

First Things First



Deborah Kurata

CONSULTANT | SPEAKER | AUTHOR | MVP | GDE

@deborahkurata | blogs.msmvps.com/deborahk/





Module Overview



Selecting a Language


Selecting an Editor

Setting up an Angular Application

About Modules



JavaScript Language Specification

A yellow square containing the letters 'JS' in a large, bold, black sans-serif font.

ECMAScript (ES)

ES 3

ES 5

ES 2015 (formerly known as ES 6)

- Must be transpiled



Selecting a Language

ES 5

- Runs in the browser
- No compile required

ES 2015

- Lots of new features (classes, let, arrow, etc.)

TypeScript

- Superset of JavaScript
- Strong typing
- Great IDE tooling

Dart

- No JavaScript



What Is TypeScript?



Open source language

Superset of JavaScript

Transpiles to plain JavaScript

Strongly typed

- TypeScript type definition files (*.d.ts)

Class-based object-orientation



Learning More



TypeScript Playground

<http://www.typescriptlang.org/Playground/>

Pluralsight Courses

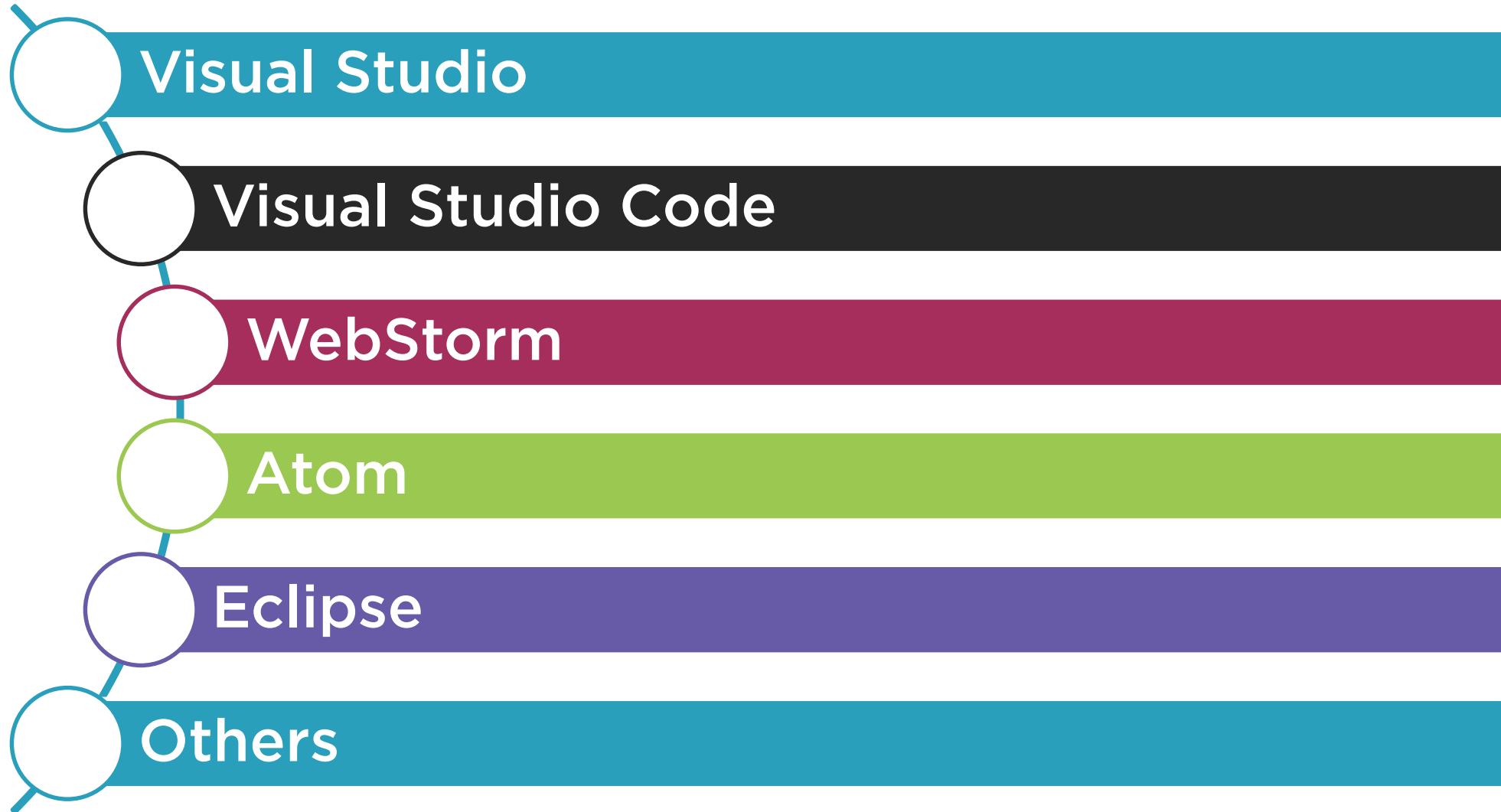
"TypeScript Fundamentals"

"AngularJS with TypeScript"

"Using ES6 with TypeScript"



TypeScript Editors



Visual Studio Code

The image shows the Visual Studio Code website on the left and a screenshot of the Visual Studio Code application interface on the right.

Visual Studio Code Website:

- Header: Visual Studio Code, Docs, Updates, Blog, Community, Extensions, FAQ, Search Docs, Download.
- Main Text: Code editing. Redefined. Free. Open source. Runs everywhere.
- Download Options: Windows (7, 8, 10), .deb (Debian, Ubuntu), .rpm (Red Hat, Fedora, CentOS), OS X (OS X Yosemite, El Capitan).
- Footer: By using VS Code, you agree to its license and privacy statement.

Visual Studio Code Application Interface:

- File Explorer: Extensions, @popular.
- Extensions List:
 - C# 1.2.2 (356K stars) - Microsoft - Install
 - Python 0.10.0 (211K stars) - Don Jayamanne - Install
 - Debugger for Chrome 1.48 - Microsoft JS Diagnostics - Install
 - C/C++ 0.7.0 (143K stars) - Microsoft - Install
 - Go 0.6.39 (99K stars) - Luke Hoban - Install
 - ESLint 0.10.0 (88K stars) - Dirk Baeumer - Install
- Editor: app.ts, www.ts, package.json, README.md.
- Code Snippets:

```
1 import app from './app';
2 import debugModule = require('debug');
3 import http = require('http');
4
5 const debug = debugModule('node-express-typescript:server');
6
7 // Get port from environment and store in Express.
8 const port = normalizePort(process.env.PORT || '3000');
9 app.set('port', port);
10
11 // create express app
12 const server = express();
13 server.listen(port);
14 server.on('error', (err) => {
15   if (err.syscall !== 'listen') {
16     throw err;
17   }
18   const bound = port;
19   if (err.code === 'EADDRINUSE') {
20     console.log(`Address ${bound} is already in use.`);
21     port = parseInt(port, 10) + 1;
22     server.listen(port);
23   }
24 });
```
- Status Bar: master, 11 131, 0 0 0, Ln 9, Col 21, Spaces: 2, UTF-8, LF, TypeScript.

<https://code.visualstudio.com/>



Learning More



Visual Studio Code Site

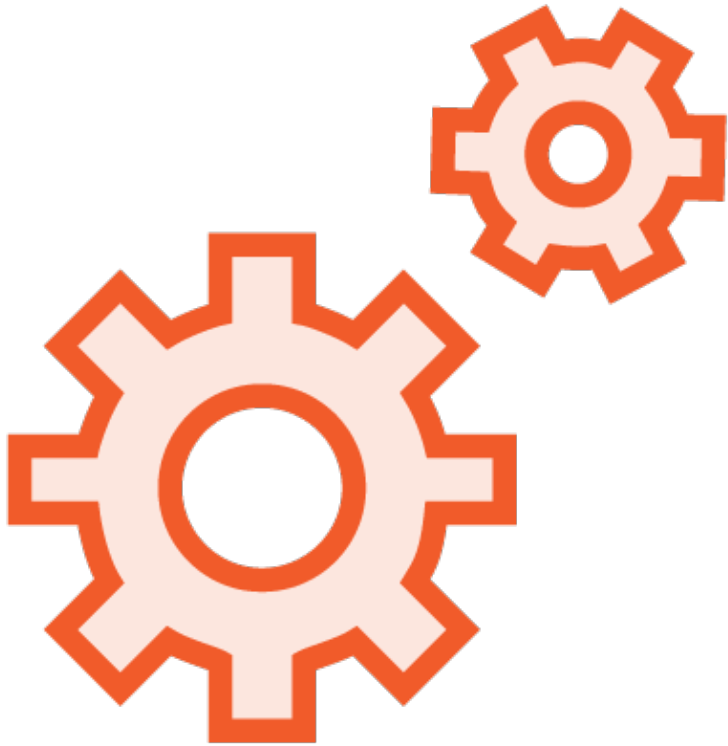
<https://code.visualstudio.com/>

Pluralsight Course

"Visual Studio Code"



Setting up Our Environment



npm

Set up the Angular application



npm



Node Package Manager

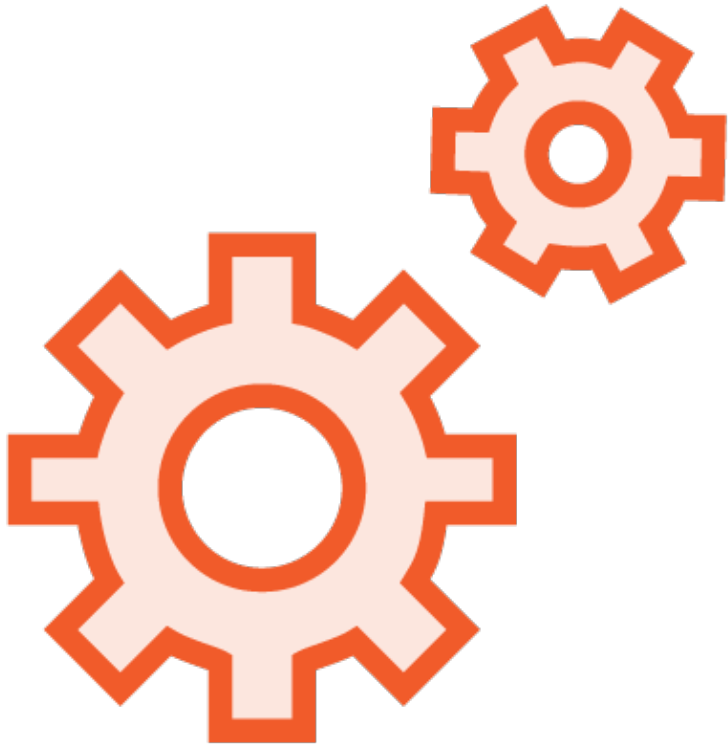
Command line utility

Installs libraries, packages, and applications

<https://nodejs.org/en/download>



Setting up an Angular Application



1. **Create an application folder**
2. **Add package definition and configuration files**
3. **Install the packages**
4. **Create the app's Angular Module**
5. **Create the main.ts file**
6. **Create the host Web page (index.html)**

Setting up an Angular Application



Manually perform each step

Angular CLI

<https://github.com/angular/angular-cli>

Starter files

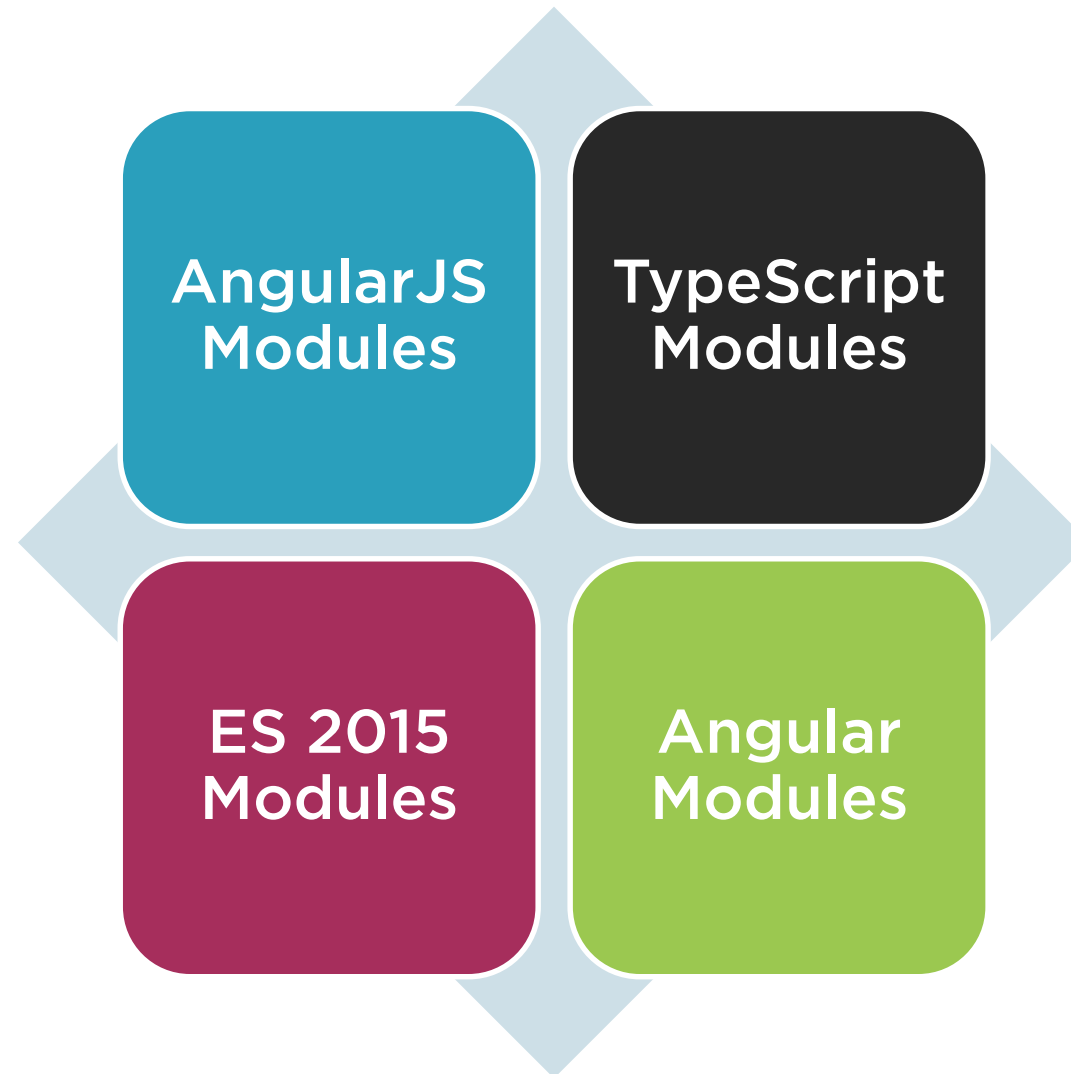
<https://github.com/DeborahK/Angular-GettingStarted>



Namespaces

Modules

Code Organization



ES 2015 Modules

Export

product.ts

```
export class Product{  
}
```

product.js

```
function Product() {  
}
```



Transpile

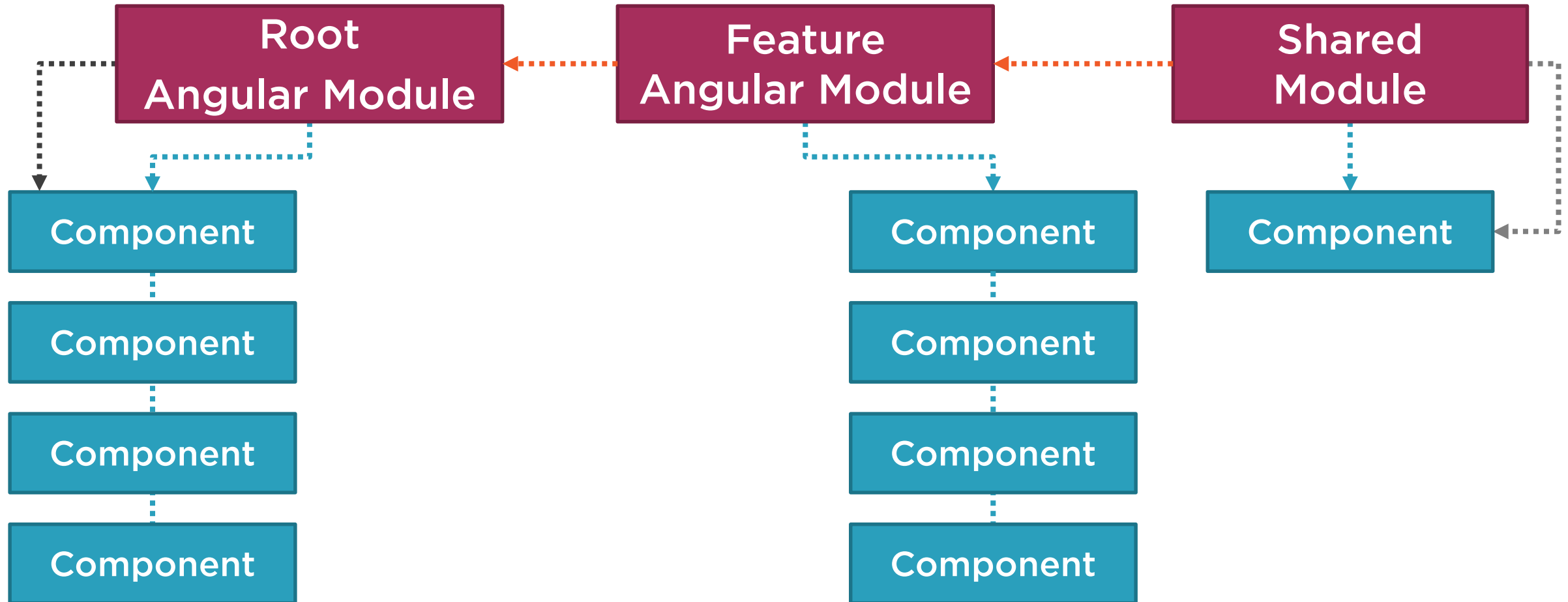
Import

product-list.ts

```
import { Product } from  
'./product'
```



Angular Modules



Modules

ES Modules

Code files that
import or export something

Organize our code files

Modularize our code

Promote code reuse

Angular Modules

Code files that
organize the application into cohesive
blocks of functionality

Organize our application

Modularize our application

Promote application boundaries





Web Browser

Web
Server

URL Request (www.mysite.com)

Response

index.html

JavaScript



Summary



Selecting a Language

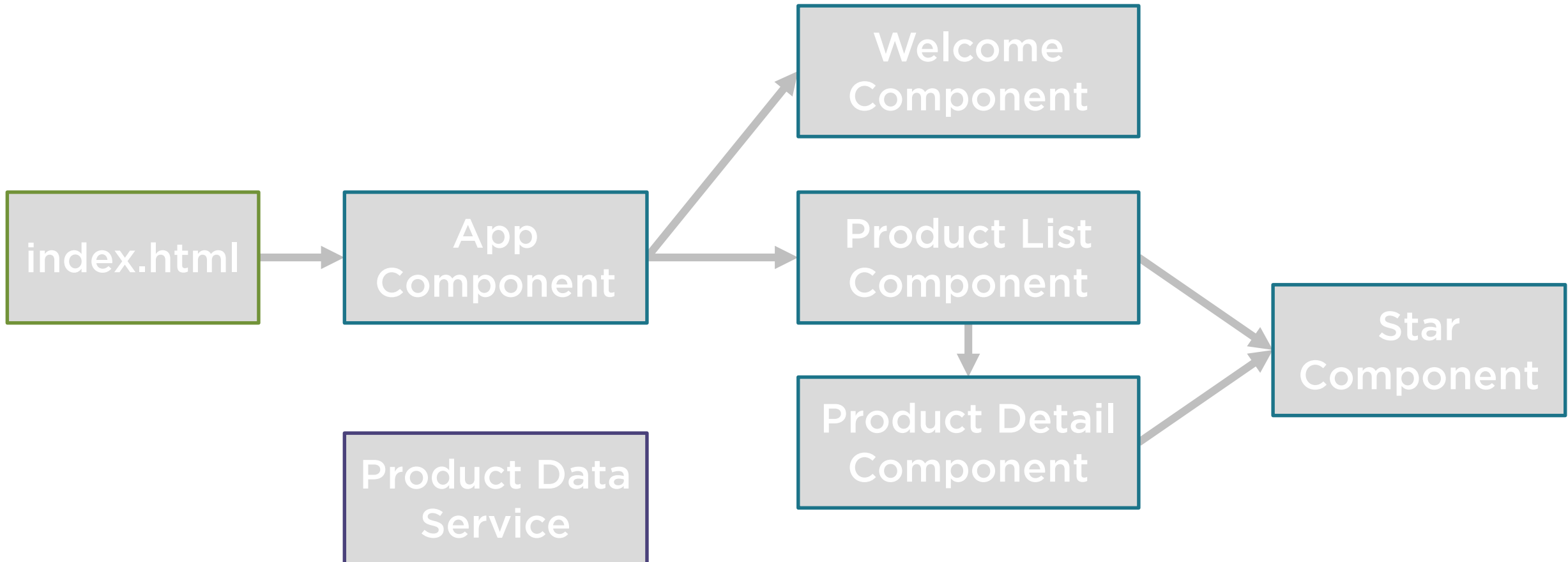
Selecting an Editor

Setting up an Angular Application

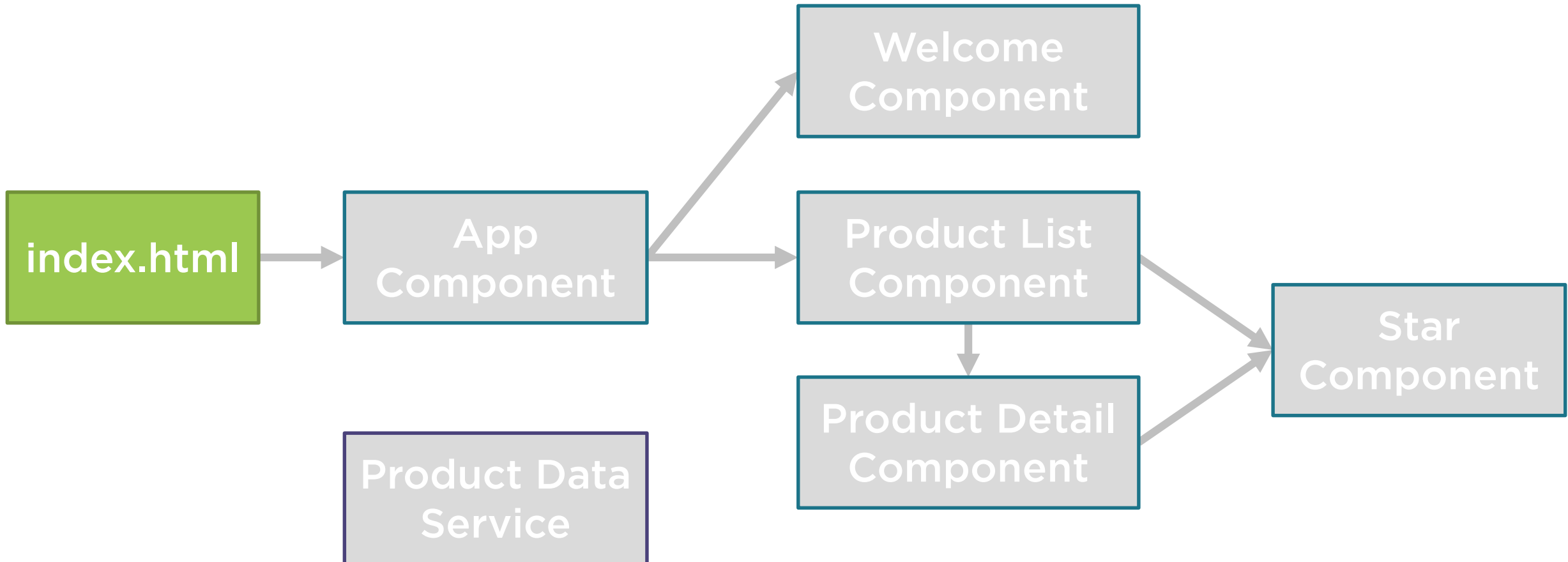
About Modules



Application Architecture



Application Architecture



Application Architecture

