

Angular NgRx: Getting Started

INTRODUCTION



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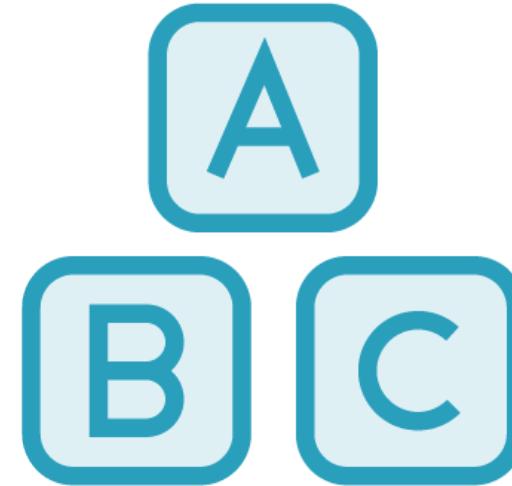
What Is State?



View State



User
Information



Entity Data

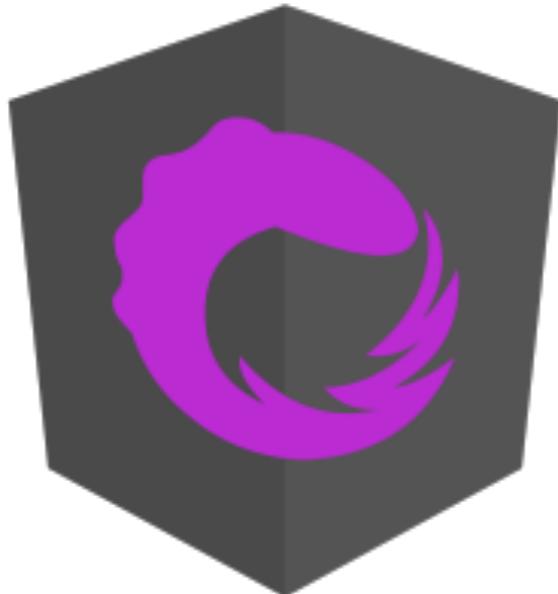


User Selection
and Input

...



Purpose of NgRx



Provide a formal pattern for

- Organizing state
- Managing state
- Communicating state changes



Module Overview



Introduce NgRx

Examine the problems it solves

Getting the most from this course

Sample application

Course outline





GETTING STARTED

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Introduction

@ngrx/store

@ngrx/store-devtools

@ngrx/effects

@ngrx/router-store

@ngrx/entity

@ngrx/data

@ngrx/component

@ngrx/schematics

What is NgRx?

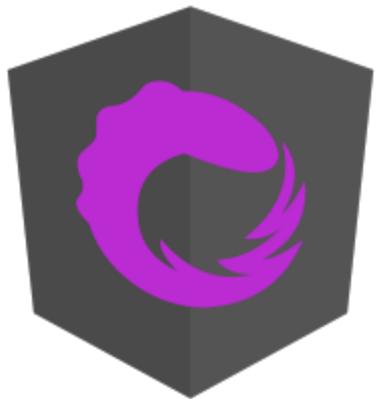
NgRx is a framework for building reactive applications in Angular. NgRx provides state management, isolation of side effects, entity collection management, router bindings, code generation, and developer tools that enhance developers experience when building many different types of applications.

Why NgRx for State Management?

NgRx provides state management for creating maintainable explicit applications, by storing single state and the use of actions in order to express state changes.



What Is NgRx?



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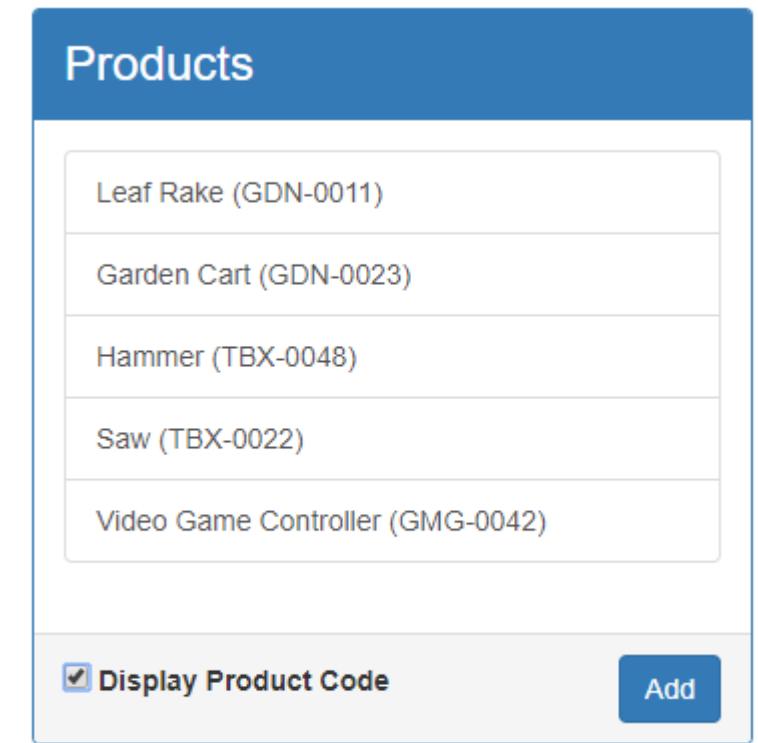
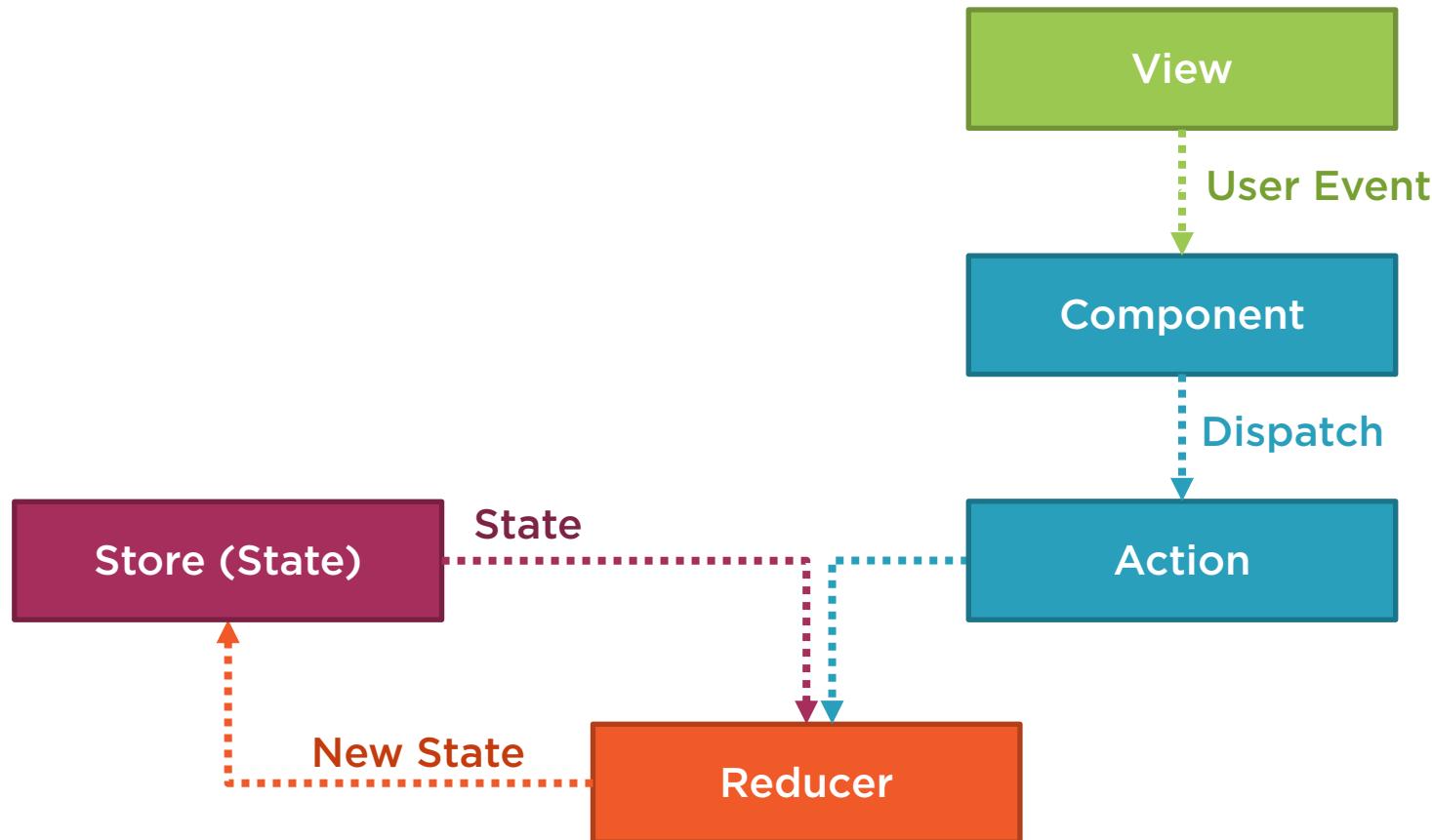
NgRx

redux
pattern

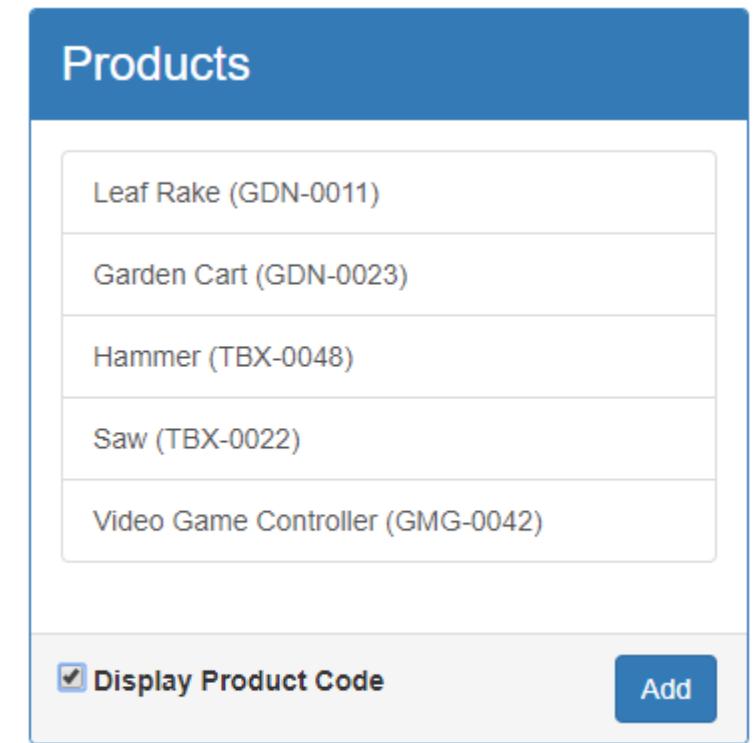
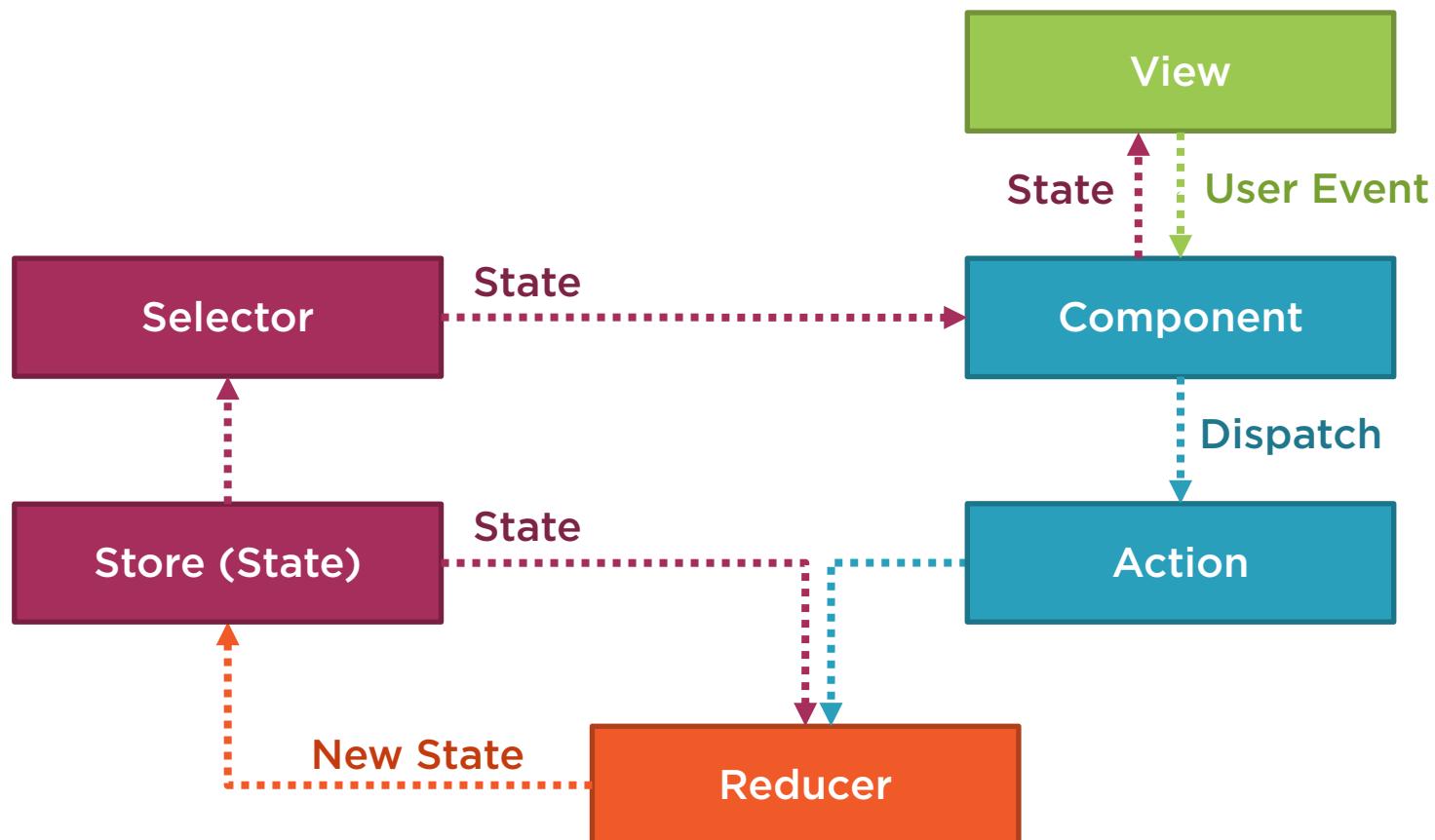
Angular



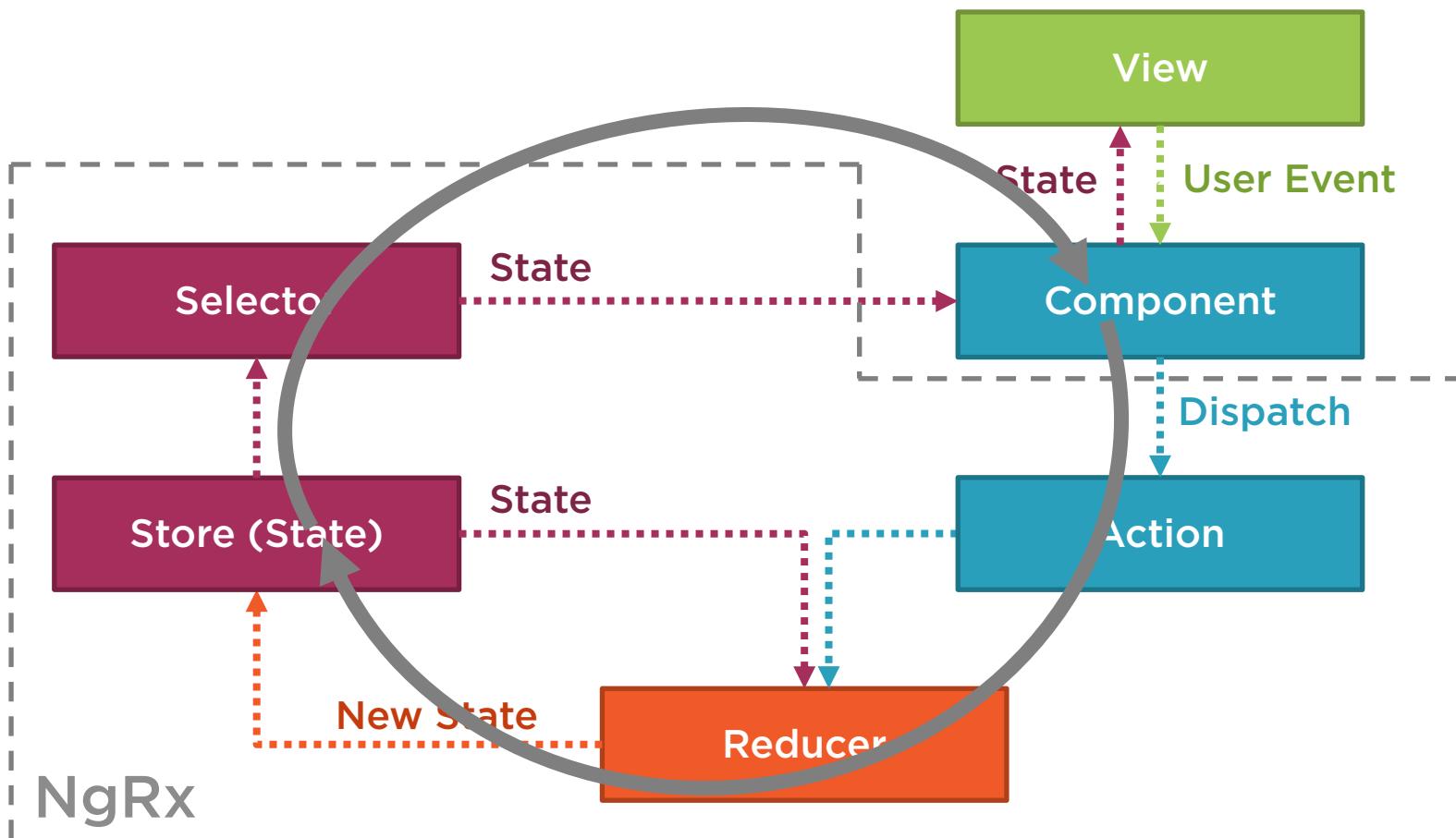
Redux Pattern



Redux Pattern



Redux Pattern



Products

Leaf Rake (GDN-0011)
Garden Cart (GDN-0023)
Hammer (TBX-0048)
Saw (TBX-0022)
Video Game Controller (GMG-0042)

Display Product Code

Add



Why use NgRx?



Without NgRx

They're Everywhere!

Product Criteria Service

```
export class ProductCriteriaService {  
  showImage: boolean;  
  listFilter: string;
```

Cart Manager

```
export class CartManager {  
  allowGuest: boolean;  
  includeAds: boolean;  
  displayCustomerDetails: boolean;  
}  
  


## Shipping Criteria


```

```
export class ShippingCriteria {  
  allowEdit: boolean;  
  listFilter: string;  
  displayAddress: boolean;  
}
```

Price Criteria Service

```
export class PriceCriteriaService {  
  compareWarehouseCriteriaService {  
    showImage: boolean;  
    listFilter: string;  
    displayCustomerDetails: boolean;  
  }  
  


## Order Criteria


```

```
export class OrderCriteria {  
  showImage: boolean;  
  listFilter: string;  
  displayCustomerDetails: boolean;  
  phoneNumber: boolean;
```



Without NgRx

Do We Need to Get It Again?

Product Service

```
export class ProductService {  
  private productUrl = 'api/products';  
  
  constructor(private http: HttpClient) { }  
  
  getProducts(): Observable<Product[]> {  
    return this.http.get<Product[]>(this.productUrl)  
  }  
}
```

Product List Component

```
export class ProductListComponent {  
  products: Product[] = [];  
  
  constructor(private productService: ProductService) { }  
  
  ngOnInit(): void {  
    this.productService.getProducts()  
      .subscribe(products => this.products = products)  
  }  
}
```



Without NgRx

Don't Forget to Tell Everyone!

Acme Product Management Home Product List Add Product Welcome Deborah Log Out

Number of months on the market: 9

Products

- Garden Cart (GDN-0023)
- Hammer (TBX-0048)
- Leaf Rake (GDN-0011)
- Saw (TBX-0022)
- Video Game Controller (GMG-0042)

Product Detail: Garden Cart

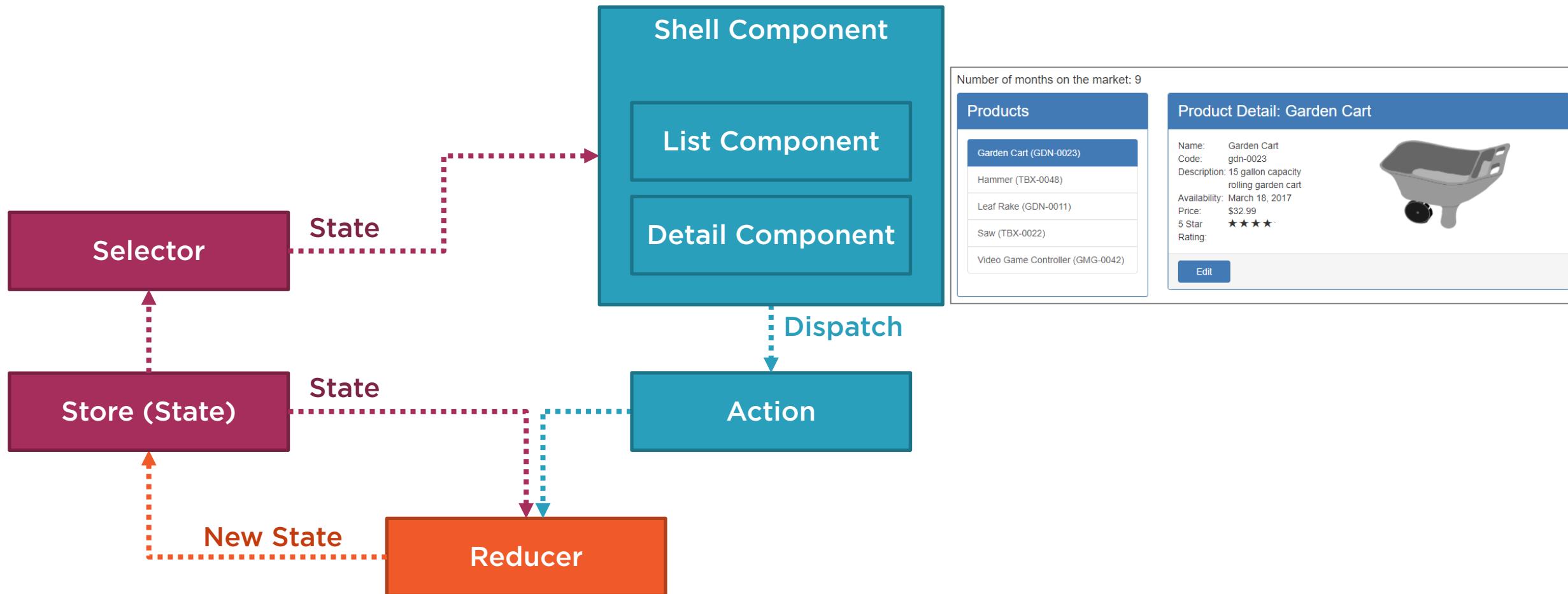
Name: Garden Cart
Code: gdn-0023
Description: 15 gallon capacity rolling garden cart
Availability: March 18, 2017
Price: \$32.99
5 Star 
Rating:

[Edit](#)





NgRx



What's Going On?

The screenshot shows the APM Demo App DevTools interface. The top navigation bar includes tabs for Elements, Console, Sources, Network, Performance, Memory, Application, Security, Audits, and Redux. The Redux tab is active, indicated by a blue underline.

The main area is divided into two panels:

- Inspector** (left panel): Shows a list of actions recorded over time. Each entry includes the action name, timestamp, and duration.
 - @ngrx/store/init (timestamp: 10:39:33.50)
 - @ngrx/store/update-reducers (+00:00.01)
 - @ngrx/effects/init (+00:00.00)
 - @ngrx/store/update-reducers (+00:23.60)
 - [Product] Load (+00:00.01)
 - [Product] Load Success (+00:00.51)
 - [Product] Set Current Product (+00:02.64)
- APM Demo App DevTools** (right panel): Displays the recorded actions in a detailed view.
 - Action**: A table header with columns for Action, State, and Diff.
 - Action**: A list of recorded actions:
 - product (pin): { id: 1, productName: "Leaf Rake", productCode: "GDN-0011", ... }
 - type (pin): "[Product] Set Current Product"
 - Tree**, **Chart**, **Raw**: Three tabs for visualizing the data.

At the bottom, there are controls for playback (rewind, fast forward, play/pause), a zoom slider (1x), and various tool buttons: Pause recording, Lock changes, Persist, Dispatcher, Slider, Import, Export, Remote, and Settings.



Use NgRx When...

There is state everywhere!

- The store provides a place for UI state to retain it between router views

Getting data again and again!

- The store provides a client-side cache to use as needed

Notify everyone!

- The reducer updates the store and the store notifies all subscribers

Something isn't working!

- It has great tooling



Don't Use NgRx When...

Your team is new to Angular

- Ramp up with Angular and RxJS Observables first

The application is simple

- The extra code required for NgRx may not be worth the effort

Your team has a good pattern

- No need to change if you already have a good state management pattern in place



Prerequisites

Required

- Angular modules
- Components
- Services
- RxJS Observables

Suggested

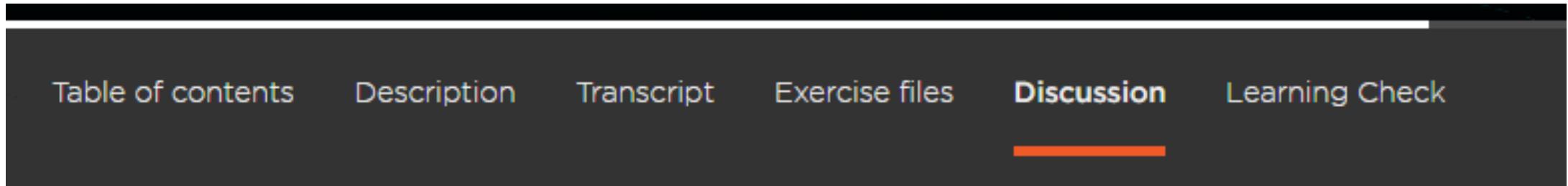
- Angular: Getting Started
- RxJS in Angular: Reactive Development
- Angular Component Communication

Not Required

- NgRx experience



Thoughts? Comments? Questions?



@deborahkurata

@dunchunter



Checklists



Review module concepts

Code along assistance

Revisit as you build



GitHub Repository

<https://github.com/DeborahK/Angular-NgRx-GettingStarted>

Materials for my Pluralsight course: Angular NgRx: Getting Started.

Edit

Add topics

63 commits

1 branch

0 releases

2 contributors

MIT

Branch: master ▾

New pull request

Create new file

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DeborahK Update README.md

Latest commit 77f790e 13 minutes ago

APM-Demo0

Merge Demo3 -> Demo4

2 days ago

APM-Demo1

Merge Demo3 -> Demo4

2 days ago

APM-Demo2

Merge Demo3 -> Demo4

2 days ago

APM-Demo3

Merge Demo3 -> Demo4

2 days ago

APM-Demo4

Merge Demo4->Demo5

2 days ago

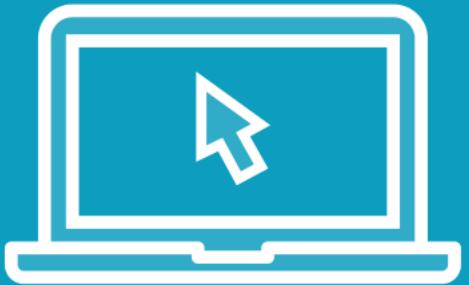
APM-Demo5

Merge Demo4->Demo5

2 days ago



Demo

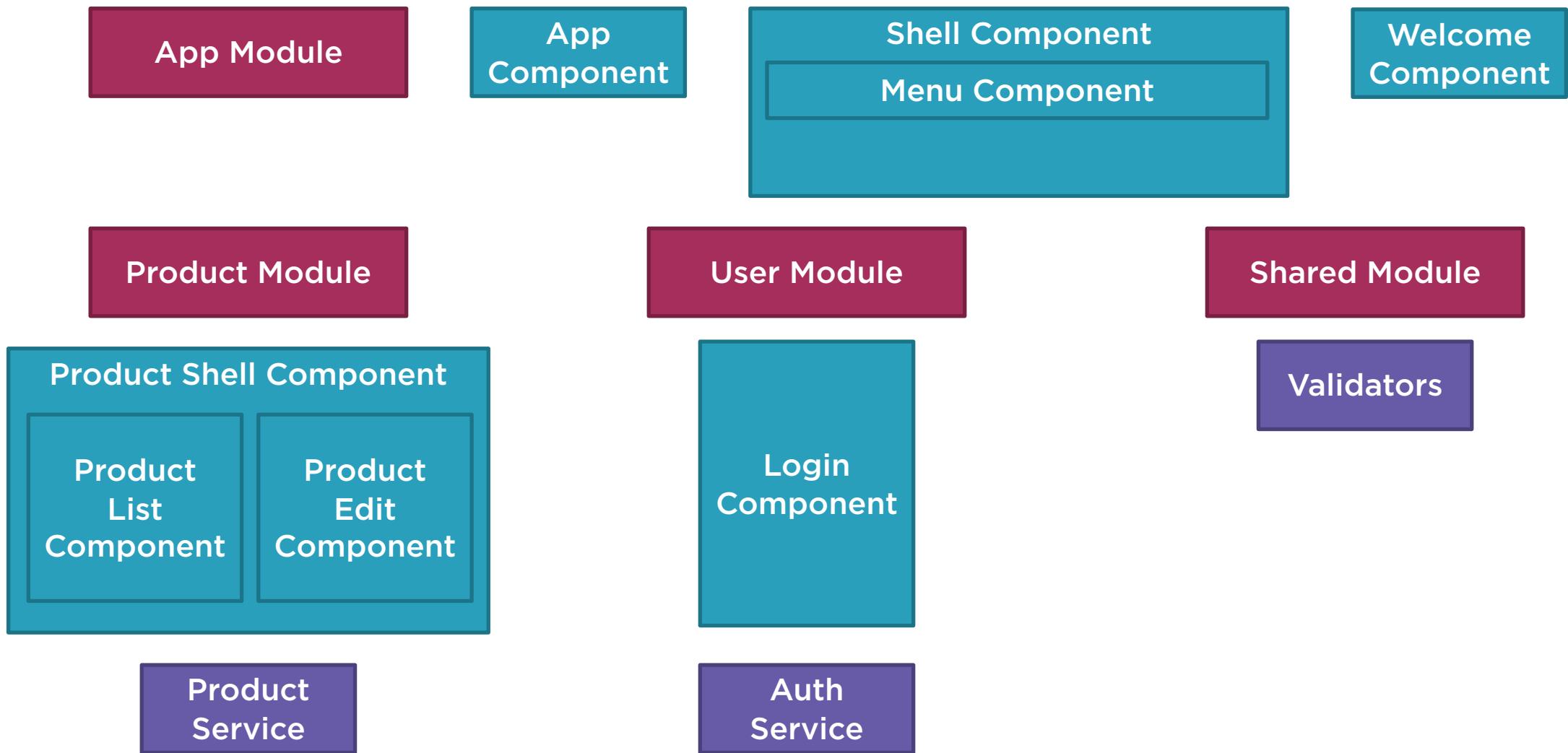


Sample application in action

- Complex: state management requirements
- Simple: Implement within the course
- Existing: Focus on NgRx



Sample Application Architecture



Course Outline



The redux pattern

First look at NgRx

Developer tools and debugging

Strongly typing the state

Strongly typing actions with action creators

Working with effects

Performing update operations

Architectural considerations

Final words

