Introduction to Components



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Module Overview



What Is a Component?

Creating the Component Class

Defining the Metadata with a Decorator

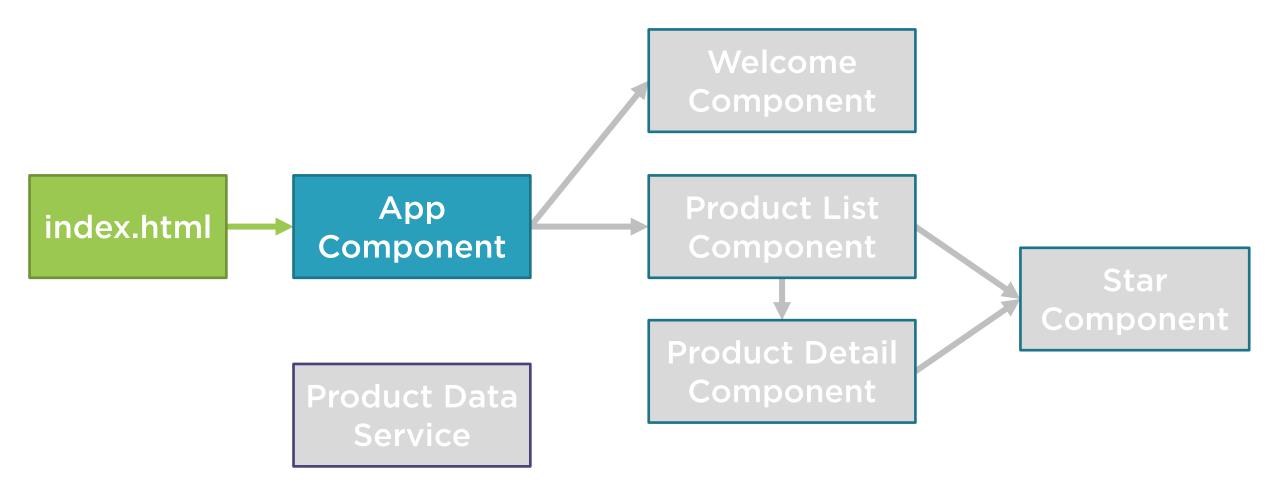
Importing What We Need

Bootstrapping Our App Component

Angular Compiler and Compile Errors

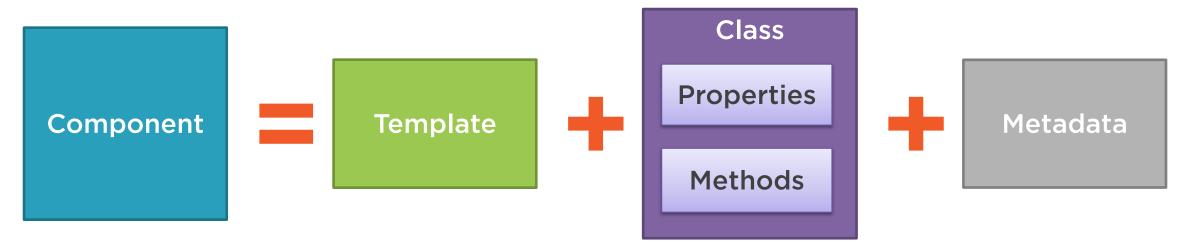


Application Architecture





What Is a Component?



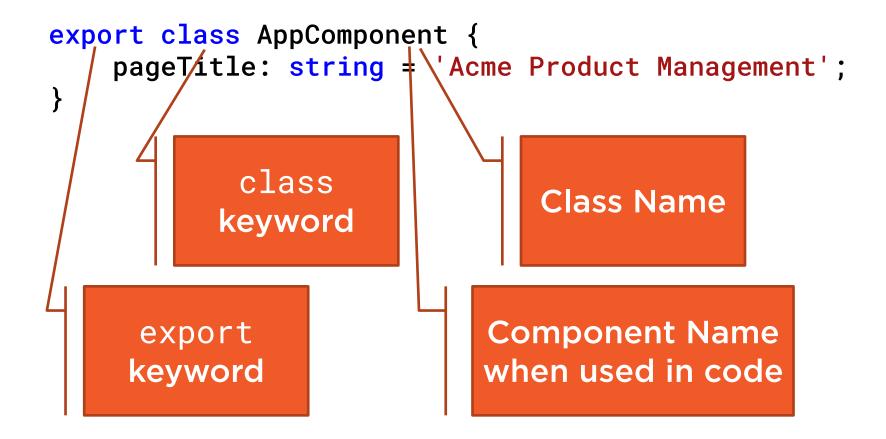
- View layout
- Created with HTML
- Includes binding and directives
- Code supporting the view
- Created with TypeScript
- Properties: data
- Methods: logic

- Extra data for Angular
- Defined with a decorator



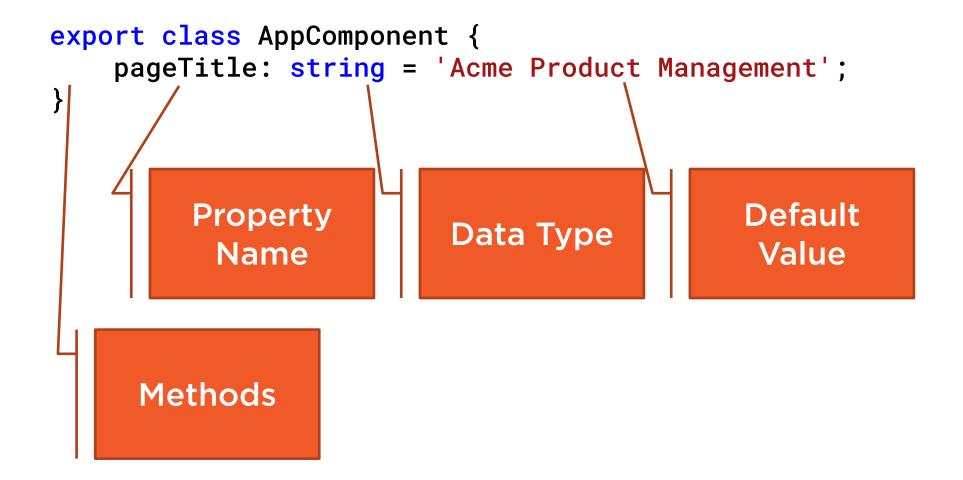
```
Component
 app.component.ts
                                                           Import
import { Component } from '@angular/core';
@Component({
    selector: 'pm-root',
    template:
                                                         Metadata &
    <div><h1>{{pageTitle}}</h1>
        <div>My First Component</div>
                                                          Template
    </div>
export class AppComponent {
                                                            Class
 pageTitle: string = 'Acme Product Management';
```

Creating the Component Class





Creating the Component Class





Defining the Metadata



Decorator

A function that adds metadata to a class, its members, or its method arguments.

Prefixed with an @.

Angular provides built-in decorators.

@Component()



Defining the Metadata

```
app.component.ts
                                                       Component
                                                        decorator
@Component(+
             pm-root -
    selector:
    template:
                                                      Directive Name
   <div><h1>{{pageTitle}}</h1>
                                                      used in HTML
       <div>My First Component
    </div>
                                                       View Layout
export class AppComponent {
 pageTitle: string = 'Acme Product Management';
                                                         Binding
```



Importing What We Need



Before we use an external function or class, we define where to find it

import statement

import allows us to use exported members from external ES modules

Import from a third-party library, our own ES modules, or from Angular



Angular Is Modular

@angular/ core

@angular/
animate

@angular/common

@angular/
router

https://www.npmjs.com/~angular



Importing What We Need



Importing What We Need

```
app.component.ts
import { Component } from '@angular/core';
@Component({
    selector: 'pm-root',
    template:
    <div><h1>{{pageTitle}}</h1>
        <div>My First Component</div>
    </div>
export class AppComponent {
 pageTitle: string = 'Acme Product Management';
```

import keyword

Angular library module name

Member name



Completed Component

```
import { Component } from '@angular/core';
@Component({
    selector: 'pm-root',
    template:
    <div><h1>{{pageTitle}}</h1>
        <div>My First Component</div>
    </div>
export class AppComponent {
 pageTitle: string = 'Acme Product Management';
```

Demo



Creating the App Component



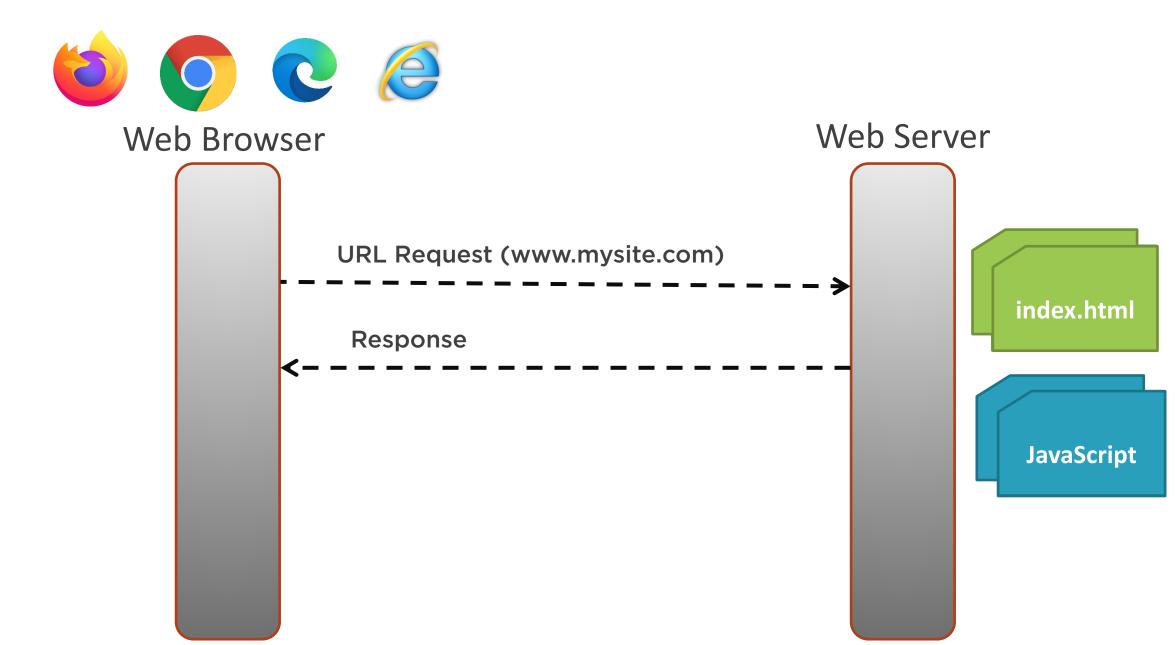
Bootstrapping Our App Component



Host the application

Defining the Angular module







Single Page Application (SPA)



index.html contains the main page for the application

This is often the only Web page of the application

Hence an Angular application is often called a Single Page Application (SPA)



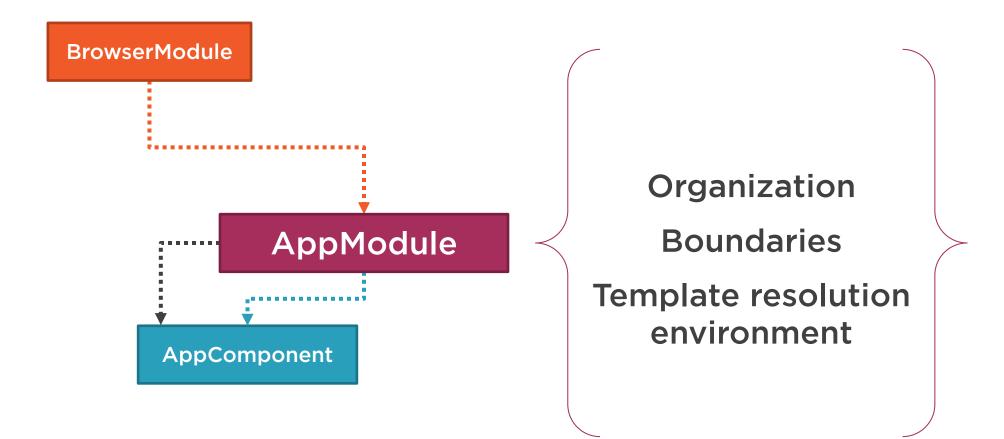
Hosting the Application

index.html

```
<body>
<pm-root></pm-root>
</body>
```

```
import { Component } from '@angular/core';
@Component({
    selector. 'pm-root',
    template:
    <div><h1>{{pageTitle}}</h1>
        <div>My First Component</div>
    </div>
export class AppComponent {
pageTitle: string = 'Acme Product Management';
```





Imports
Exports
Declarations
Providers
Bootstrap



Defining the Angular Module

app.module.ts

```
import { NgModule } from '@angular/core';
import { BrowserModule } from '@angular/platform-browser';
import { AppComponent } from './app.component';
@NgModule({
  imports: [ BrowserModule ],
  declarations: [ AppComponent ],
  bootstrap: [ AppComponent ]
export class AppModule { }
```

Demo



Bootstrapping Our App Component



Angular compiles our HTML templates and TypeScript components to JavaScript



Angular Compiler and Compile Errors (v8)

Just in Time compiler (JIT)

Used during development
Compiles in the browser at runtime

Ahead of Time compiler (AOT)

Used for deployment
Pre-compiles before deploying



Angular Compiler and Compile Errors (v9+)

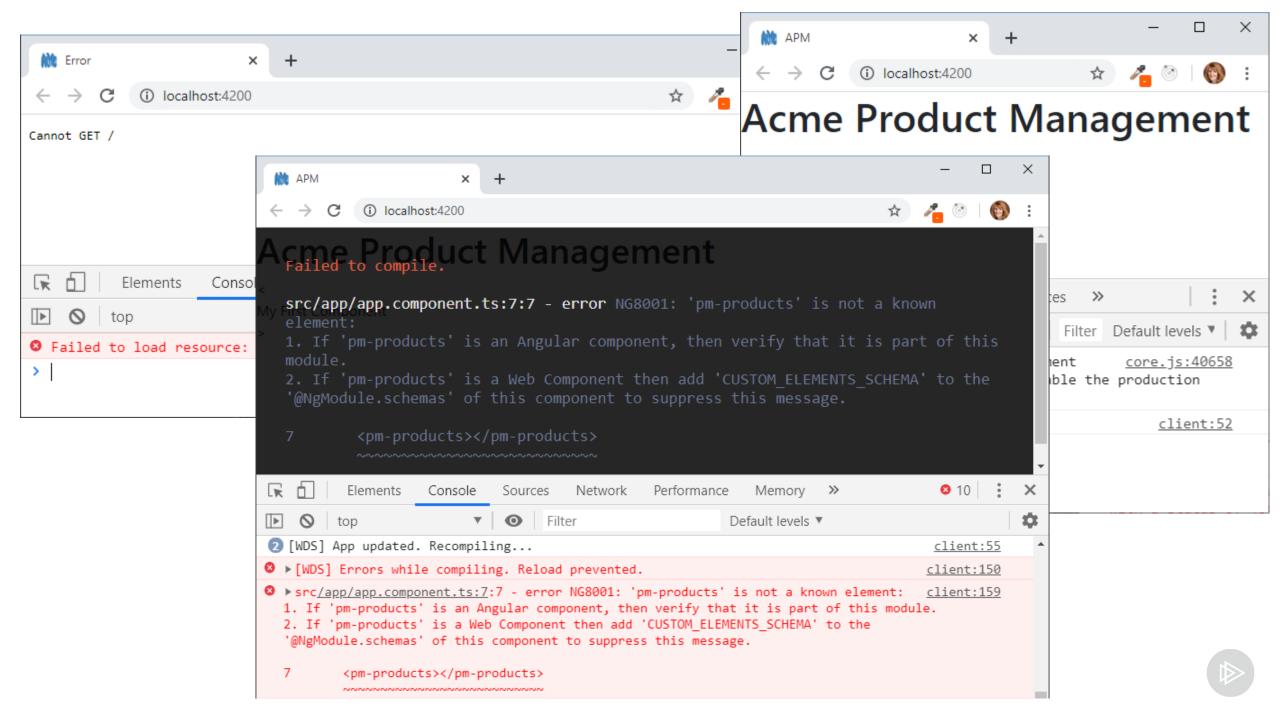
Just in Time compiler (JIT)

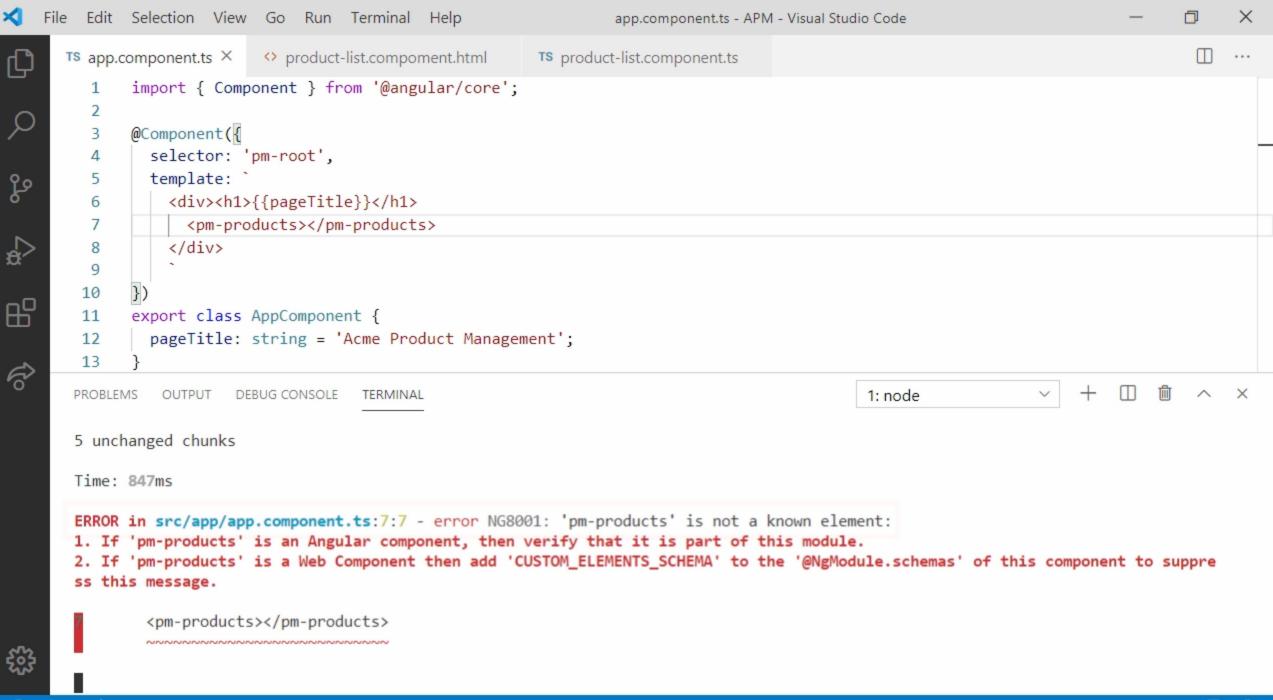
Not used by default

Ahead of Time compiler (AOT)

Used during development
Pre-compiles before serving
Used for deployment
Pre-compiles before deploying







Component Checklist



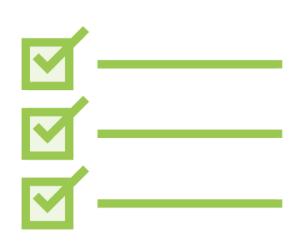
Class -> Code

Decorator -> Metadata

Import what we need



Component Checklist: Class



Clear name

- Use PascalCasing
- Append "Component" to the name

export keyword

Data in properties

- Appropriate data type
- Appropriate default value
- camelCase with first letter lowercase

Logic in methods

camelCase with first letter lowercase



Component Checklist: Metadata



Component decorator

- Prefix with @; Suffix with ()

selector: Component name in HTML

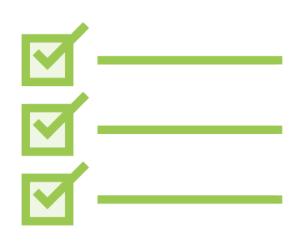
- Prefix for clarity

template: View's HTML

Correct HTML syntax



Component Checklist: Import



Defines where to find the members that this component needs

import keyword

Member name

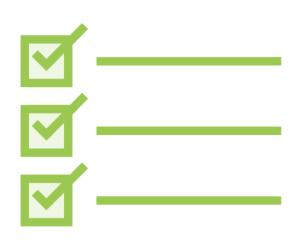
- Correct spelling/casing

Module path

- Enclose in quotes
- Correct spelling/casing



Something's Wrong! Checklist



F12 is your friend

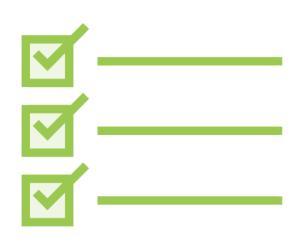
Check the VS Code Terminal window

Stop and restart the compiler

- Ctrl+C or Cmd+C
- npm start



Something's Wrong! Checklist



Recheck your code

- HTML
 - Close tags
 - Angular directives are case sensitive
- TypeScript
 - Close braces
 - TypeScript is case sensitive



Something's Wrong! Checklist (cont.)



Check my blog for a solution

http://blogs.msmvps.com/deborahk/
 angular-2-getting-started-problem-solver/

Post to the course discussion

 https://app.pluralsight.com/library/course s/angular-2-getting-started-update /discussion



Summary



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Application Architecture

