Building Business Objects

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Business Objects

- Think about our application as a set of business objects (entities)
- Create classes to define the prototype for those business objects
- Keeps logic out of the Angular controllers
- Use the classes anywhere in the application
- More natural approach for some

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Interfaces and Classes

- Clearly state our intent with an interface
  - Define properties with their data types
  - Define methods with their signatures
- Implement that intent with a class

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Module Overview

Examine OOP in TypeScript

Define Business Objects

Build an Entity Class

Use that Class in an Angular Controller

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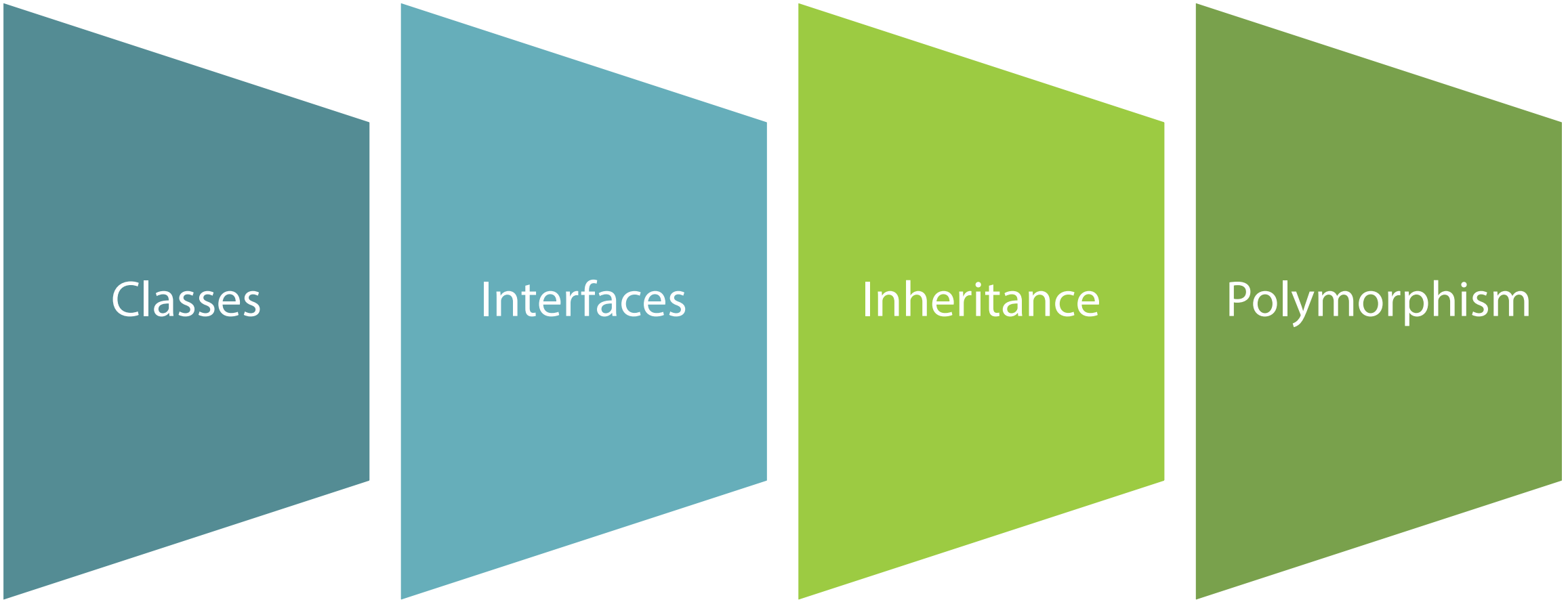
OOP in TypeScript



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Defining Business Object Entities

Analyze the business problem

Product Management System
- Manages products
- Track prices over time
- Maintains search tags
- Manages vendors

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Defining Business Object Entities

Analyze the business problem

Extract the nouns

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Defining Business Object Entities

Analyze the business problem

Extract the nouns

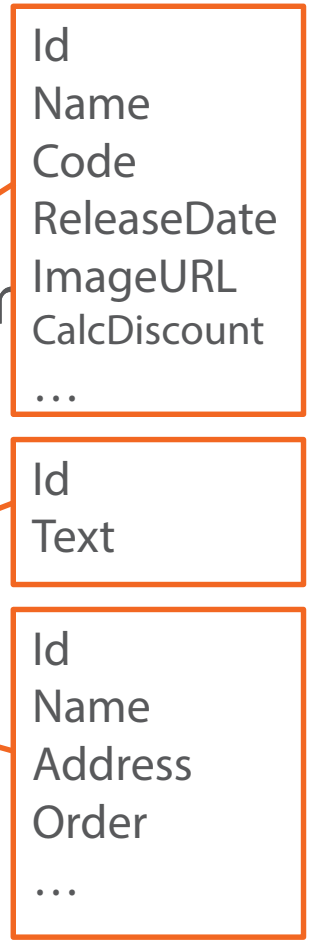
Define the members

Properties

Methods

Product Management System

- Manages products
- Track prices over time
- Maintains search tags
- Manages vendors



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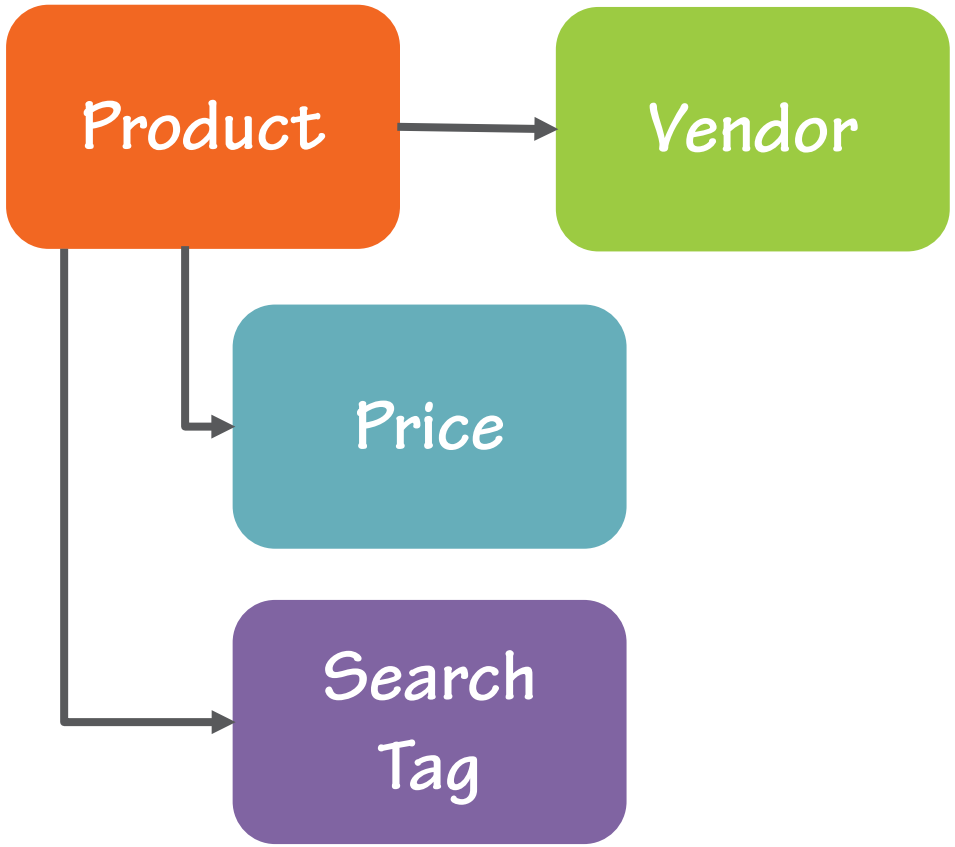
Defining Business Object Entities

Analyze the business problem

Extract the nouns

Define the members
Properties
Methods

Establish relationships



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Building an Entity Class

- Start with a TypeScript module
  - No Angular module needed
- Optionally, define an interface
  - Defines our intent
- Create the class
  - Implement the interface with the **implements** keyword
- Declare the properties
- Add the constructor function
- Implement the methods

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Export the Interface/Entity Class

```
module app.domain {
     export interface IProduct {
          productId: number;
          productName: string;
          calculateDiscount(percent: number): number;
     }
     export class Product implements IProduct {

          constructor(public productId: number,
                      public productName: string) {
          }

          calculateDiscount(percent: number): number {
               return this.price - (this.price * percent/100);
          }
     }
}
```

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Using an Interface/Entity Class

- Use the interface as a type

```
products: app.domain.IProduct[];
currentProduct: app.domain.IProduct;
```

- Create an instance of the class

```
currentProduct = new app.domain.Product;
```

- Access properties

```
currentProduct.productName;
```

- Call methods

```
currentProduct.calculateDiscount(10);
```

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This Module Covered

- Basic OOP features in TypeScript
- Defining business objects
- Building an entity class
- Using the interface/class in an Angular controller

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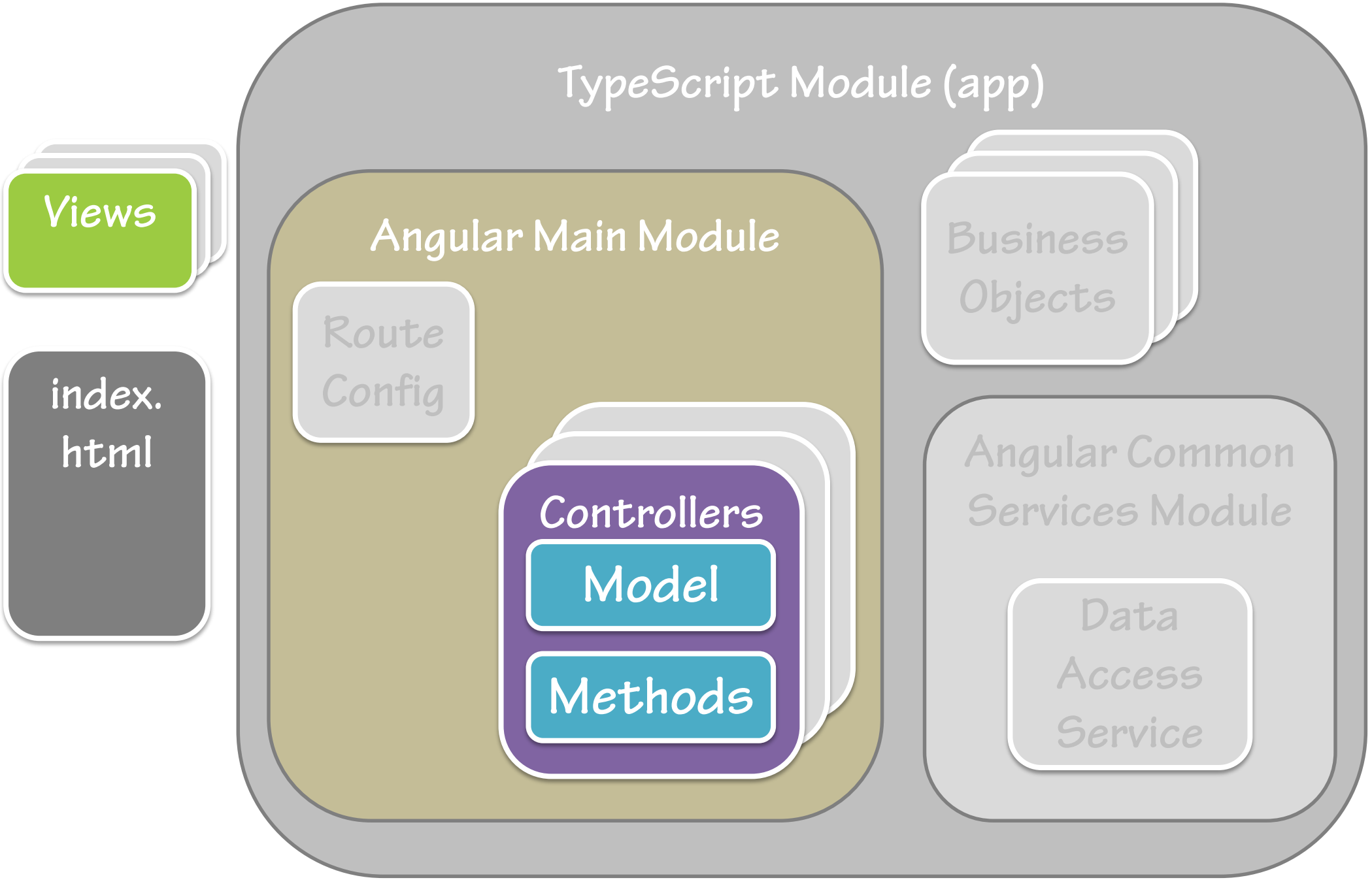

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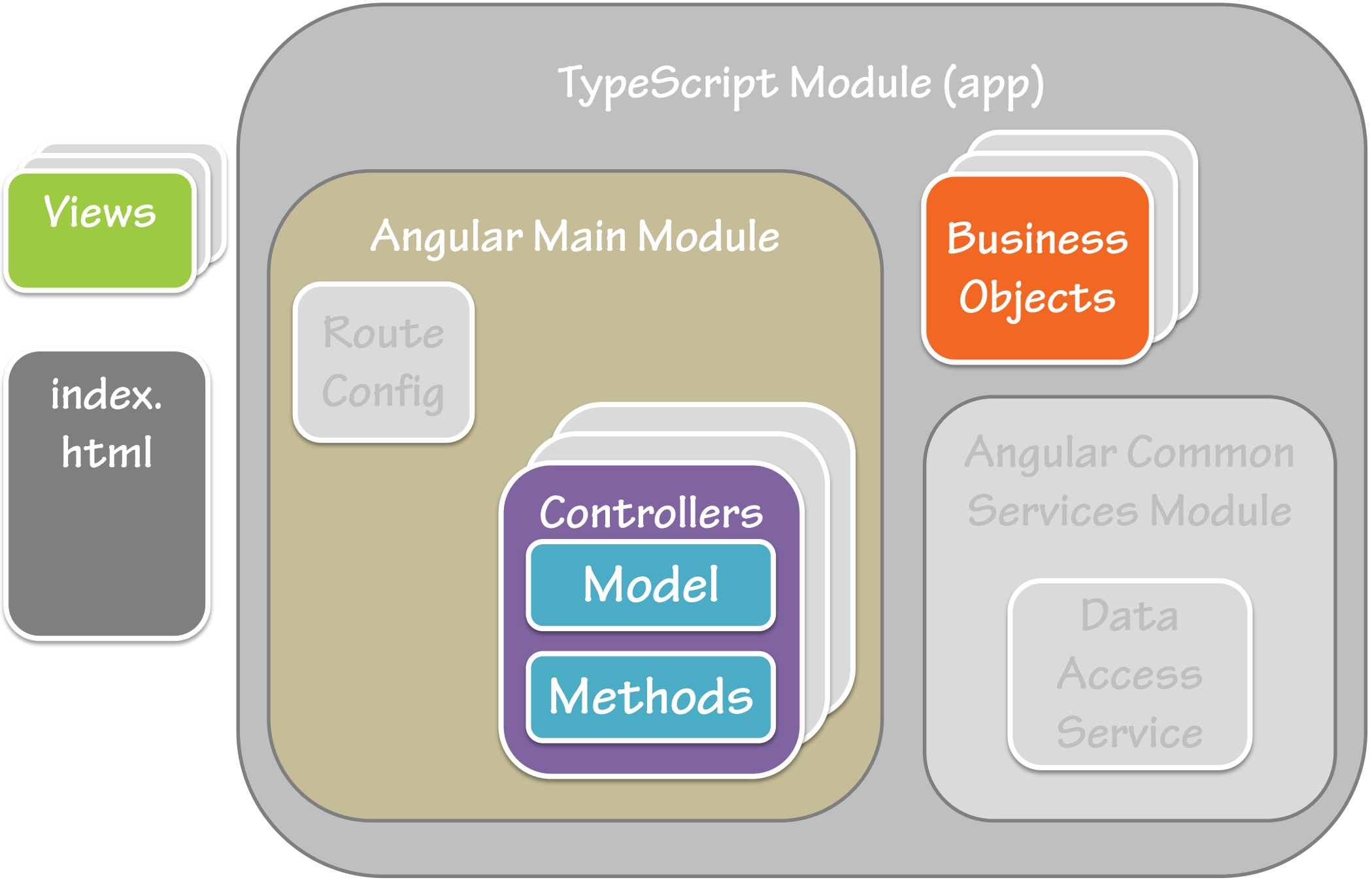

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