

Combining All the Streams



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Multiple Data Sources

Acme Product Management Home Product List [Product List \(Alternate UI\)](#)

Products

Leaf Rake (Garden)

Garden Cart (Garden)

Hammer (Toolbox)

Saw (Toolbox)

Video Game Controller (Gaming)

Product Detail for: Hammer

Name: Hammer
Code: TBX-0048
Category: Toolbox
Description: Curved claw steel hammer
Price: \$13.35
In Stock: 8

Supplier	Cost	Minimum Quantity
Acme General Supply	\$2.00	24
Acme Tool Supply	\$4.00	12



Creating Ancillary Streams

Acme Product Management [Home](#) [Product List](#) [Product List \(Alternate UI\)](#)

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Module Overview



Handling related data

Creating ancillary streams

Combining all the streams



Related Data Streams

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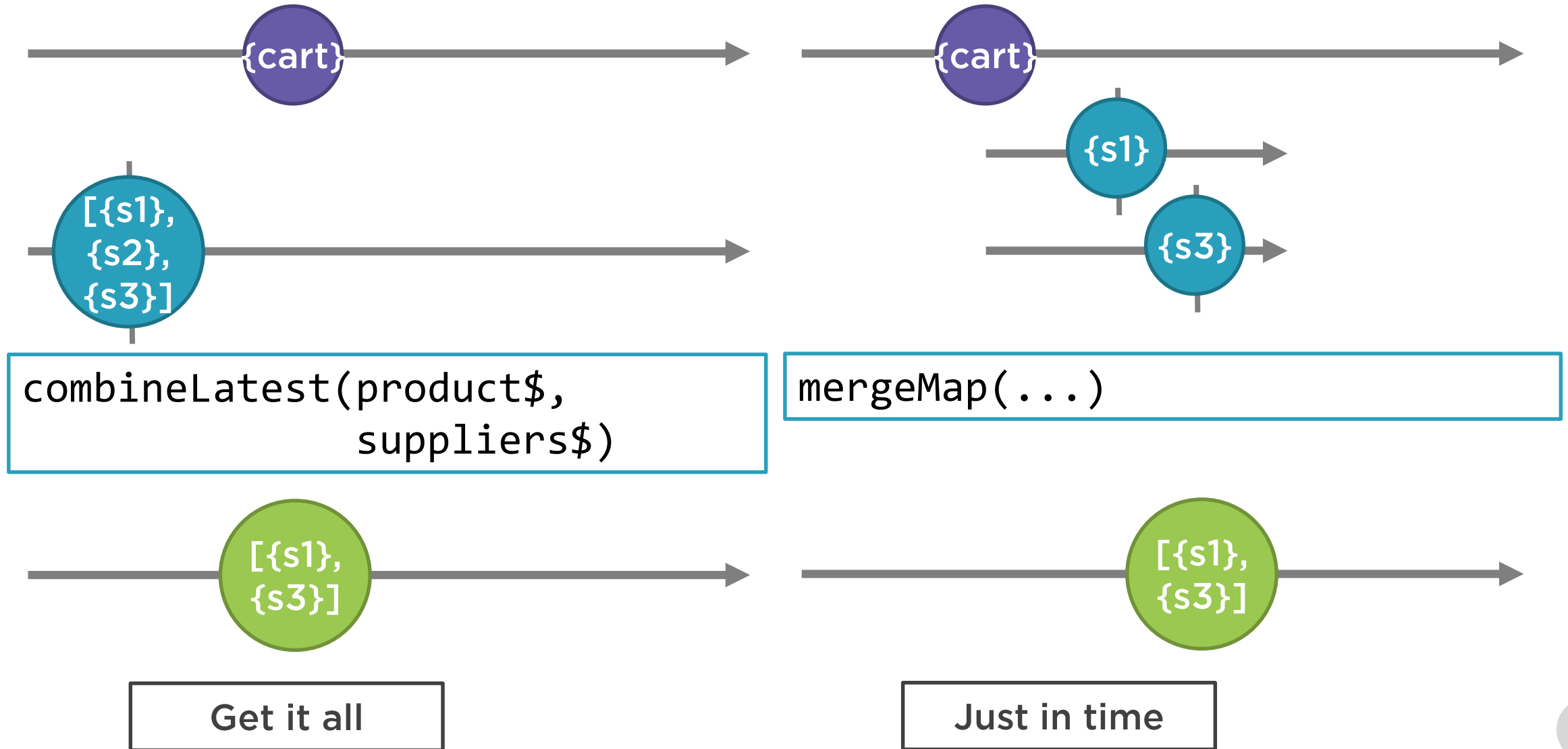
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Related Data Streams



Demo

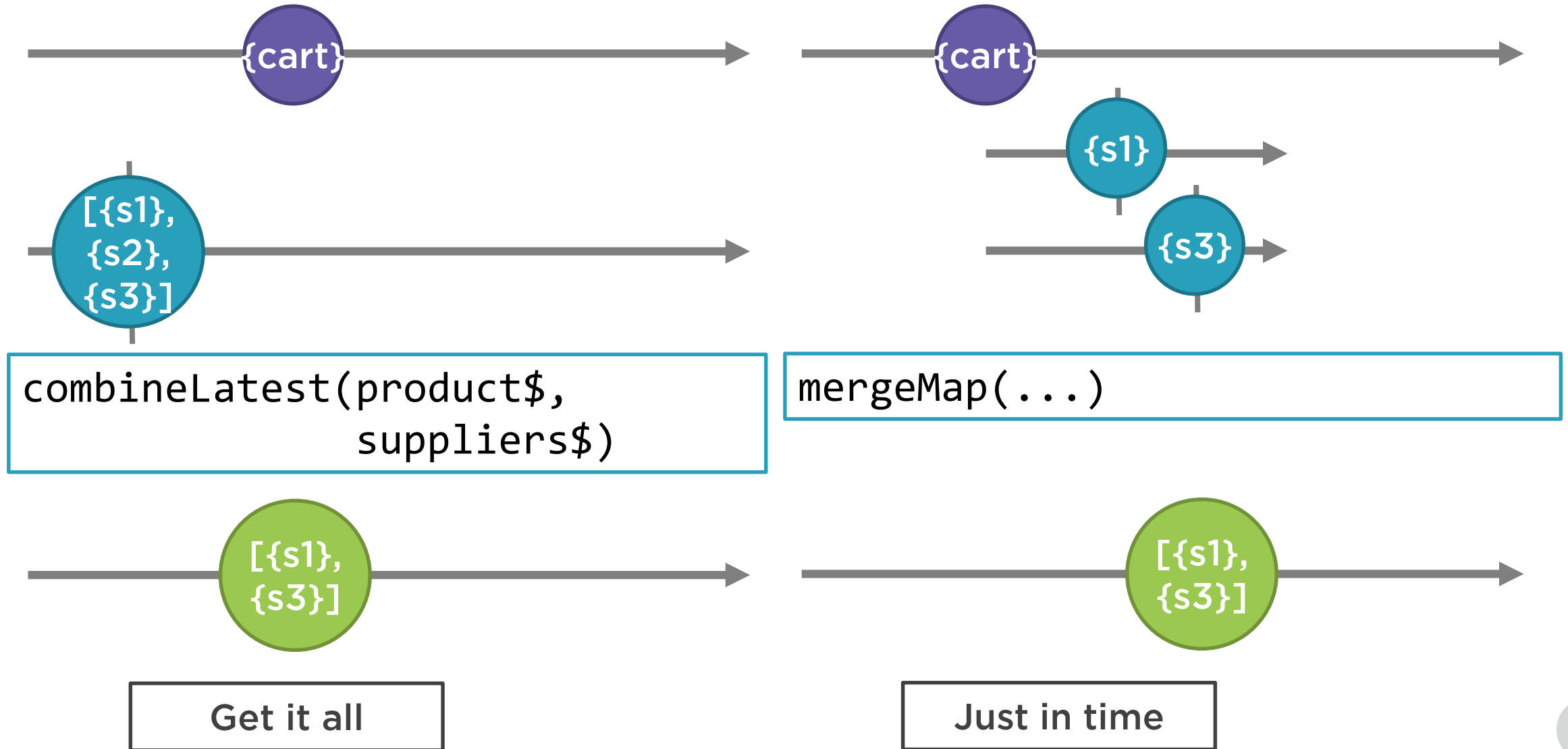


Related data streams: get it all

- Get all data from the related dataset
- Find the related items in that dataset

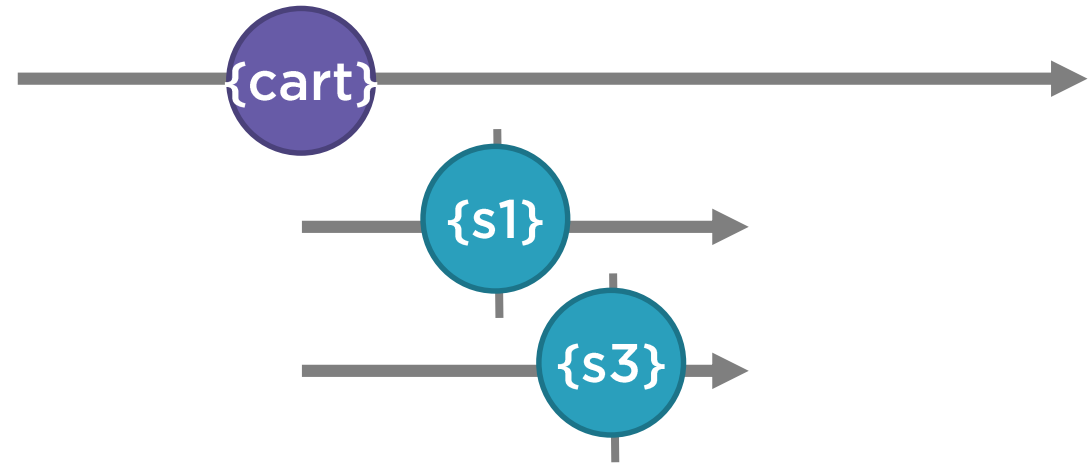


Related Data Streams



Related Data Stream: Just in Time

```
export interface Product {  
  id: number;  
  productName: string;  
  productCode?: string;  
  description?: string;  
  price?: number;  
  categoryId?: number;  
  category?: string;  
  quantityInStock?: number;  
  searchKey?: string[];  
  supplierIds?: number[];  
}
```



Related Data Stream: Just in Time

```
supplierWithMergeMap$ = of(1, 5, 8)
  .pipe(
    mergeMap(supplierId => this.http.get<Supplier>(`${this.url}/${supplierId}`))
  );
```

```
selectedProductSuppliers$ = this.selectedProduct$
  .pipe(
    mergeMap(product =>
      from(product.supplierIds)
        .pipe(
          mergeMap(supplierId => this.http.get<Supplier>(`${this.url}/${supplierId}`)),
          toArray()
        )
    ));
```



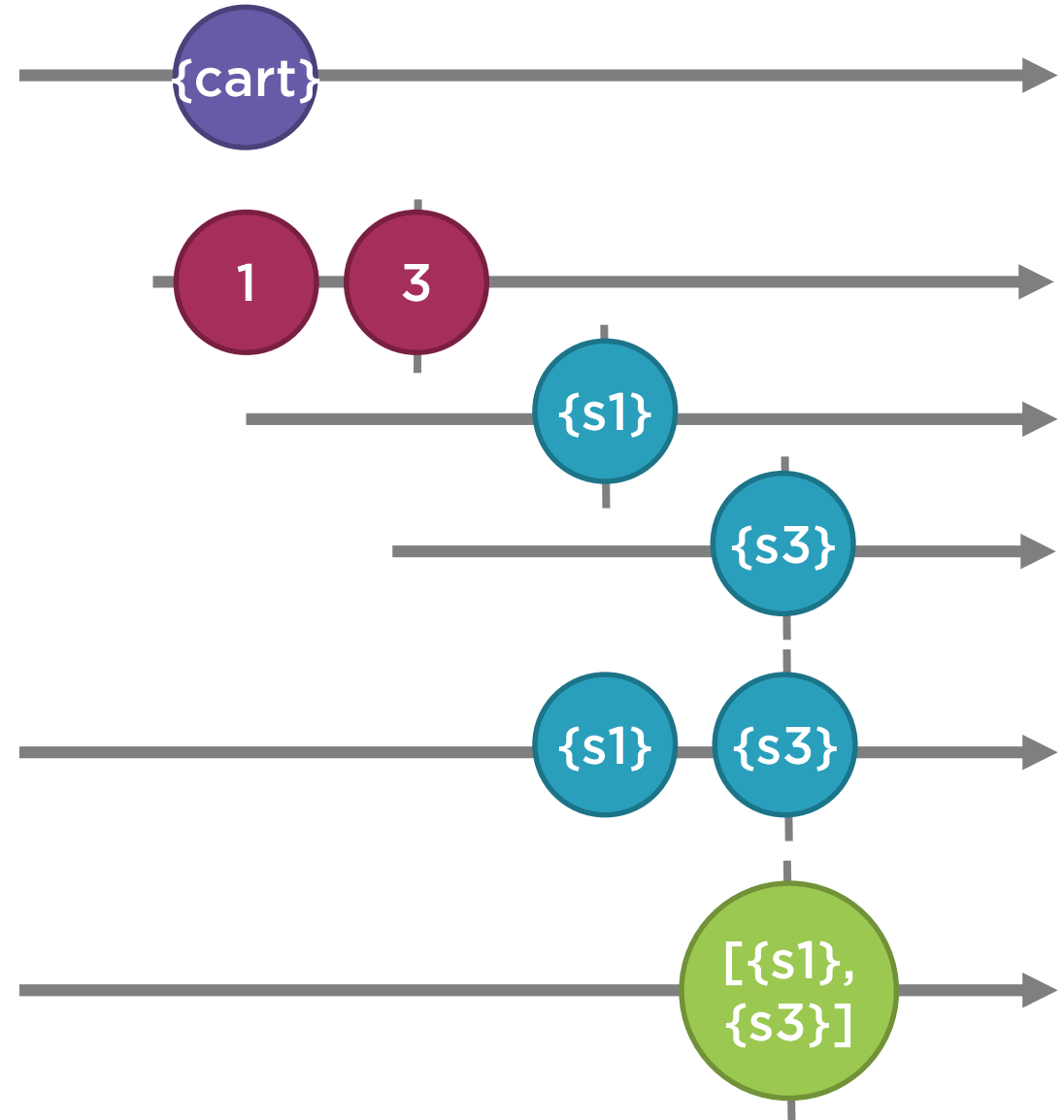
Related Data Stream: Just in Time

```
this.selectedProduct$  
  .pipe(  
    mergeMap(product =>  
      from(product.supplierIds)  
        .pipe(  
          mergeMap(supplierId =>  
            this.http.get<Supplier>(...)),  
          toArray()  
        )  
      )  
  ));
```



Related Data Stream: Just in Time

```
this.selectedProduct$  
  .pipe(  
    mergeMap(product =>  
      from(product.supplierIds)  
        .pipe(  
          mergeMap(supplierId =>  
            this.http.get<Supplier>(...),  
            toArray()  
          ))))  
  );
```



Demo



Related data streams: just in time



Related Data Stream

Get It All

Declarative pattern

Combine streams

Displays instantly

Gets all data

Just in Time

More complex code

Higher-order mapping operators

Display delay

Only retrieves required data



Defining Ancillary Streams

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Defining Ancillary Streams

```
pageTitle$ = this.product$  
  .pipe(  
    map((p: Product) =>  
      p ? `Product Detail for: ${p.productName}` : null)  
  );
```



Multiple Async Pipes

```
<div *ngIf="product$ | async as product">
```

```
<table *ngIf="productSuppliers$ | async as productSuppliers">
```

```
<div *ngIf="pageTitle$ | async as pageTitle">  
  {{pageTitle}}  
</div>
```

```
<div *ngIf="vm$ | async as vm ">
```



Related Data Streams



Get it all

- Gets all data from the related dataset
- Filters that dataset to find the related data

Just in time

- Gets just the related data items as needed

Related Data Streams: Get It All



```
selectedProductSuppliers$ = combineLatest(  
  this.selectedProduct$,  
  this.supplierService.suppliers$  
)  
.pipe(  
  map(([selectedProduct, suppliers]) =>  
    suppliers.filter(supplier =>  
      selectedProduct.supplierIds.includes(supplier.id)  
    ))  
));
```



Related Data Streams: Just in Time



```
selectedProductSuppliers$ = this.selectedProduct$  
  .pipe(  
    filter(product => Boolean(product)),  
    switchMap(product =>  
      from(product.supplierIds)  
        .pipe(  
          mergeMap(supplierId =>  
this.http.get<Supplier>(`${url}/${supplierId}`)),  
          toArray()  
        ))  
    ));
```



Combining All the Streams



```
vm$ = combineLatest([
  this.product$,
  this.productSuppliers$,
  this.pageTitle$
])
  .pipe(
    map(([product, productSuppliers, pageTitle]) =>
      ({ product, productSuppliers, pageTitle })))
  );
```

```
<div *ngIf="vm$ | async as vm">
```

