
- $S\ xyz = xz(yz)$

I = SKK

$$\begin{aligned} I\ x &= SKK\ x \\ &= Kx\ (Kx) \end{aligned}$$

definitions

- $I\ x = x$
- $K\ xy = x$
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I = SKK

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definitions

- $I\ x = x$
- $K\ xy = x$
- $S\ xyz = xz(yz)$

I = SKK

```
I x = SKK x
    = Kx (Kx)
    = Kx x
    = x
```

definitions

- `I x   = x`
- `K xy  = x`
- `S xyz = xz(yz)`

logic

Lightning!

Extensional Equality

```
csv.GetRecords<TTarget>()
  .Where(x => x.PricingDate != "")
  .Pipe(x => { x.FileId = fileId; })
…
```

C#

Thank you!

Mike Harris

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