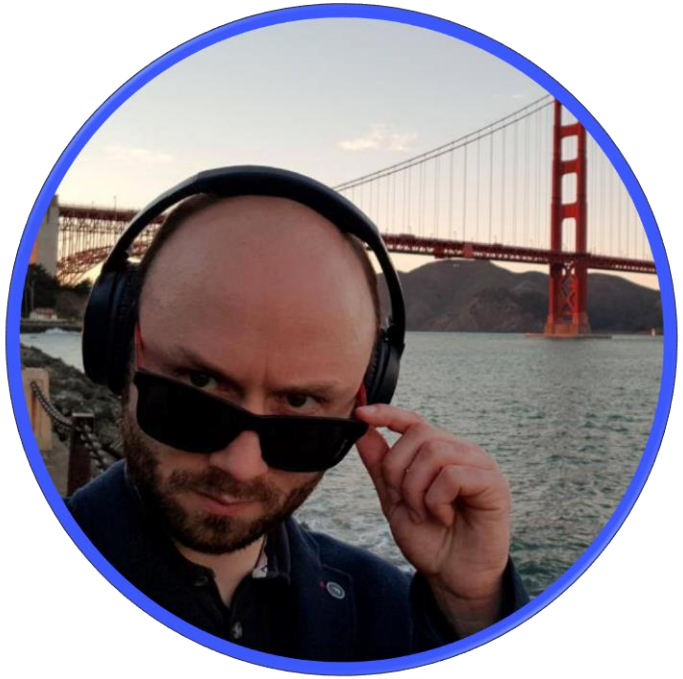
Web and Mobile Code Sharing with Angular and NativeScript

@sebawita



Sebastian Witalec

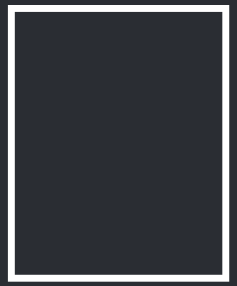
Developer Advocate
@Progress

@sebawita

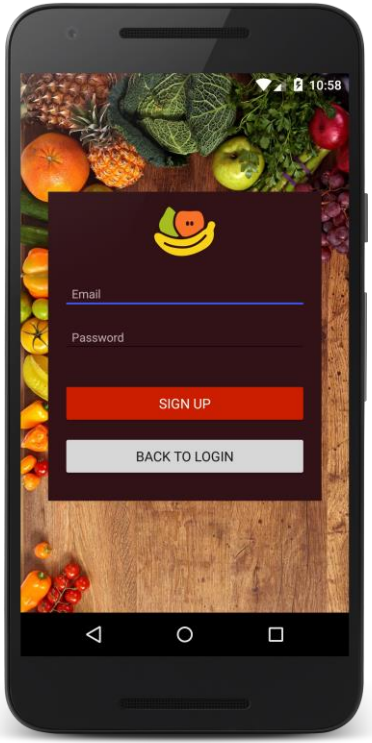
NativeScript is…

an open source framework for building truly native mobile apps with JavaScript. Use web skills, like TypeScript, Angular, Vue and CSS, and get native UI and performance on iOS and Android.

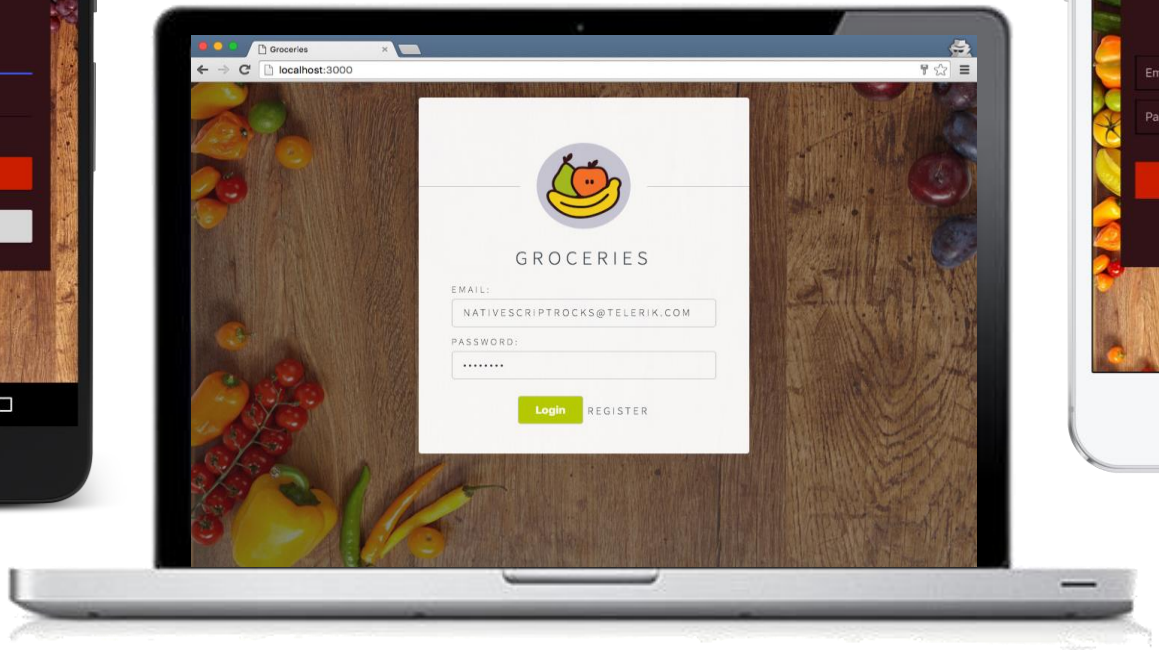
“The goal”



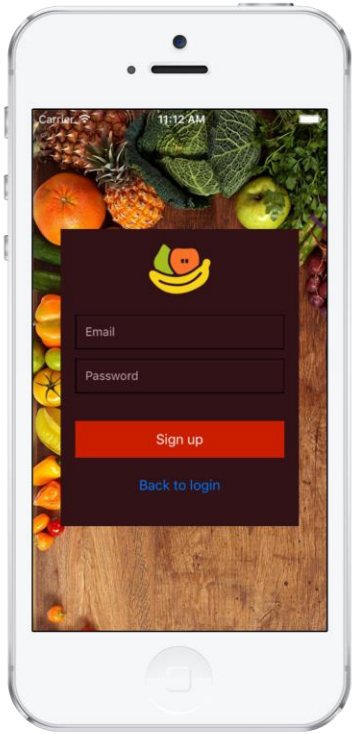
Android



Web



iOS



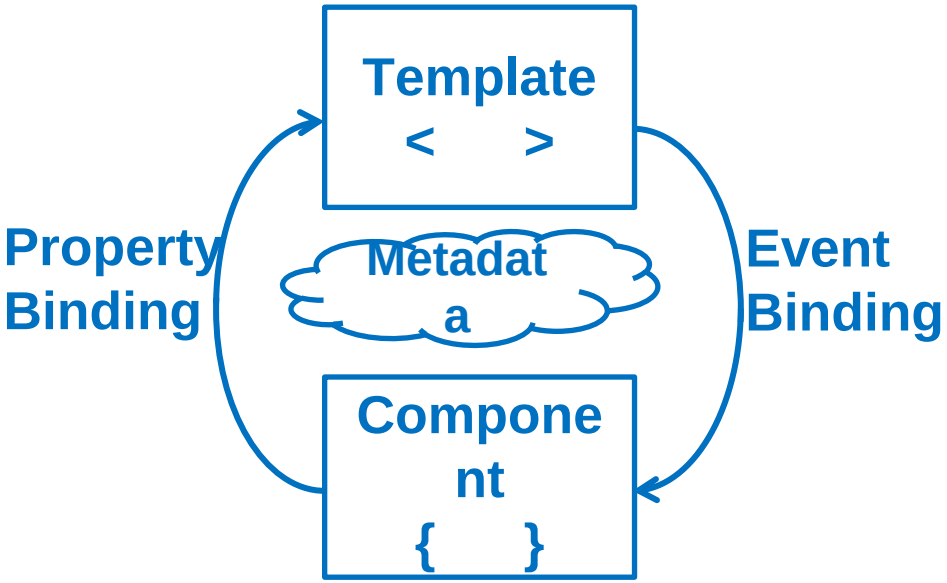
iOS

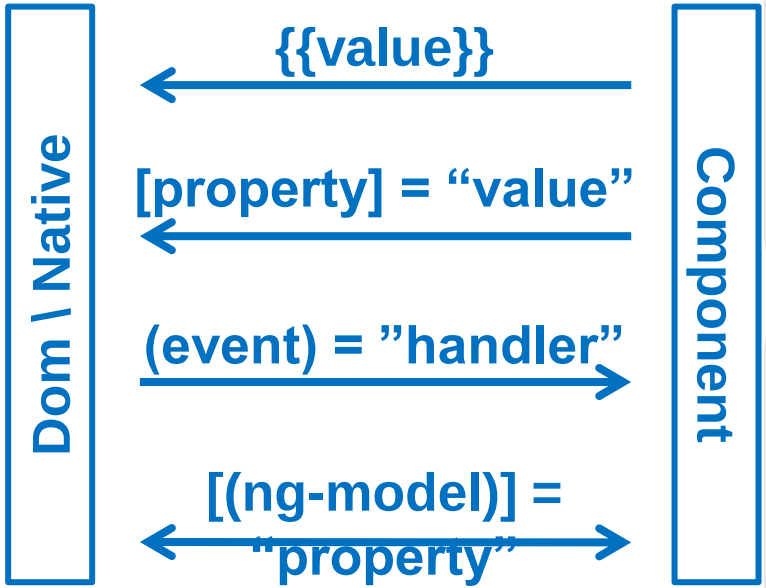
Android


Architecture
iOS
Android
JS
Web

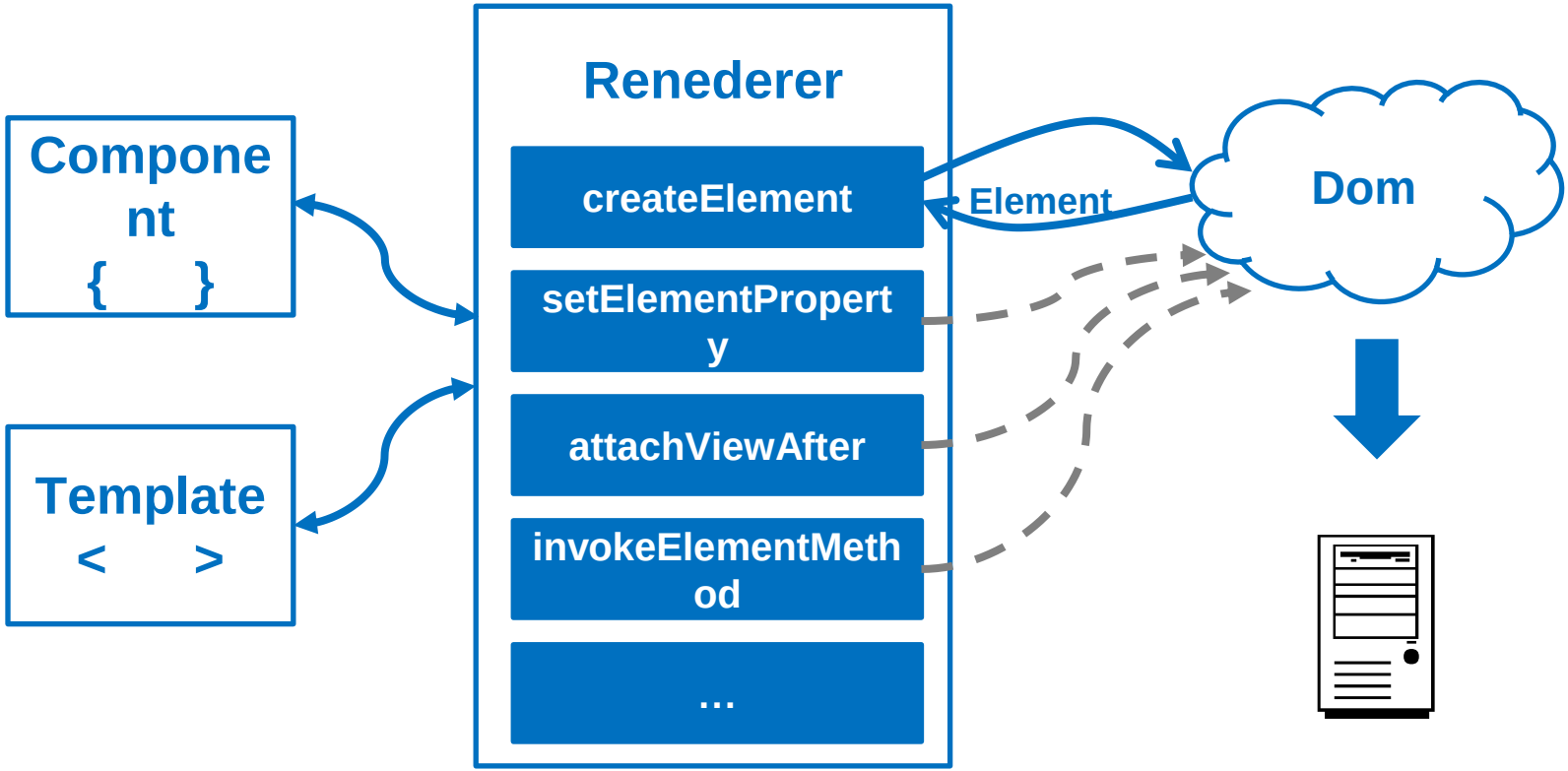
Angular Architecture
Helping with code sharing

Data Binding





Renderer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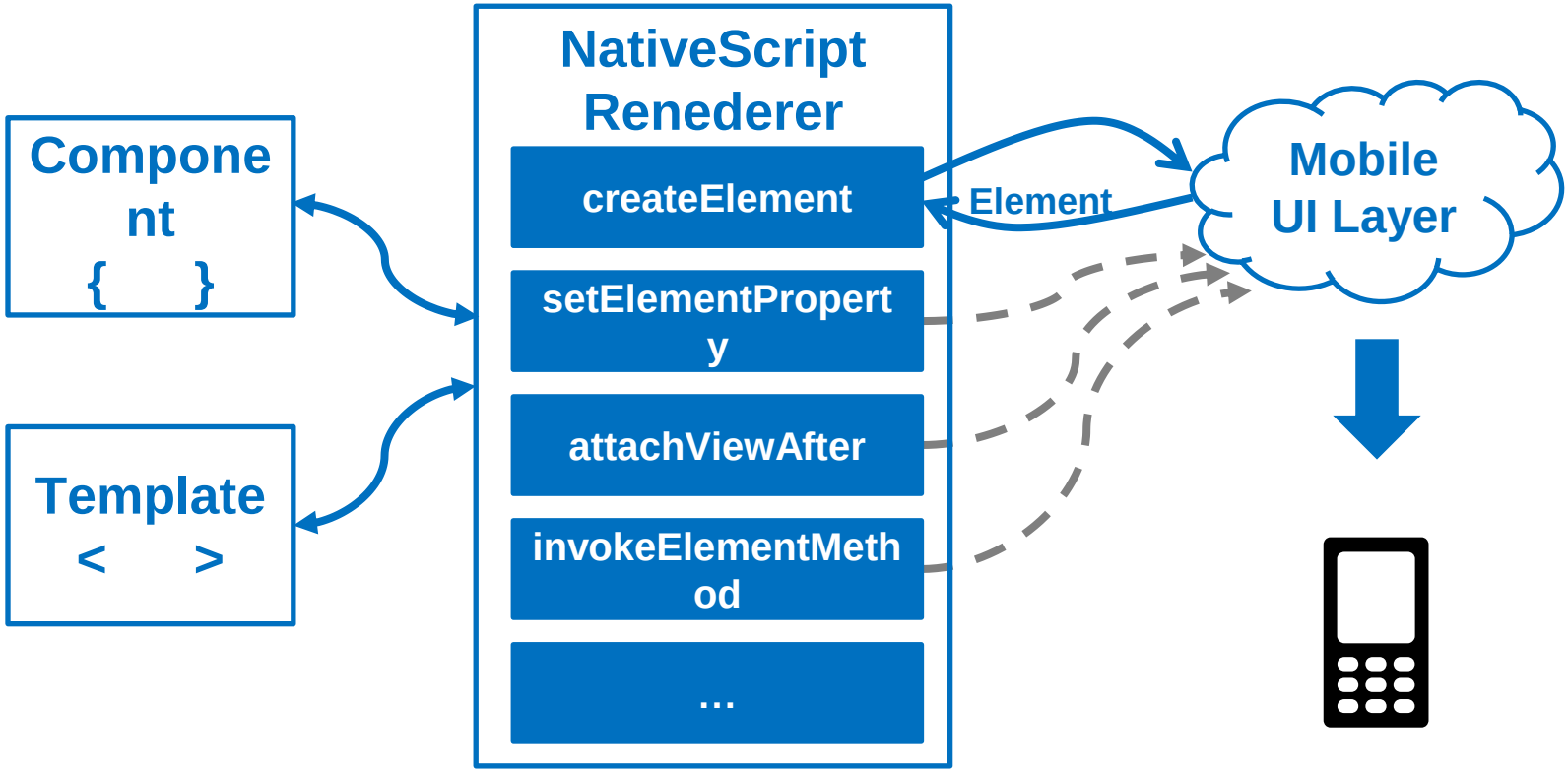
Renderer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invokeElementMeth
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Element
Mobile
UI Layer

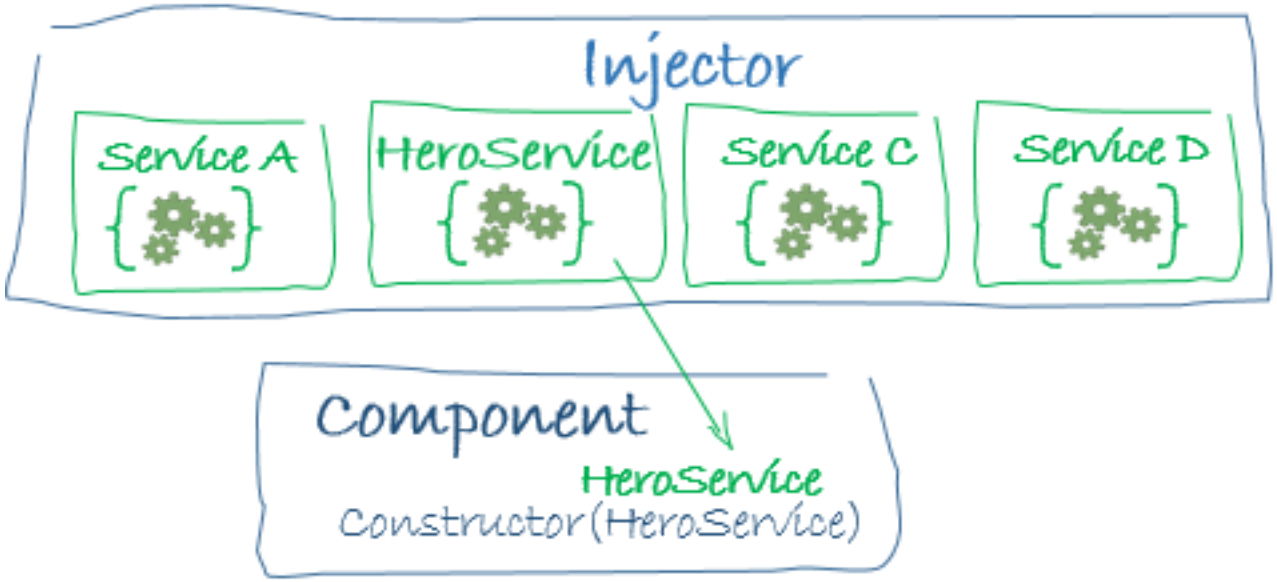
Component

```
export class MyComponent {
    name = 'Sebastian';
    twitter = '@sebawita';

    sayHelloTo(name) {
        alert(’Hi ' + name);
    }
}
```

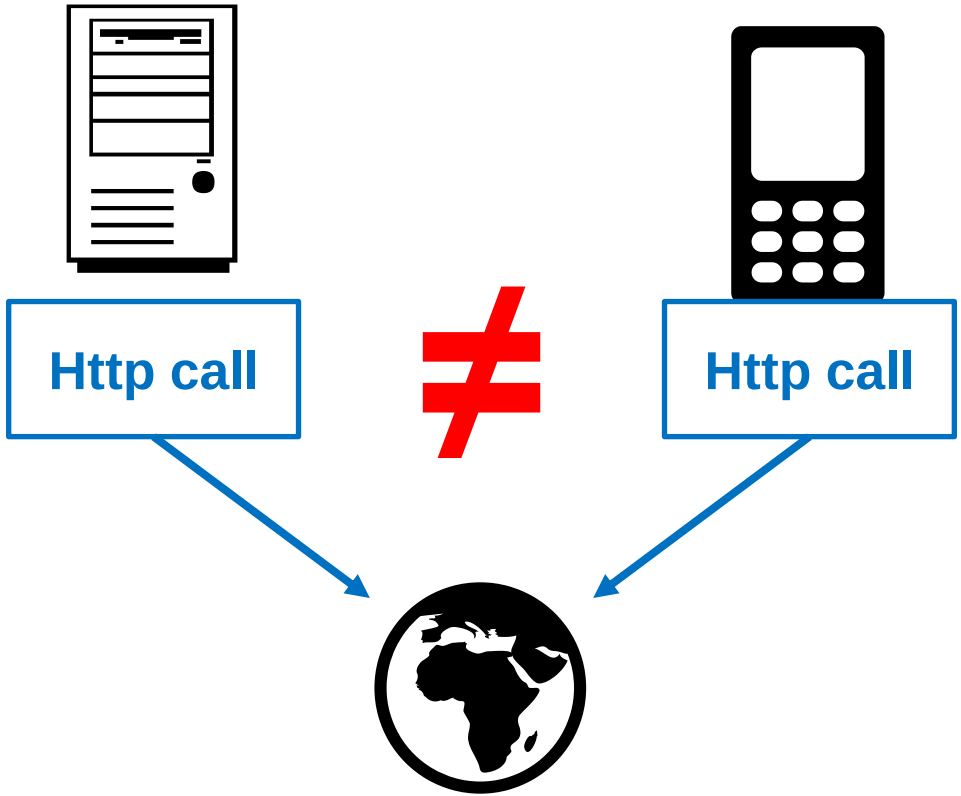
Template

```
<div>
    name: {{ name }}
    twitter: {{ twitter }}
    <button (click)="sayHelloTo('web')">Hello Web</button>
</div>

<StackLayout>
    <label [text]="'name' + name"></label>
    <label [text]="'twitter ' + twitter "></label>
    <button (tap)="sayHelloTo('mobile')">Hello
Mobile</button>
</StackLayout >
```

Dependency Injection



Http



HttpClientModule

```
import { HttpClientModule }
        from '@angular/common/http';

@NgModule({
   imports: [
      HttpClientModule,
      …
 ]
```

NativeScriptHttpClientModule

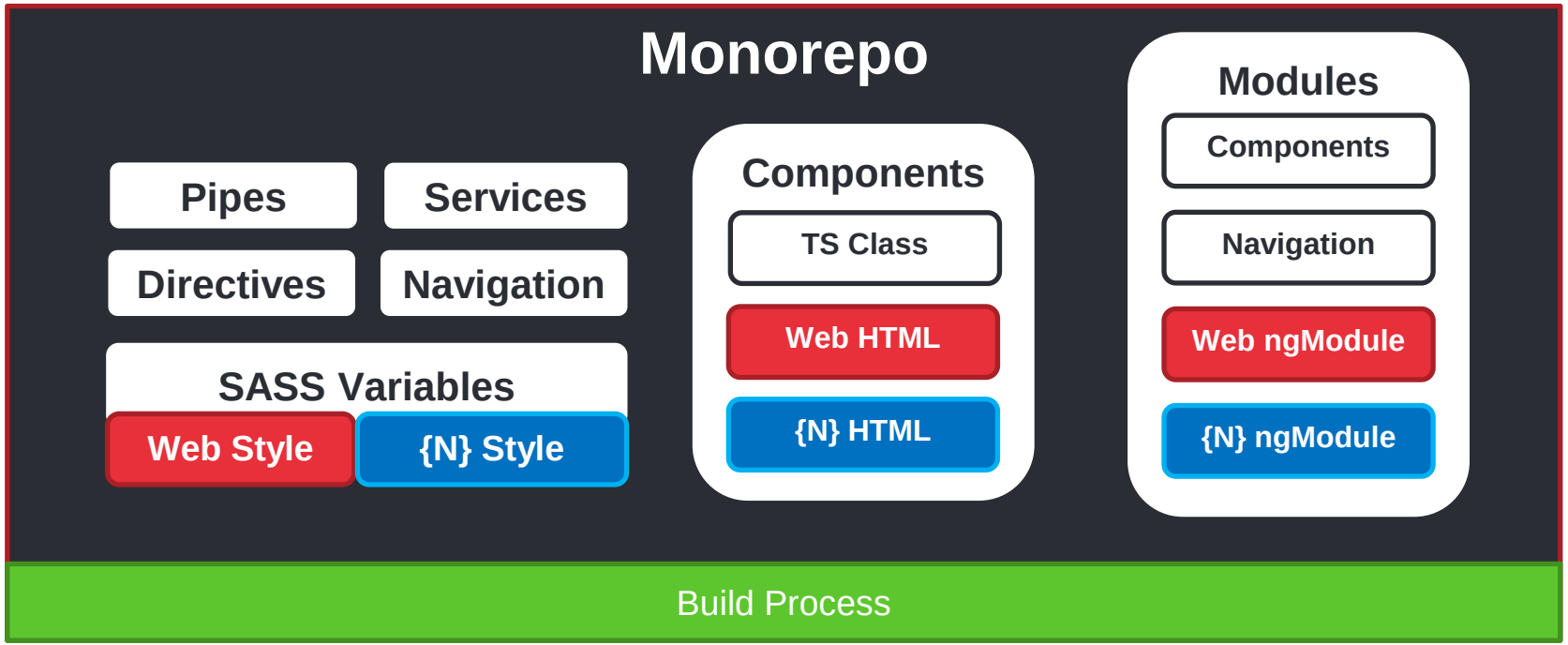
```
import { NativeScriptHttpClientModule }
        from 'nativescript-angular/http-client';

@NgModule({
    imports: [
        NativeScriptHttpClientModule,
        …
 ]
```

HttpClient

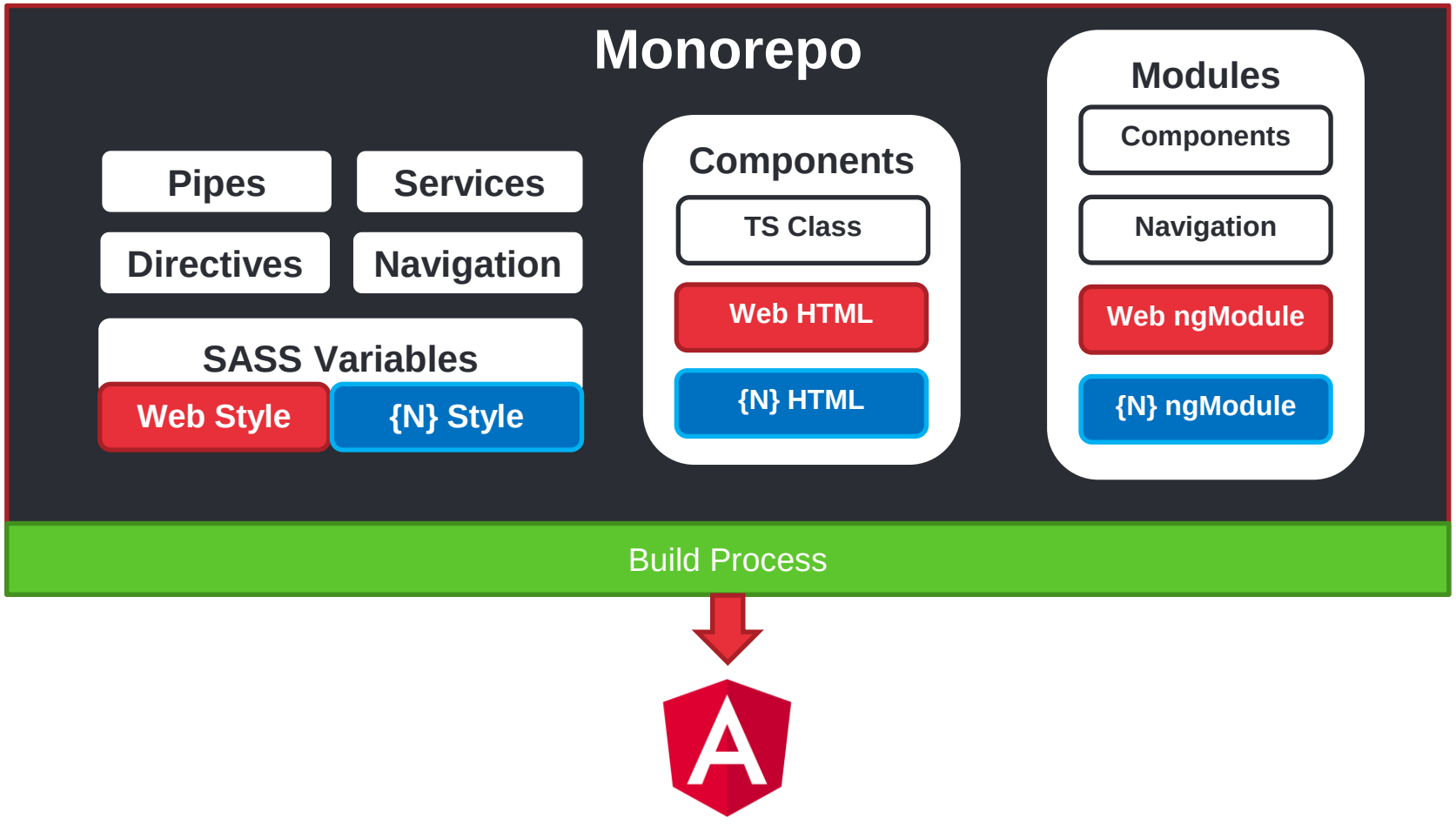
```
import { HttpClient } from '@angular/common/http';

@Injectable()
export class MyHttpService {
    constructor(private http: HttpClient) {
    }

    getData(url: string) {
        return this.http.get(url);
    }

}
```

Code Sharing
How to do it?

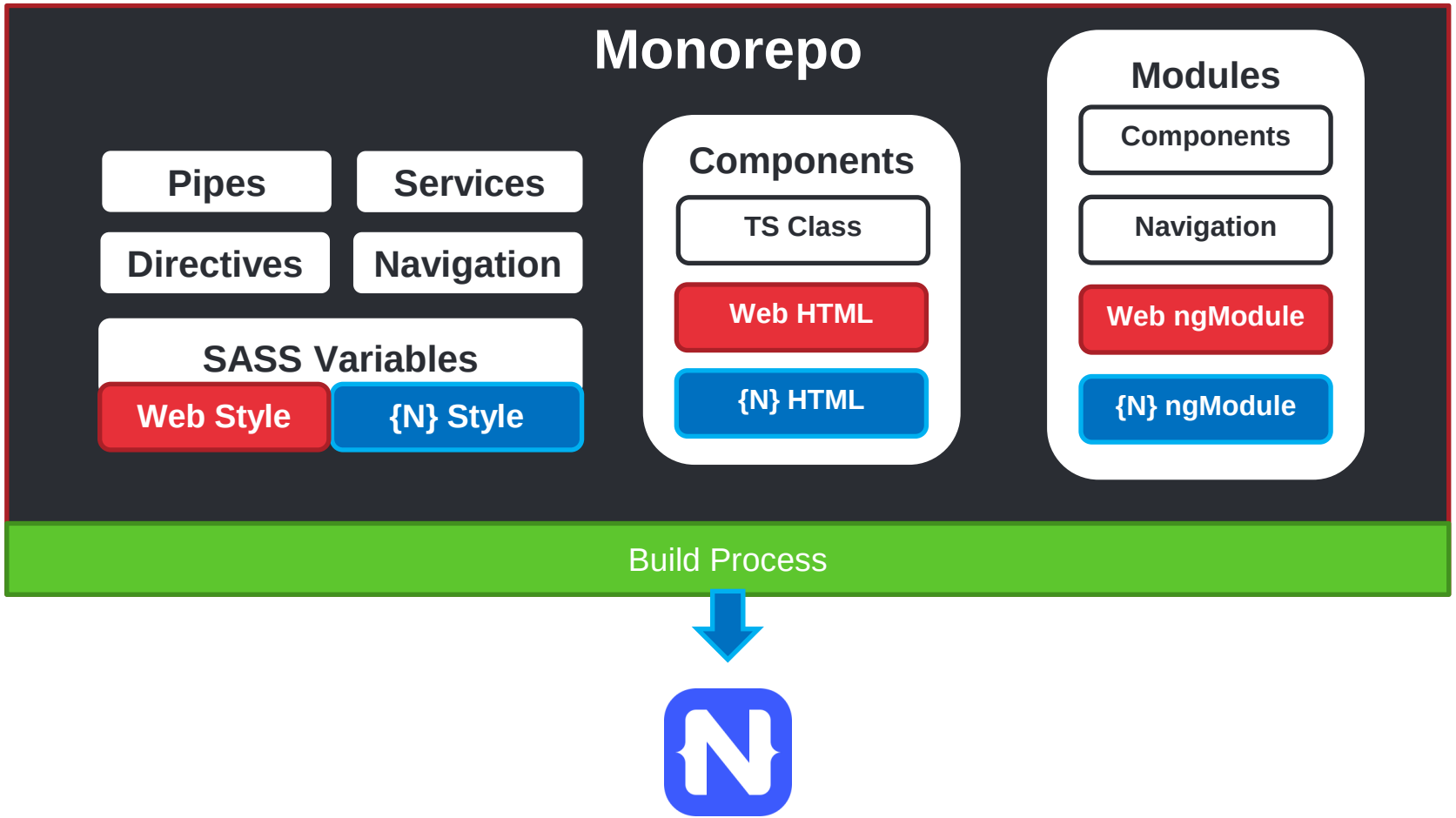
Shared Project Structure



Shared Project Structure



Shared Project Structure

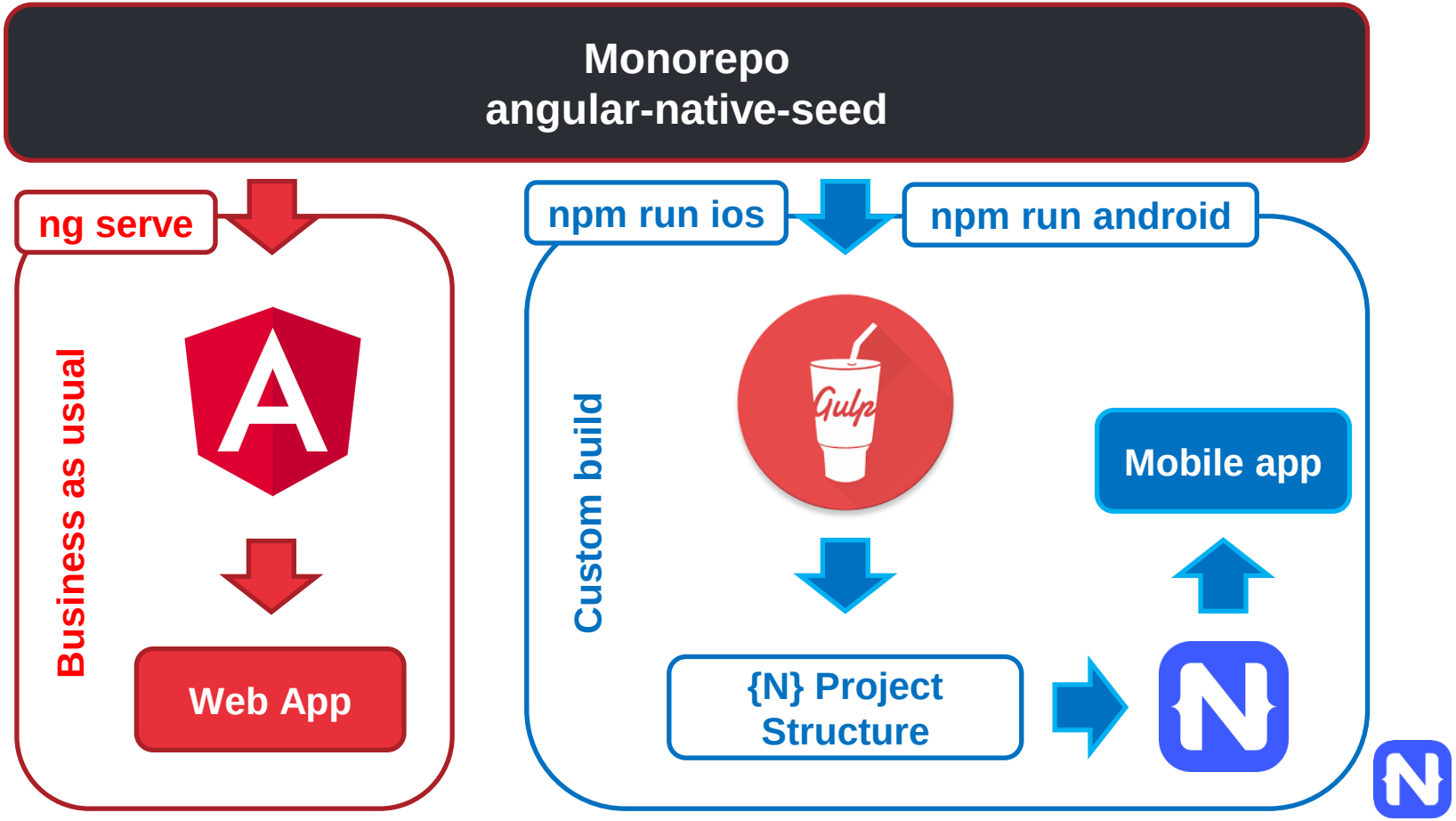


“HOW DO I EVEN?”

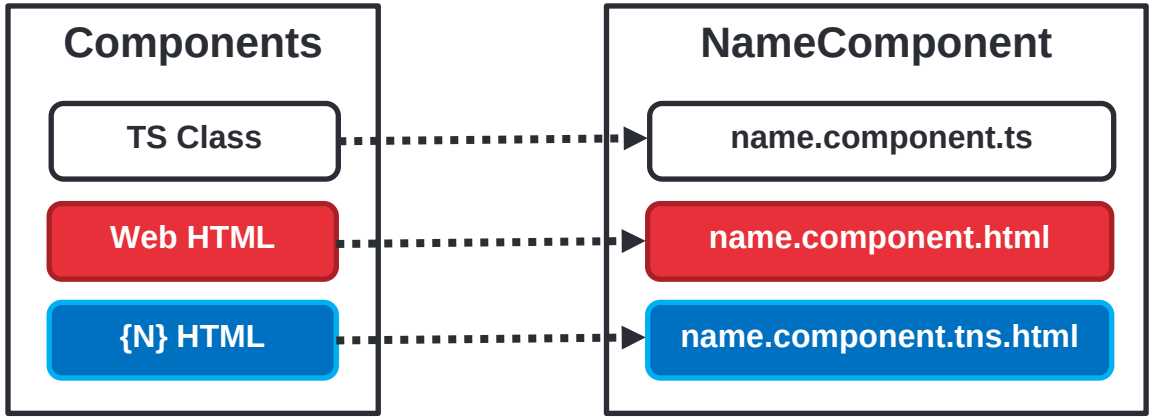
Project seed
angular-native-seed

https://github.com/TeamMaestro/angular-native-seed

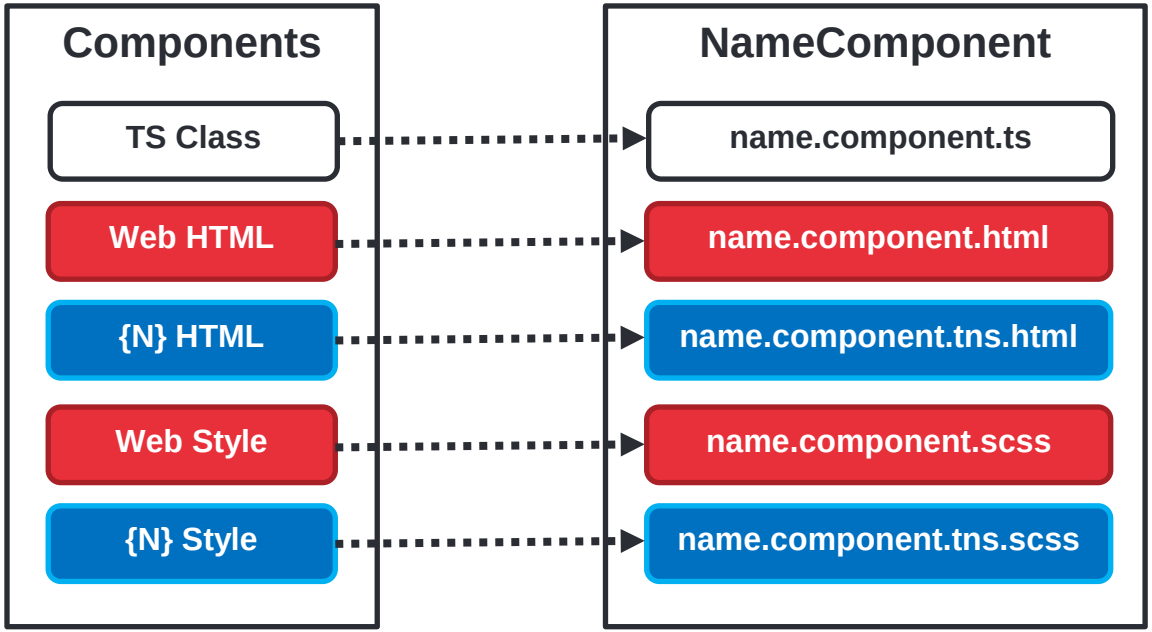
How does it work?



How to do code splitting?



How to do code splitting?



“Are there any tools to help me do the magic?”

nativescript-angular-cli

> tns extension install nativescript-angular-cli

> tns generate shared-component name
> tns g sc name

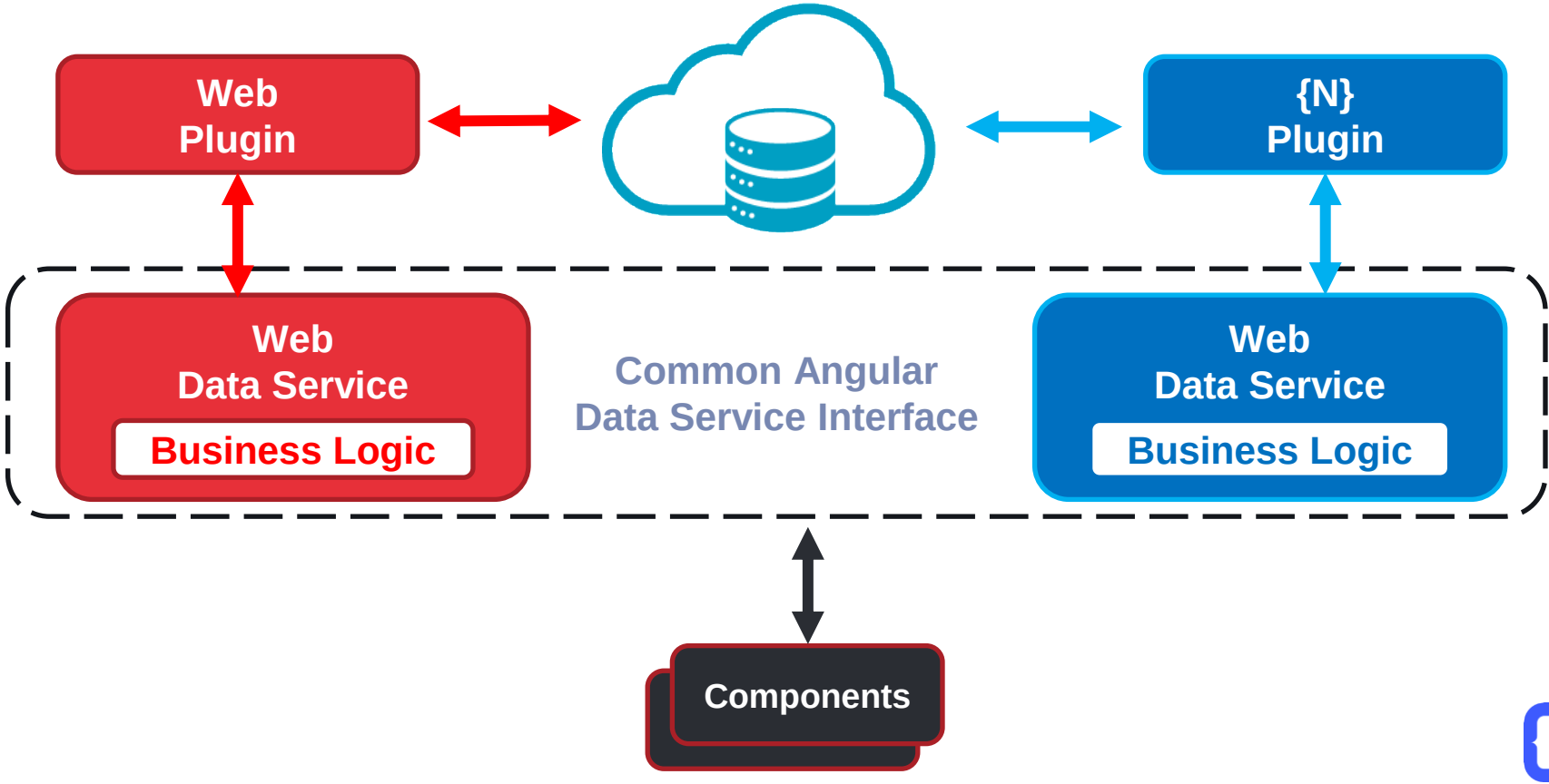
> tns generate shared-module name
> tns g sm name

“What are the challenges?”

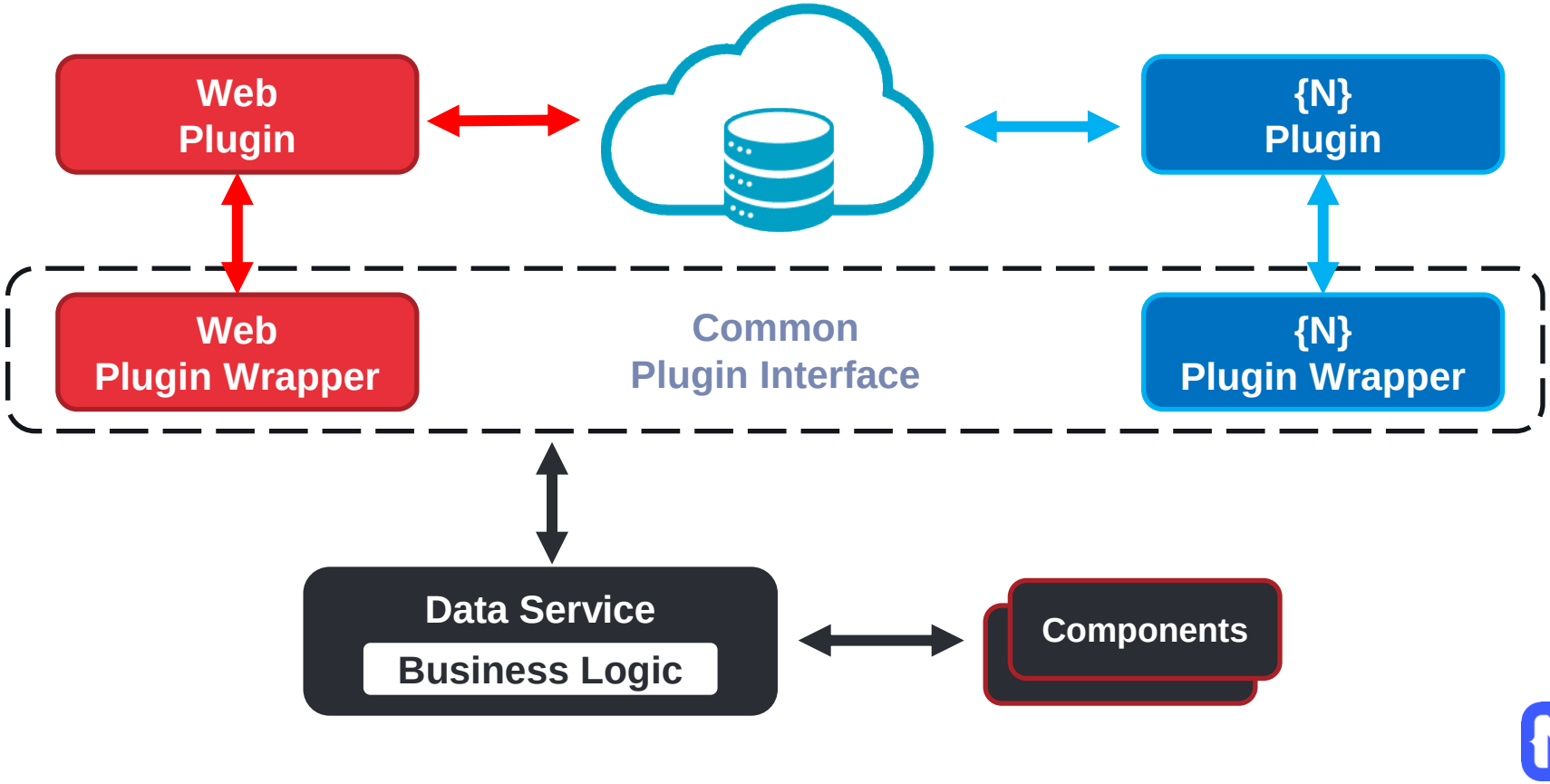
angularfire2 vs {N} firebase

Challenge
Library API mismatch

Common Service Abstraction



Common Plugin Abstraction

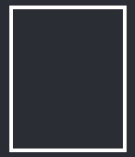


Demo

https://github.com/sebawita/pet-bros

The near future (almost there)

New Shared project template



New Shared Project

Similar to TeamMaestro Seed, but:

- No separate nativescript build folder

- Shared node_modules

- Supported by {N} team 🎉

New Shared Project

- *tns create myApp --ng-shared*

- *cd myApp*
- *tns run [ios | android]* <= *to build {N}*
- *ng serve* <= *to build web*

New Webpack build

New Webpack build

- *With Livesync support*

- *Configurable .tns file filter*
  - *No need for Gulp*

Integration with Angular CLI

Angular CLI Integration

- Call Angular CLI generator from {N} projects:

ng [generate | g] name

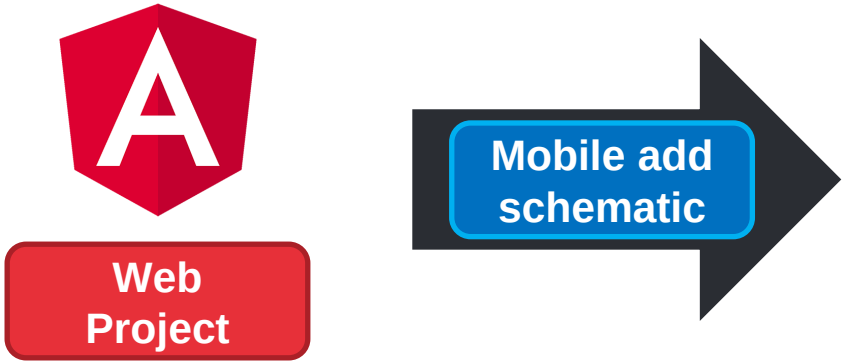
- Override templates for component and module

ng g [component | module | pipe | service] name

Thank you Schematics

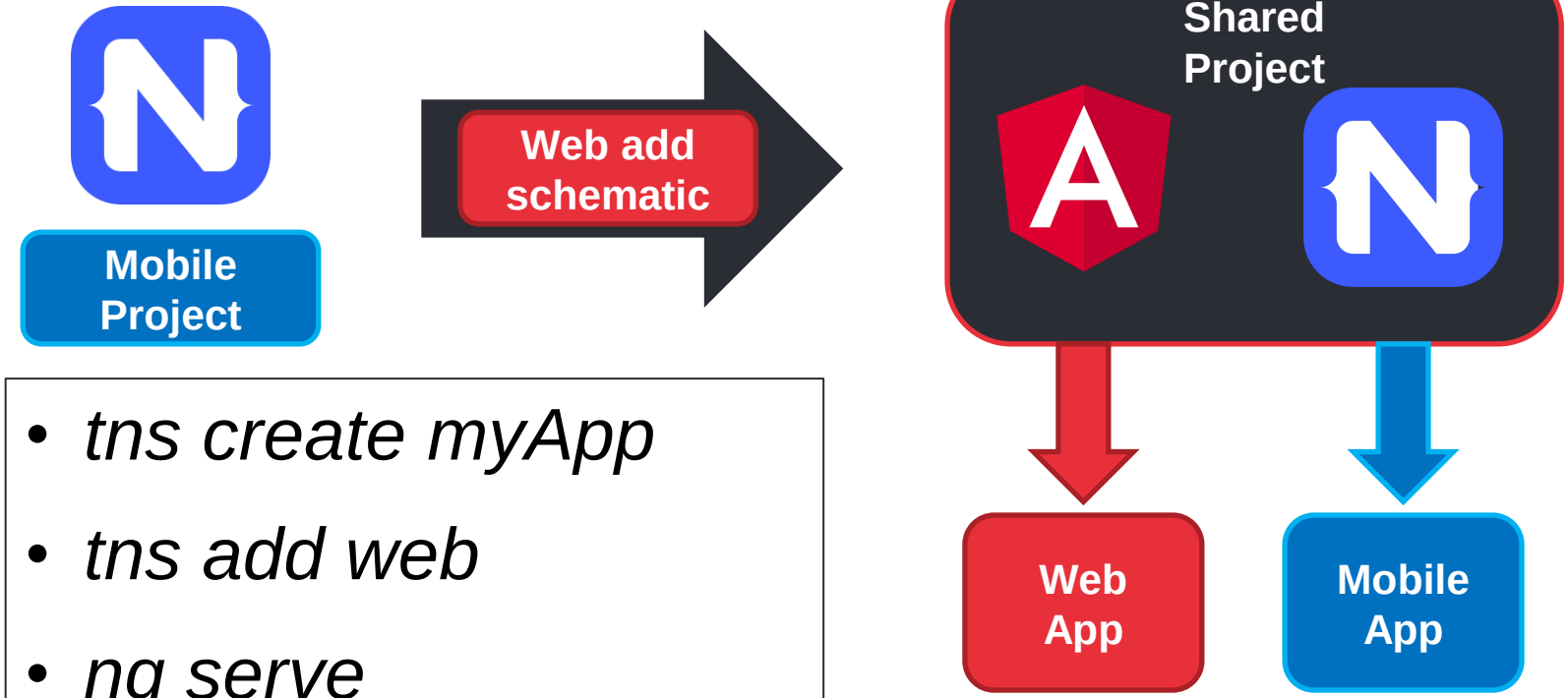
Project Migration with Schematics

Project Migration



- *ng new myApp*
- *tns add mobile*
- *ng serve*
- *tns run [ios | andoird]*

Project Migration



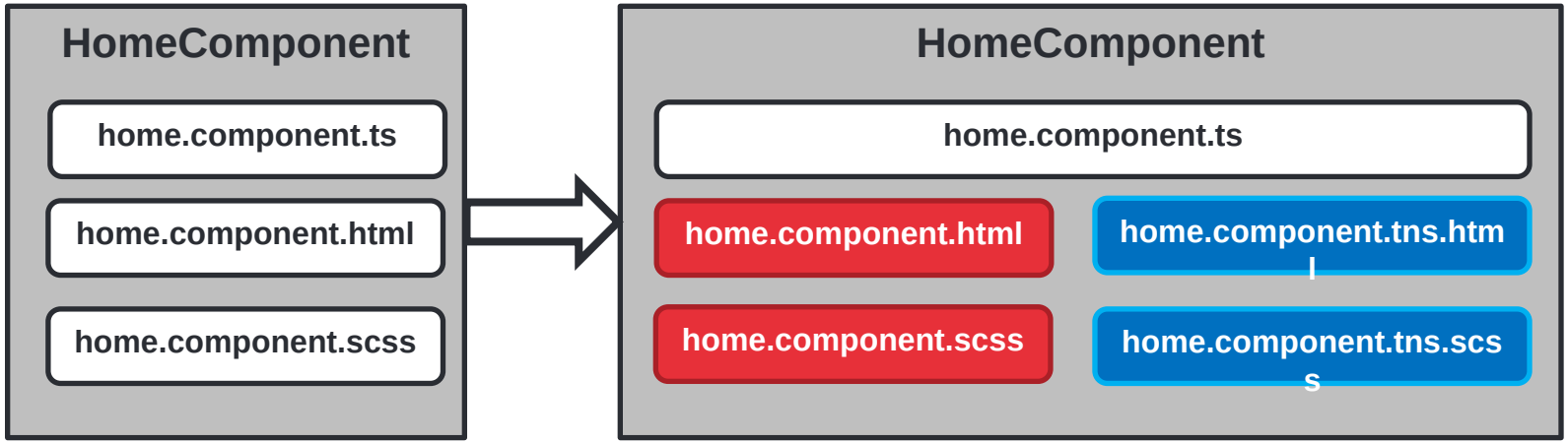
- *tns create myApp*
- *tns add web*
- *ng serve*
- *tns run [ios | andoird]*

Demo

https://github.com/nativescript/nativescript-schematics

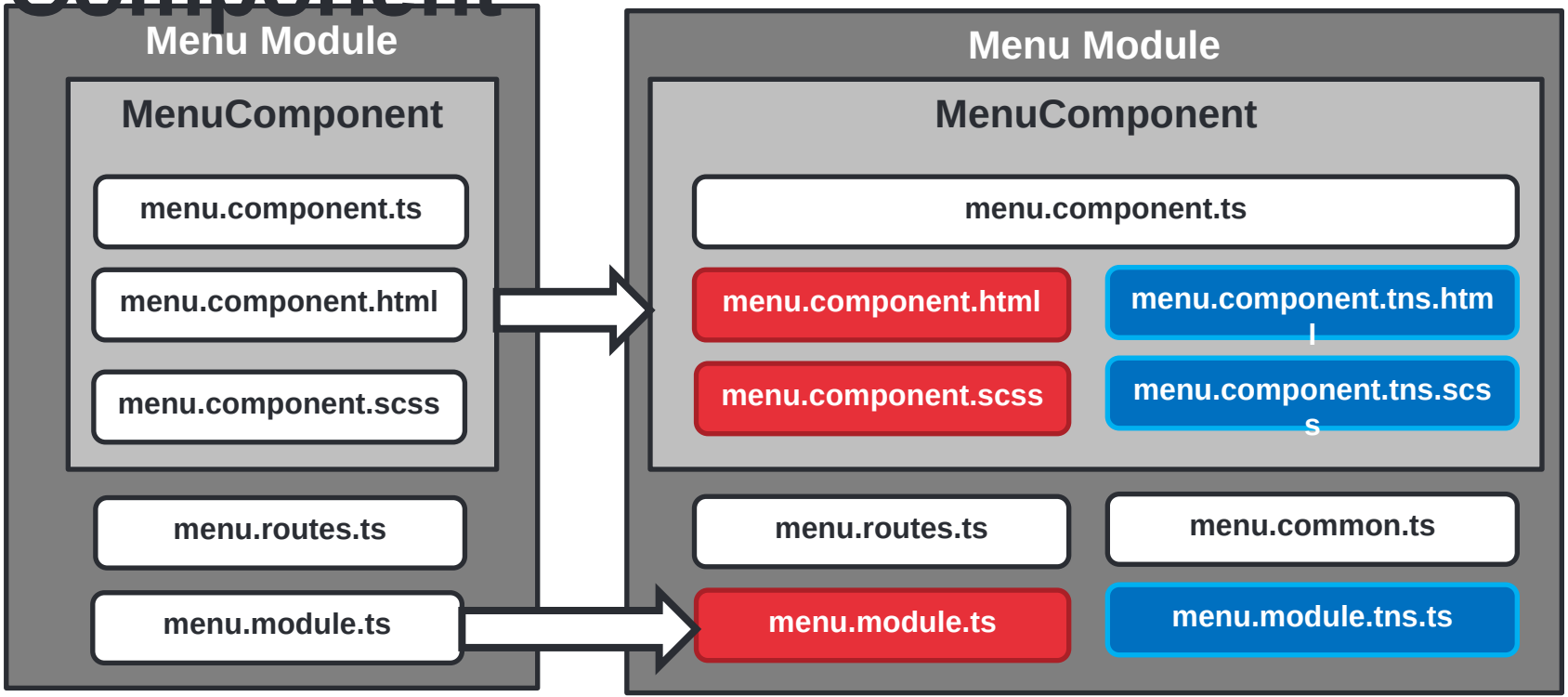
This has a potential for more

Project Migration: Convert Component



- *tns convert component home*

Project Migration: Convert Component



- *tns convert module menu*

Angular CLI extension

ng new myApp --mobile / --nativescript

ng add --mobile

ng convert module name

ng serve --mobile

Resources

Article:

https://www.nativescript.org/blog/code-sharing-between-web-and-mobile-with-angular-and-nativescript

Talk from {N} Dev Day:

https://www.youtube.com/watch?v=HMPkXk_vXDw

NativeScript Angular CLI:

https://github.com/sebawita/nativescript-angular-cli

Github:

https://github.com/sebawita/pet-bros

https://github.com/telerik/ng2-dashboard

https://github.com/nativescript/nativescript-schematics

THANK YOU

THE END