Conquer Web and Mobile with a Single Project

#Angular #NativeScript

@sebawita

Sebastian Witalec

Senior Developer Advocate
@Progress

@sebawita

NativeScript is...

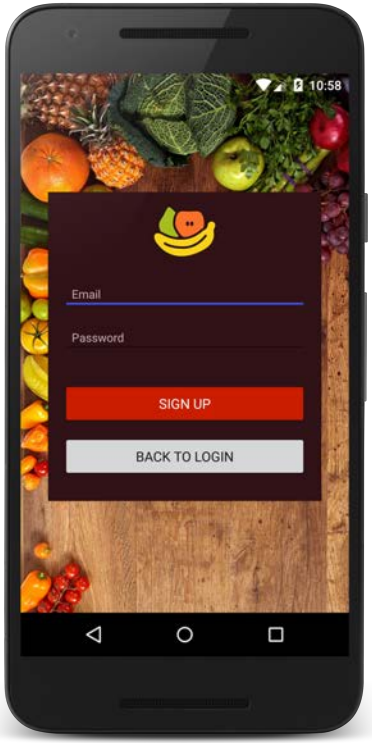
an open source framework for building truly native mobile apps with JavaScript.

Use web skills, like:
TypeScript, Angular, Vue and CSS,
and get native UI & performance
on iOS and Android.

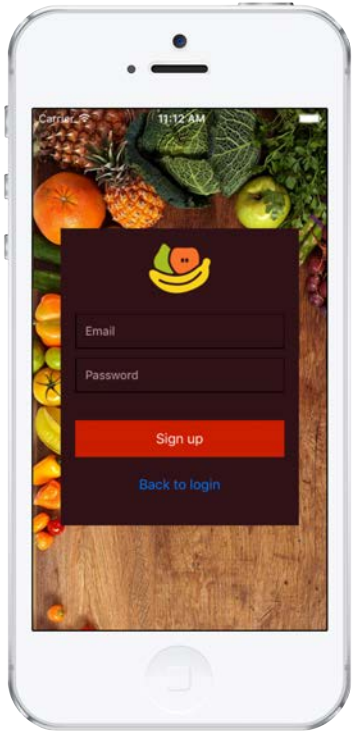
Code Sharing

The Goal

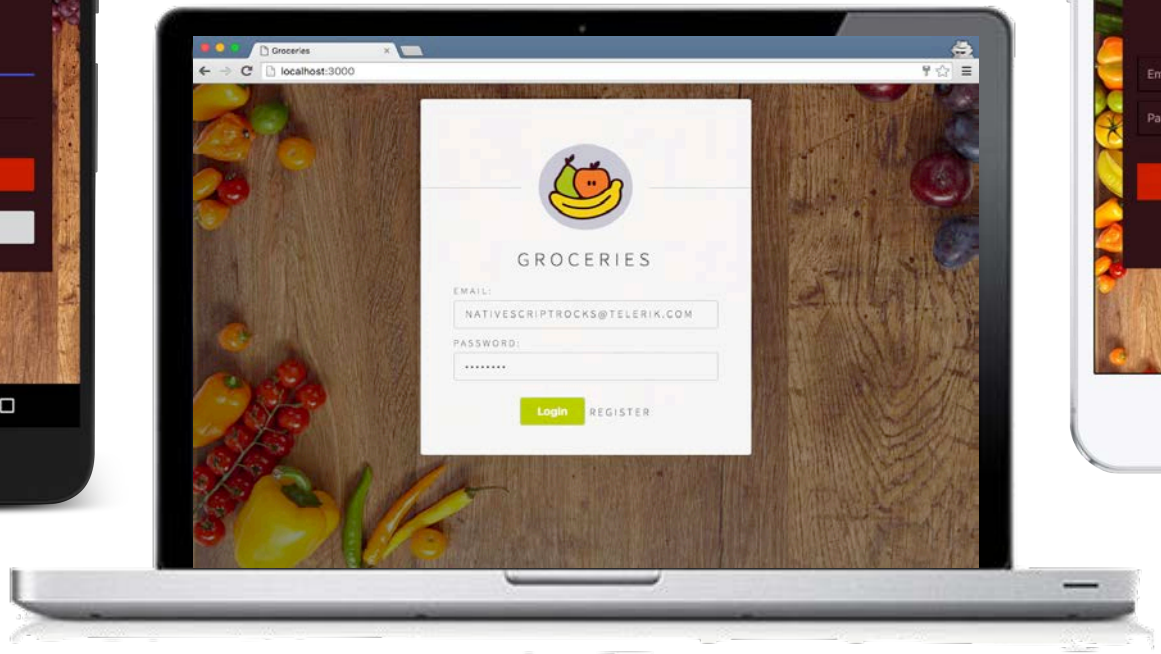
Android



iOS



Web



One project – two...

One project – two... erm ... dogs

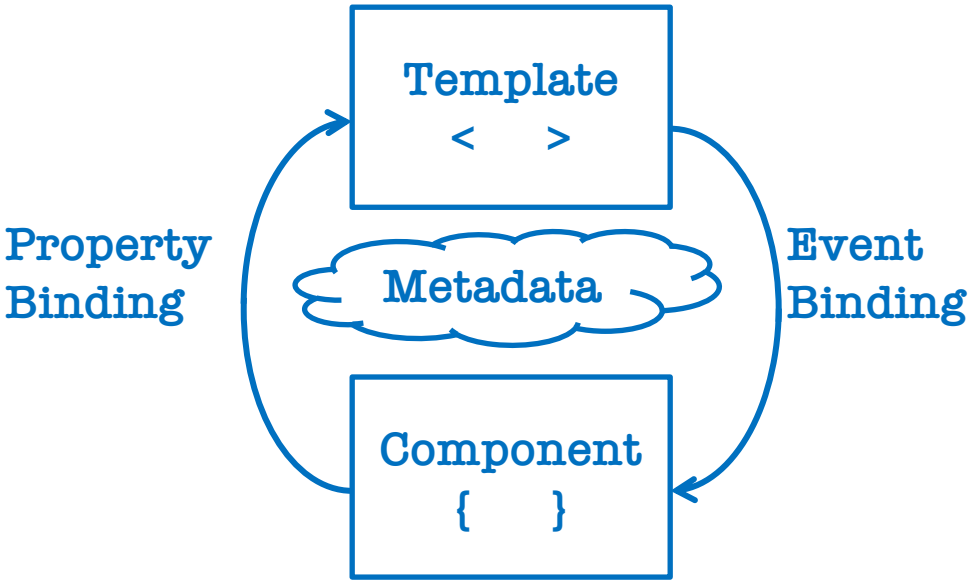
iOS

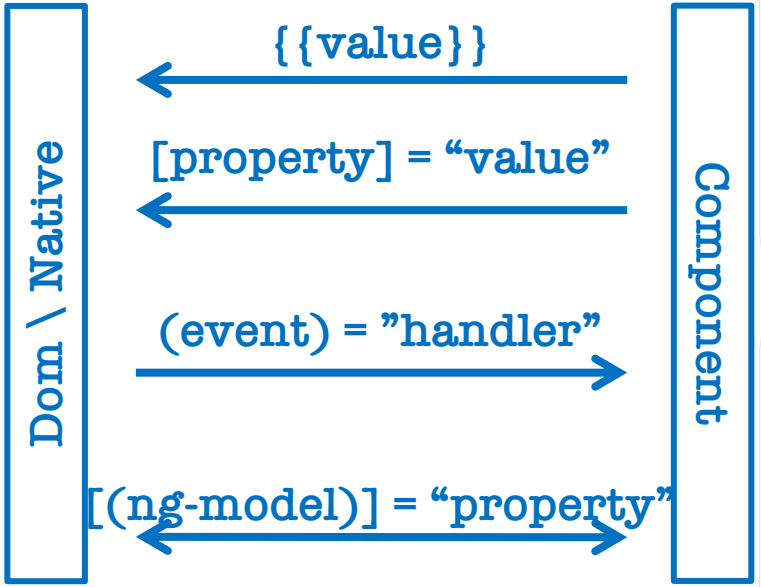
Android


Architecture
iOS
Android
JS
Web

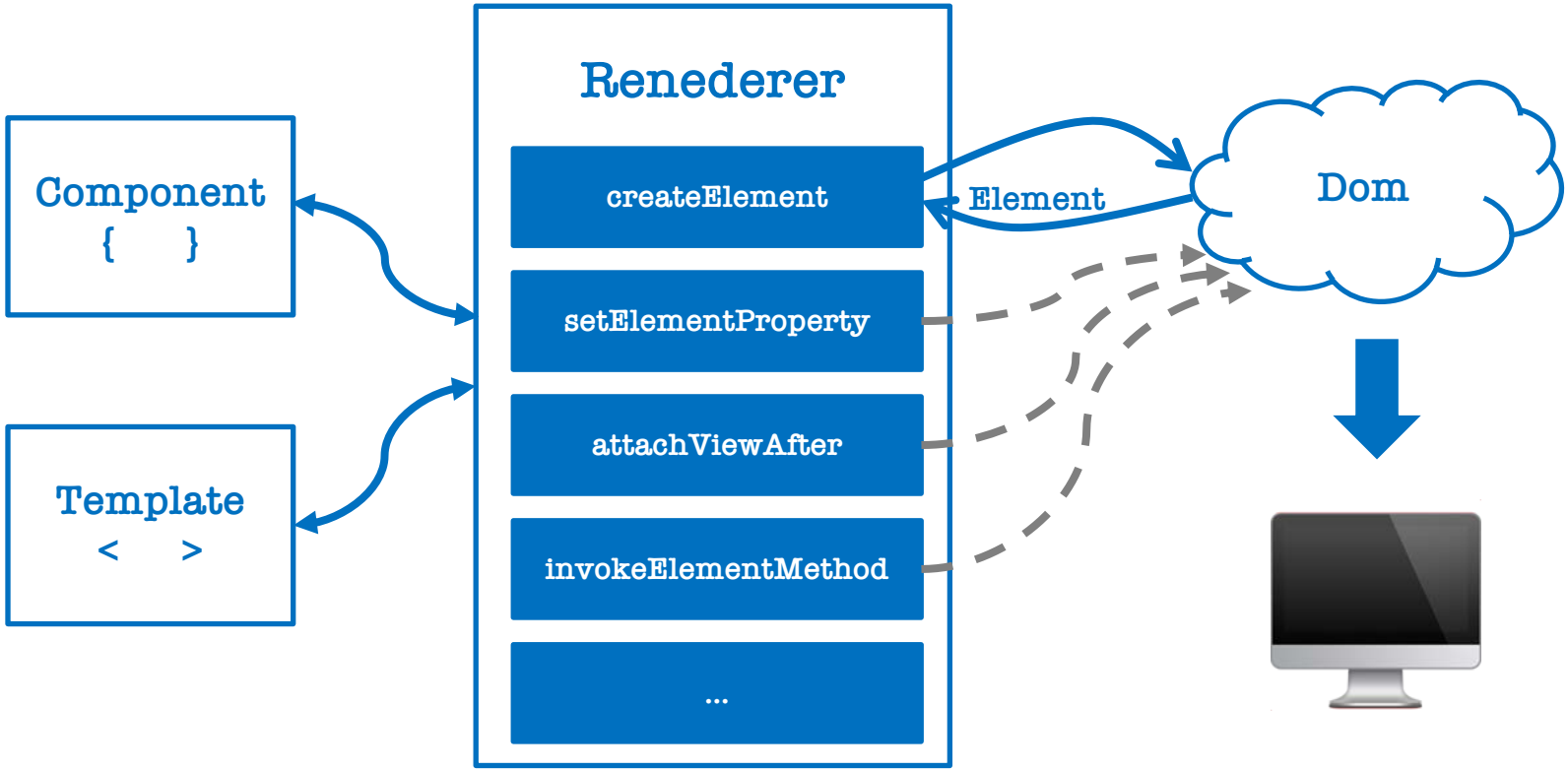
Angular Architecture Helping with code sharing

Data Binding

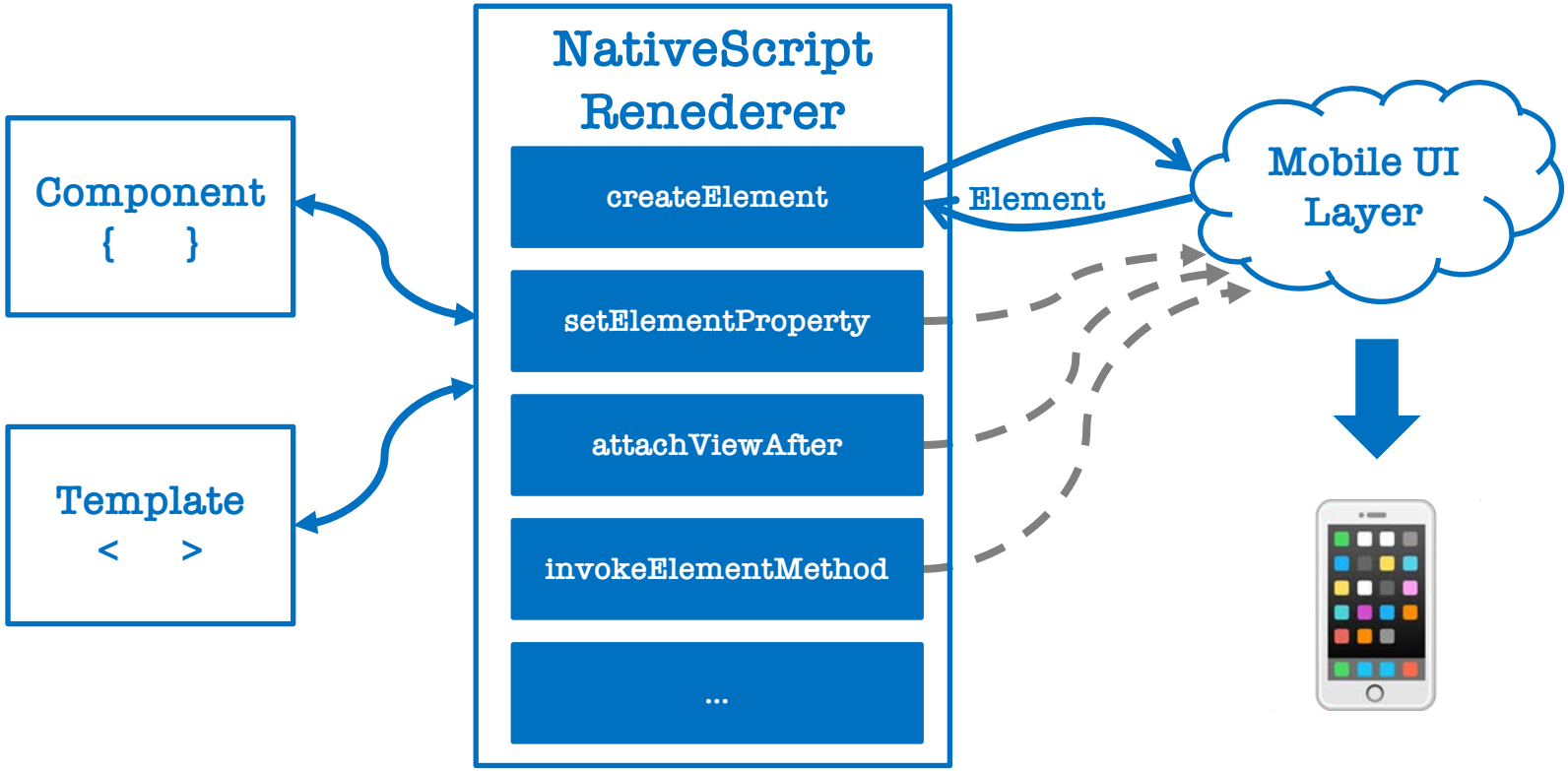




Renderer


Component
{ }
Template
< >
Renederer
createElement
setElementProperty
attachViewAfter
invokeElementMethod
...
Element
Dom

Renderer


NativeScript
Renederer
Component
{ }
Template
< >
createElement
setElementProperty
attachViewAfter
invokeElementMethod
...
Element
Mobile UI
Layer

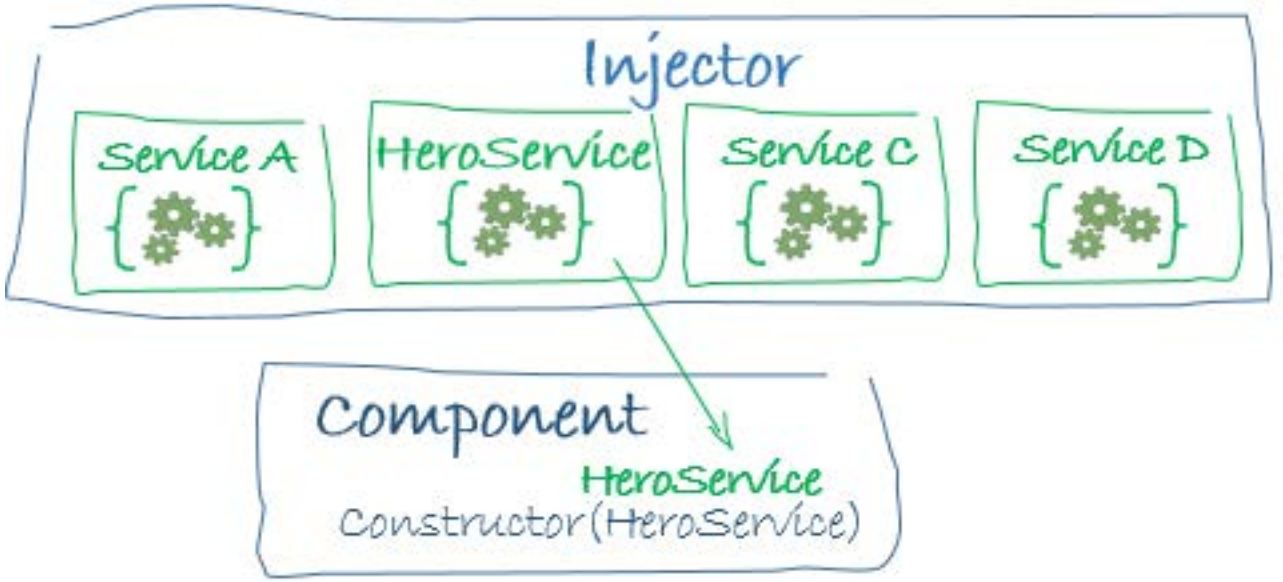
Component

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

    sayHelloTo(name) {
        alert('hi ' + name);
    }
}
```

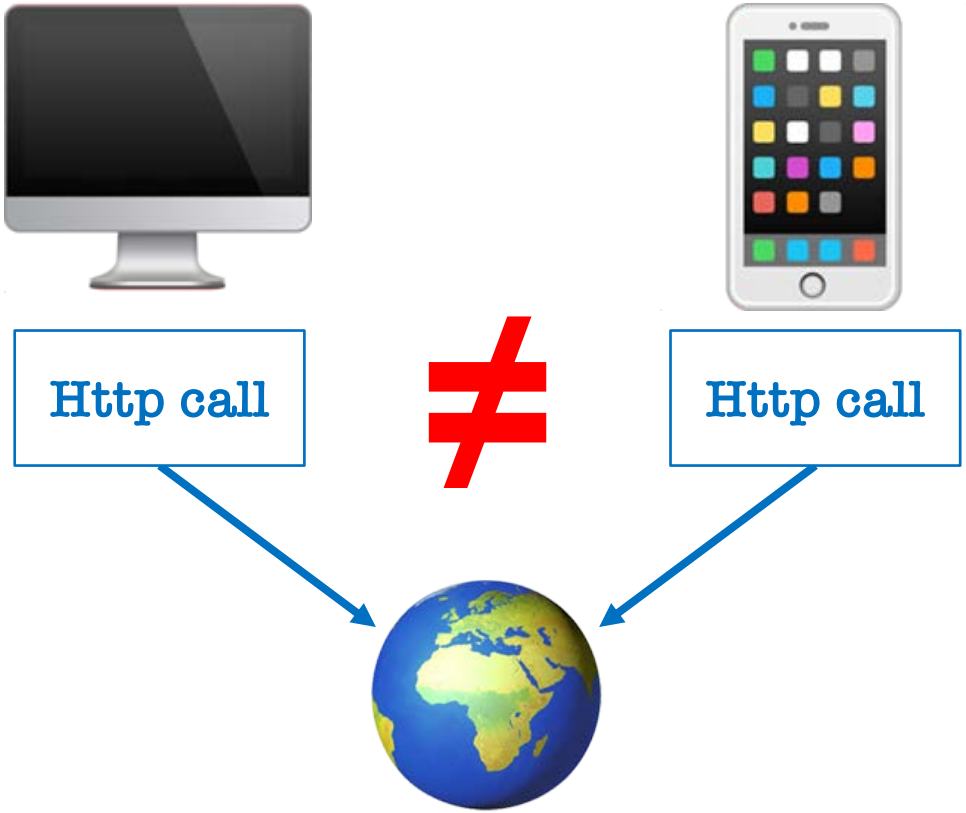
Template

```
<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,
      ...
 ]
```

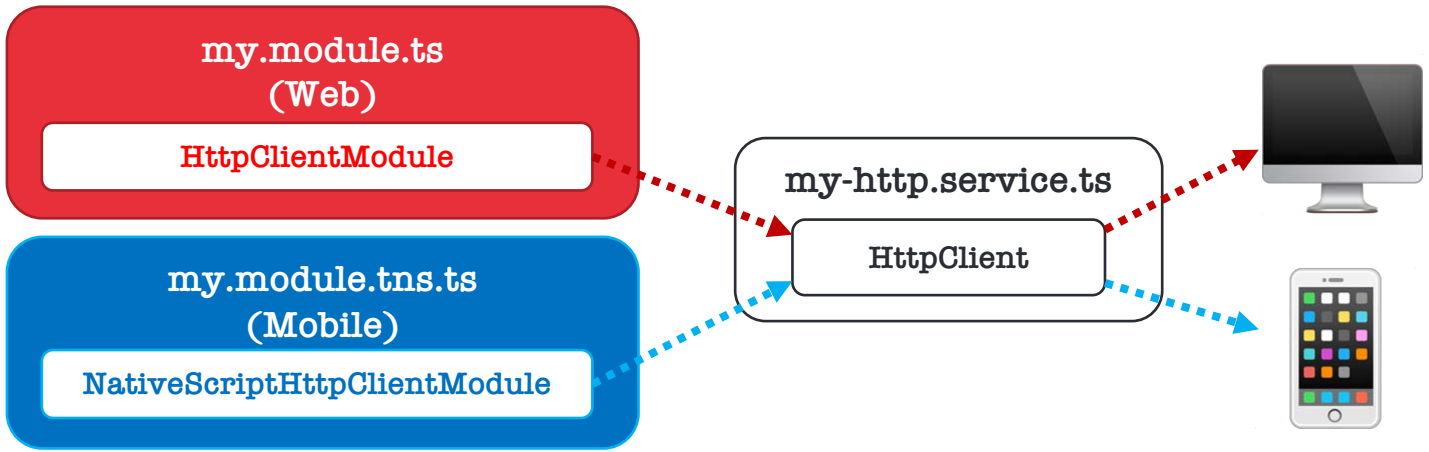
NativeScriptHttpClientModule

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

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

HttpClient

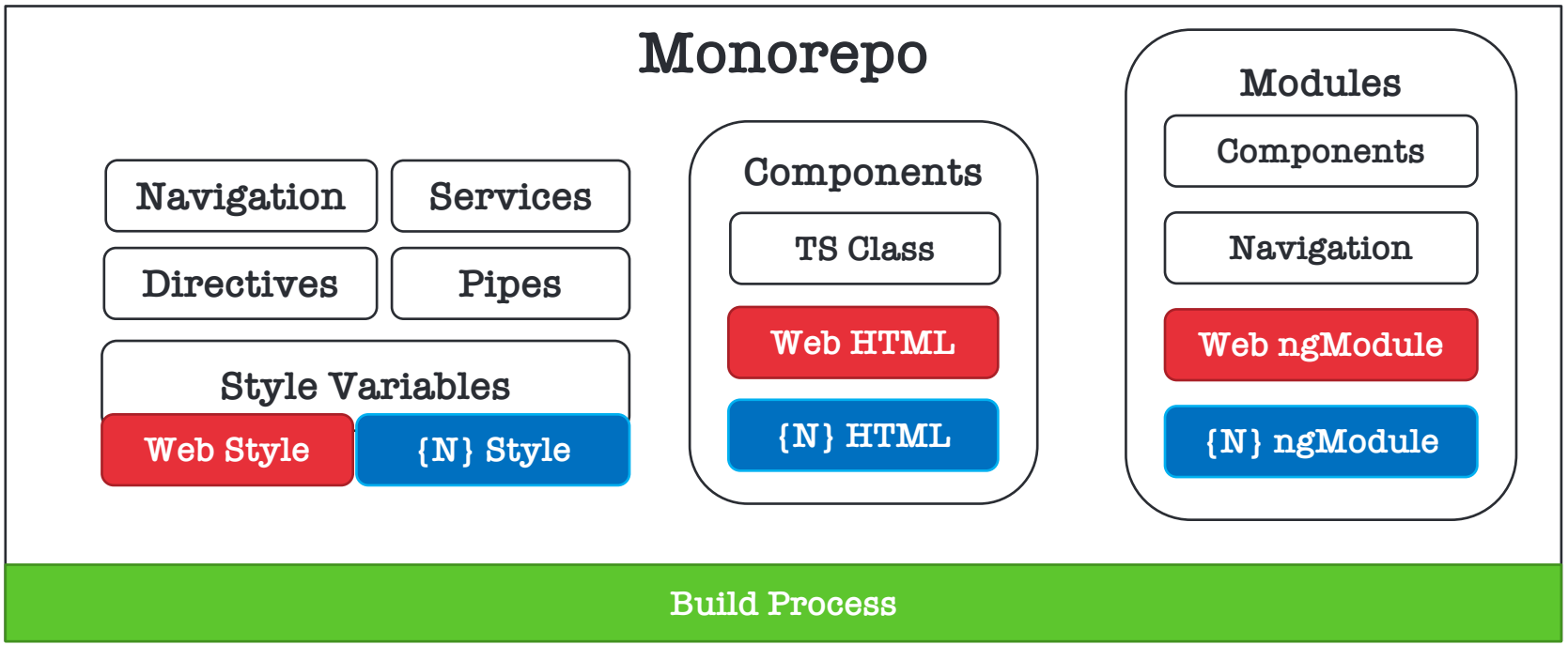
```
import { HttpClient } from '@angular/common/http';

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

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

}
```

How to do code splitting?

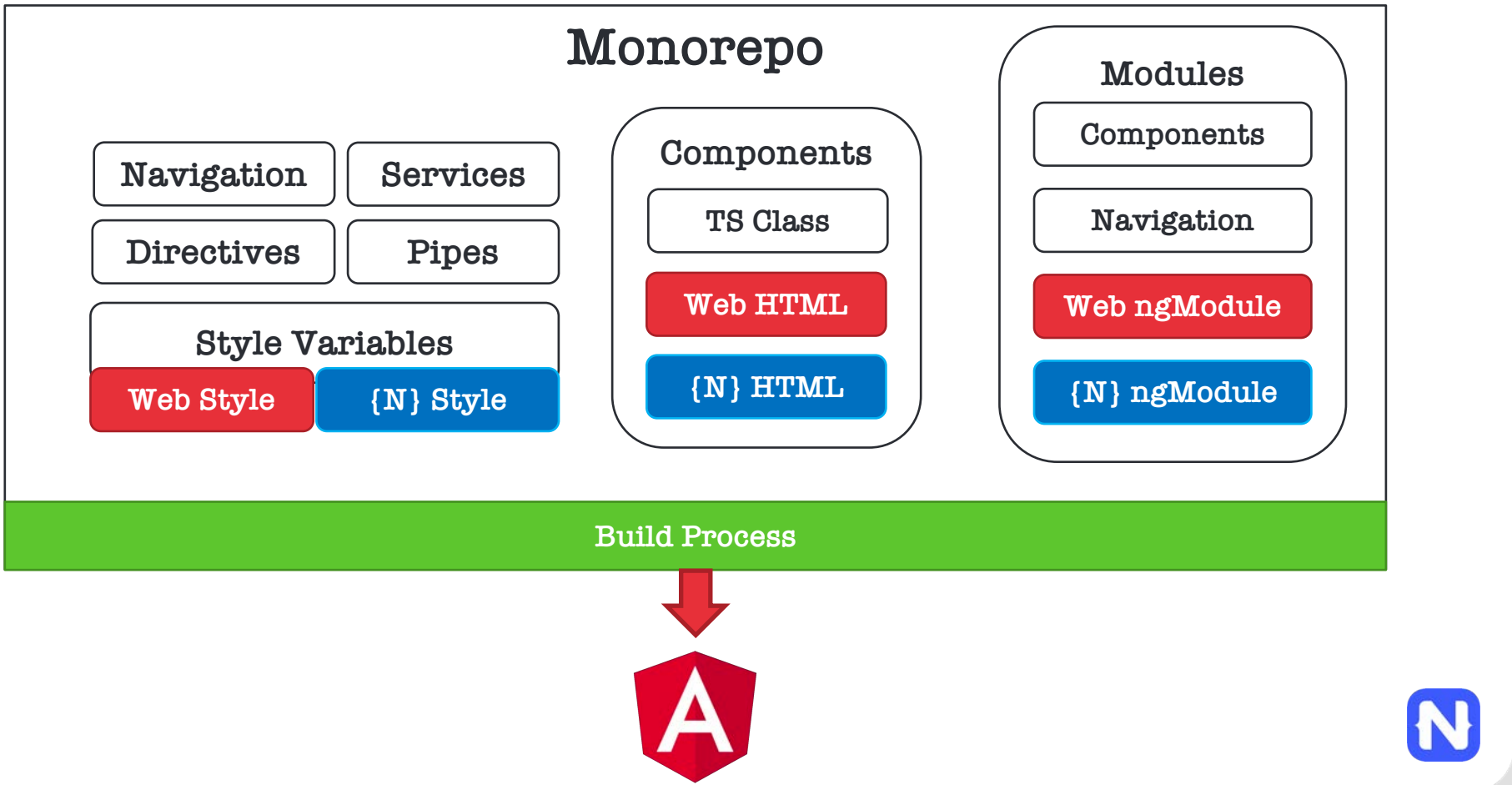


Code Sharing
Project Structure

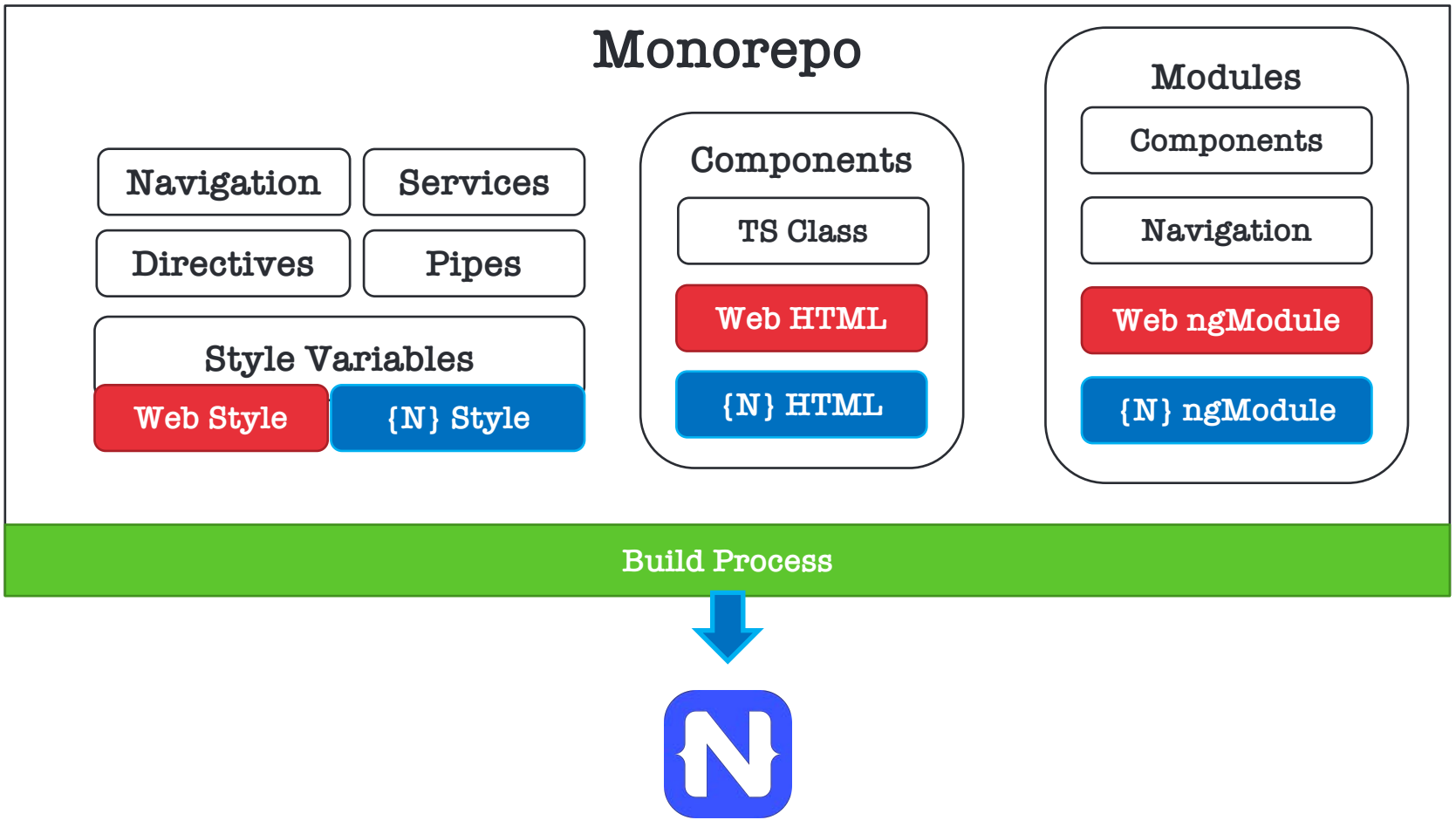
Shared Project Structure



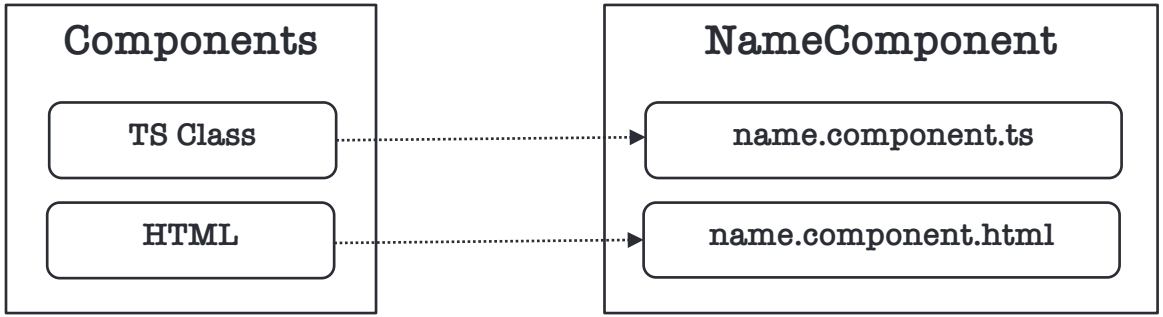
Shared Project Structure



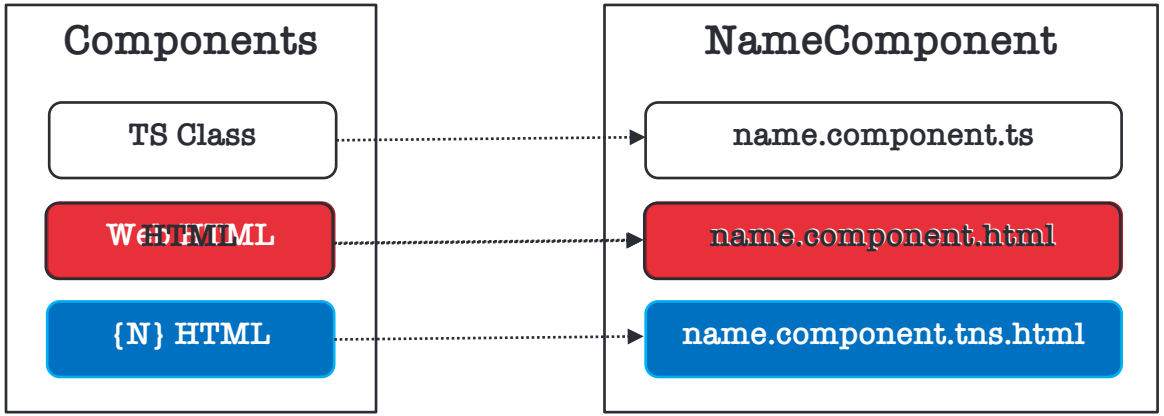
Shared Project Structure



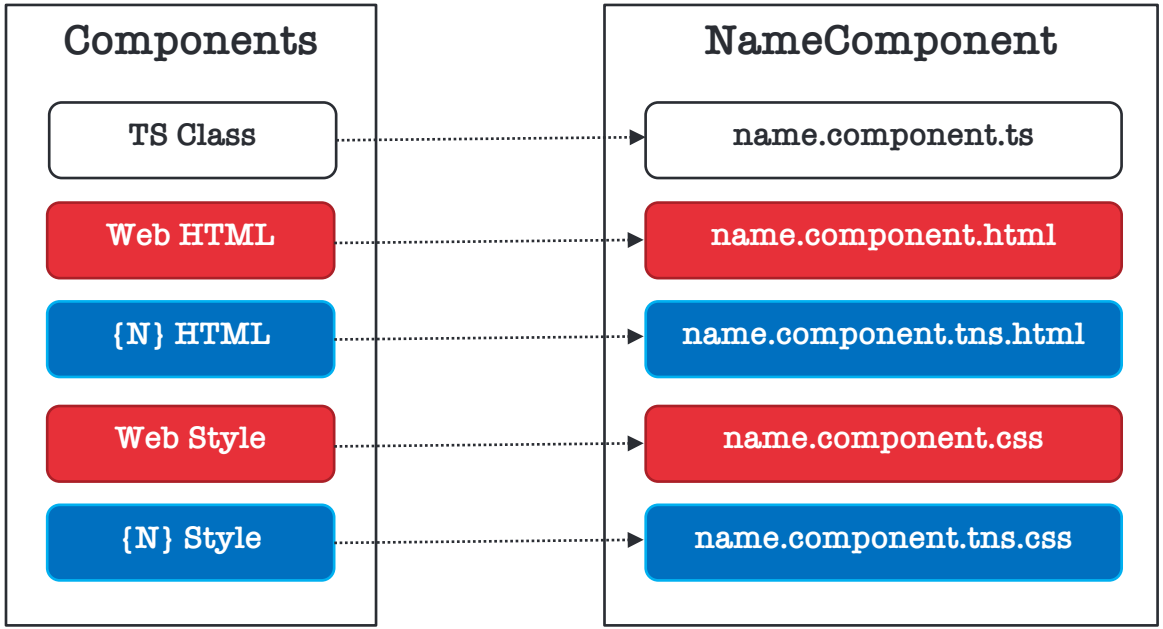
How to do code splitting?



How to do code splitting?



How to do code splitting?



“HOW DO I EVEN?”

NativeScript Schematics

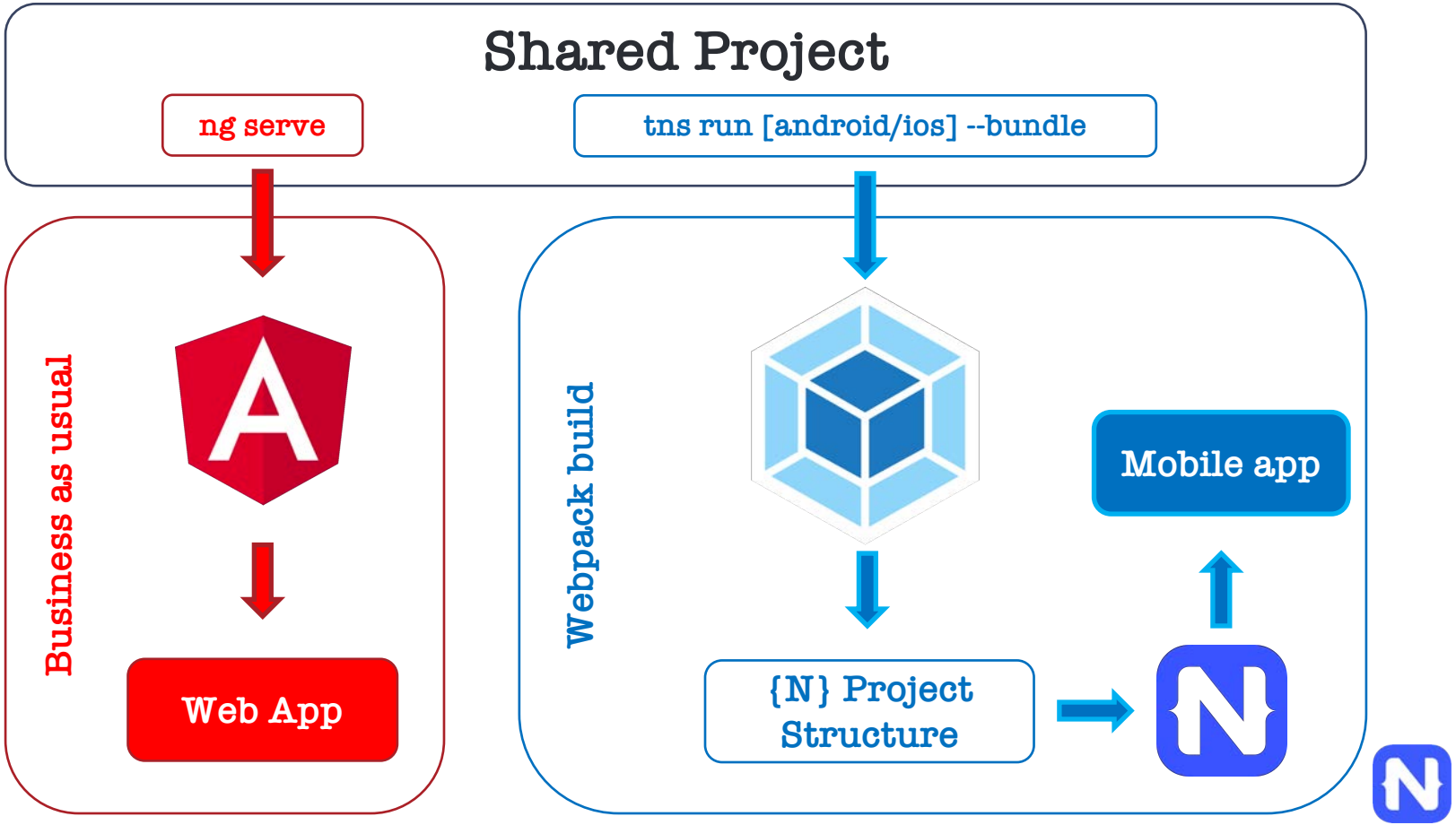
Install Nativescript Schematics

> npm i -g @nativescript/schematics

Web + Mobile Shared Project

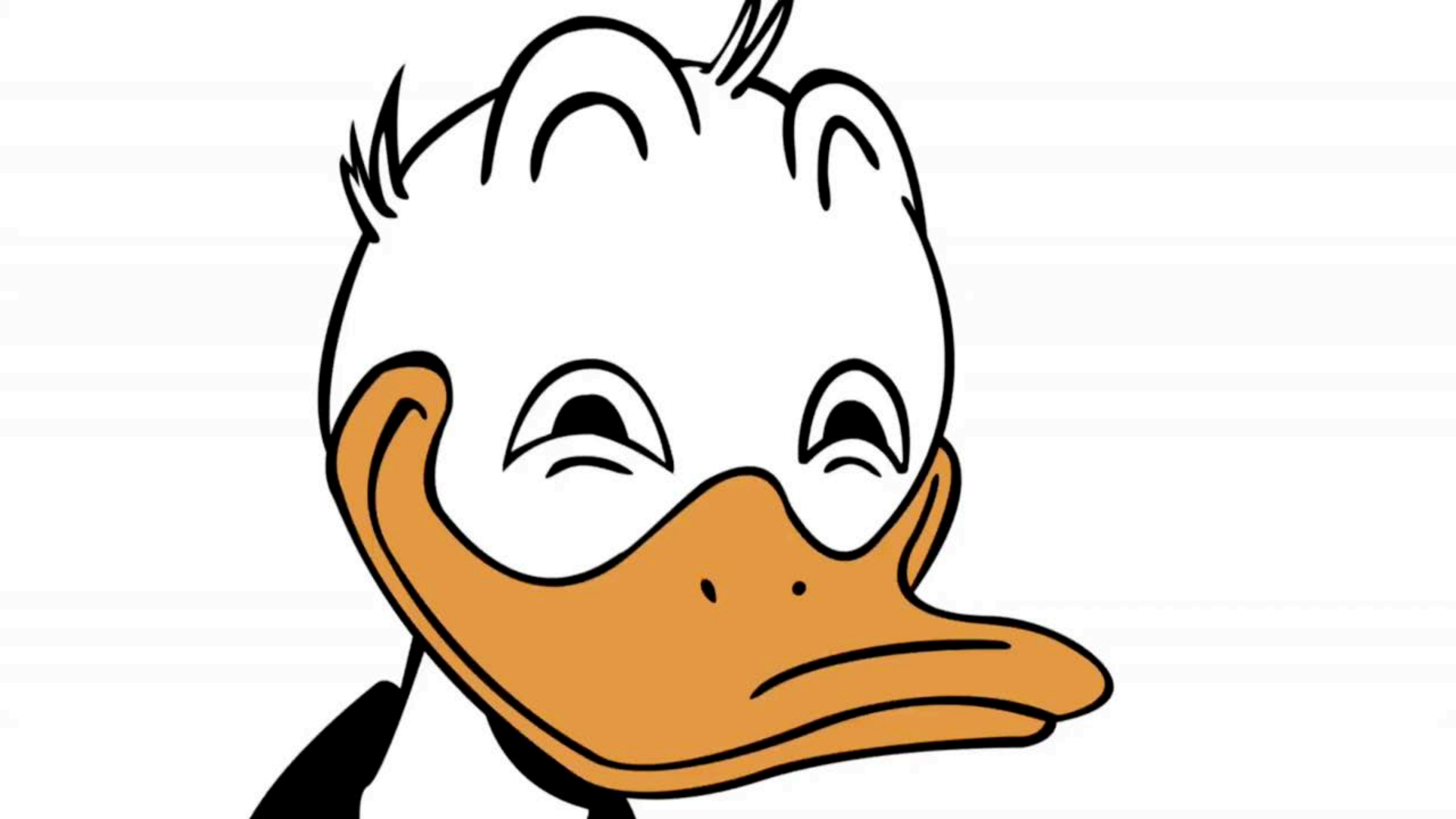
> ng new -c=@nativescript/schematics --name=my-app --shared

How does it work?



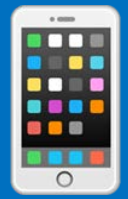
NativeScript Build

Web Files



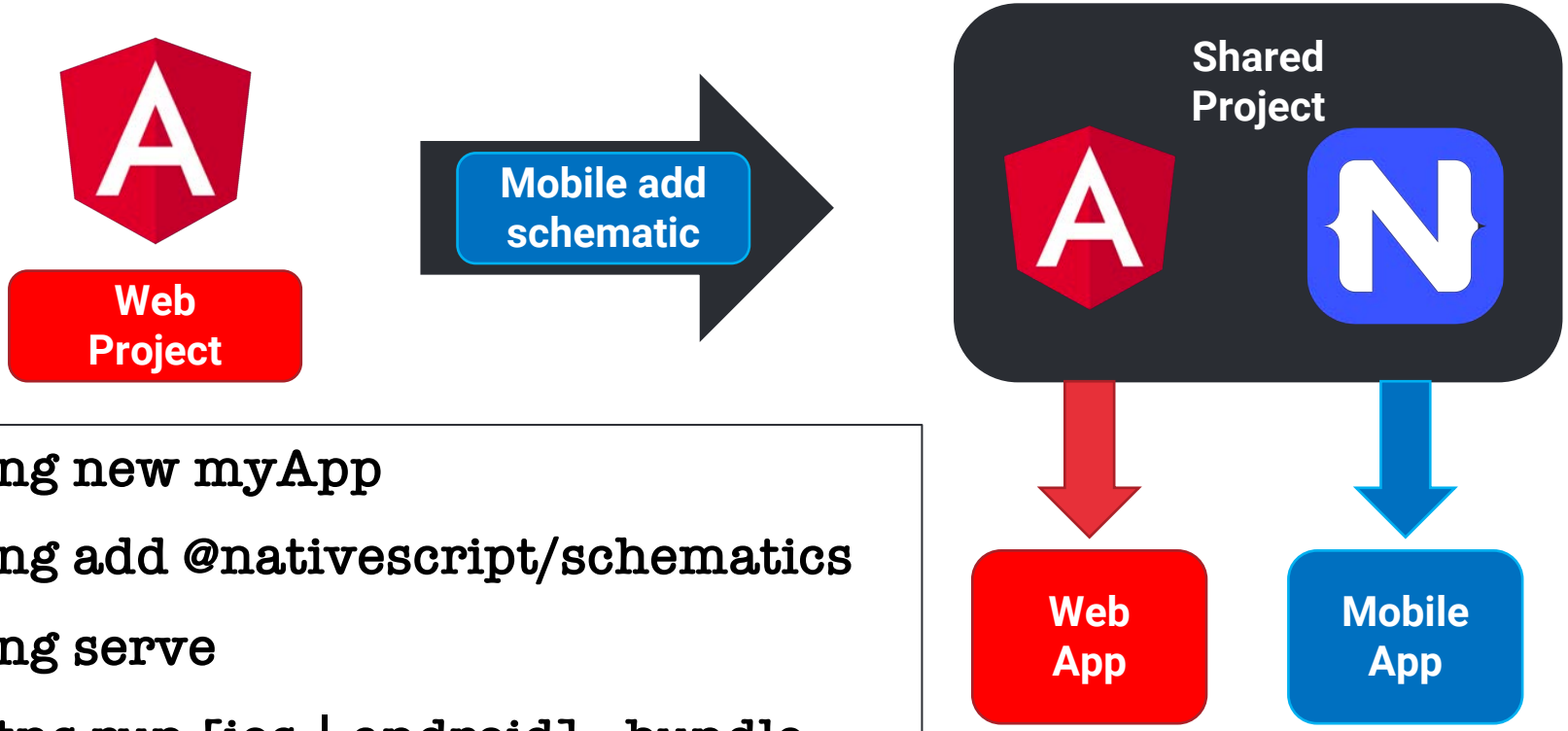
Demo

github.com/sebawita/angular-tour-of-heroes



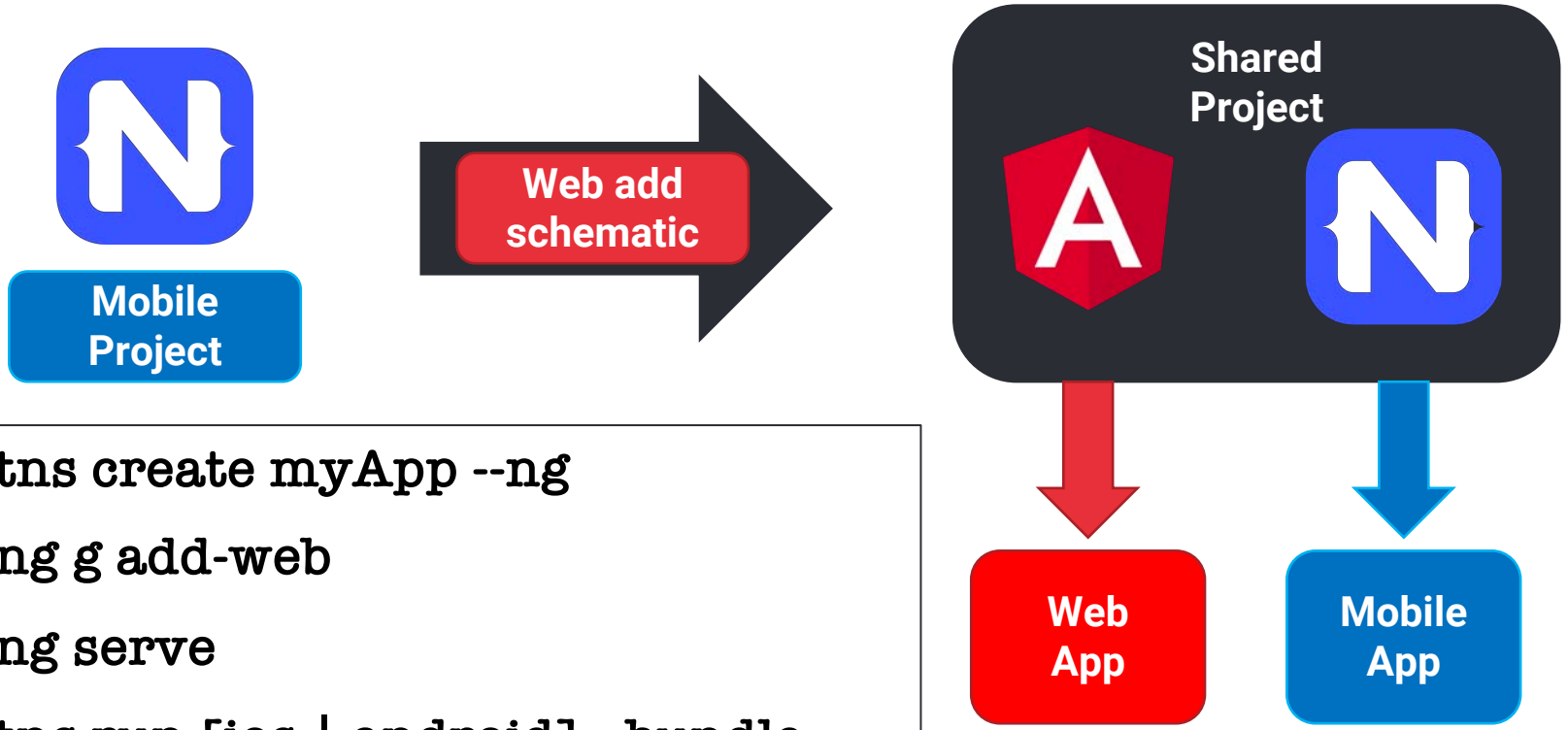
Project Migration with Schematics 🤗

Project Migration – web to shared



- ng new myApp
- ng add @nativescript/schematics
- ng serve
- tns run [ios | android] --bundle

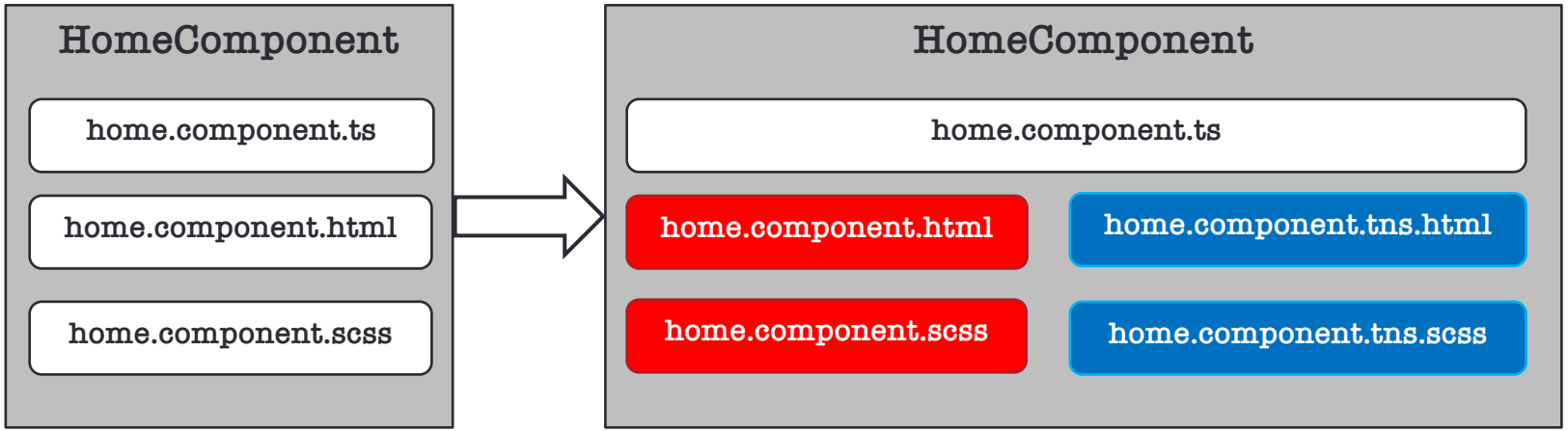
Project Migration – mobile to shared*



- tns create myApp --ng
- ng g add-web
- ng serve
- tns run [ios | android] --bundle

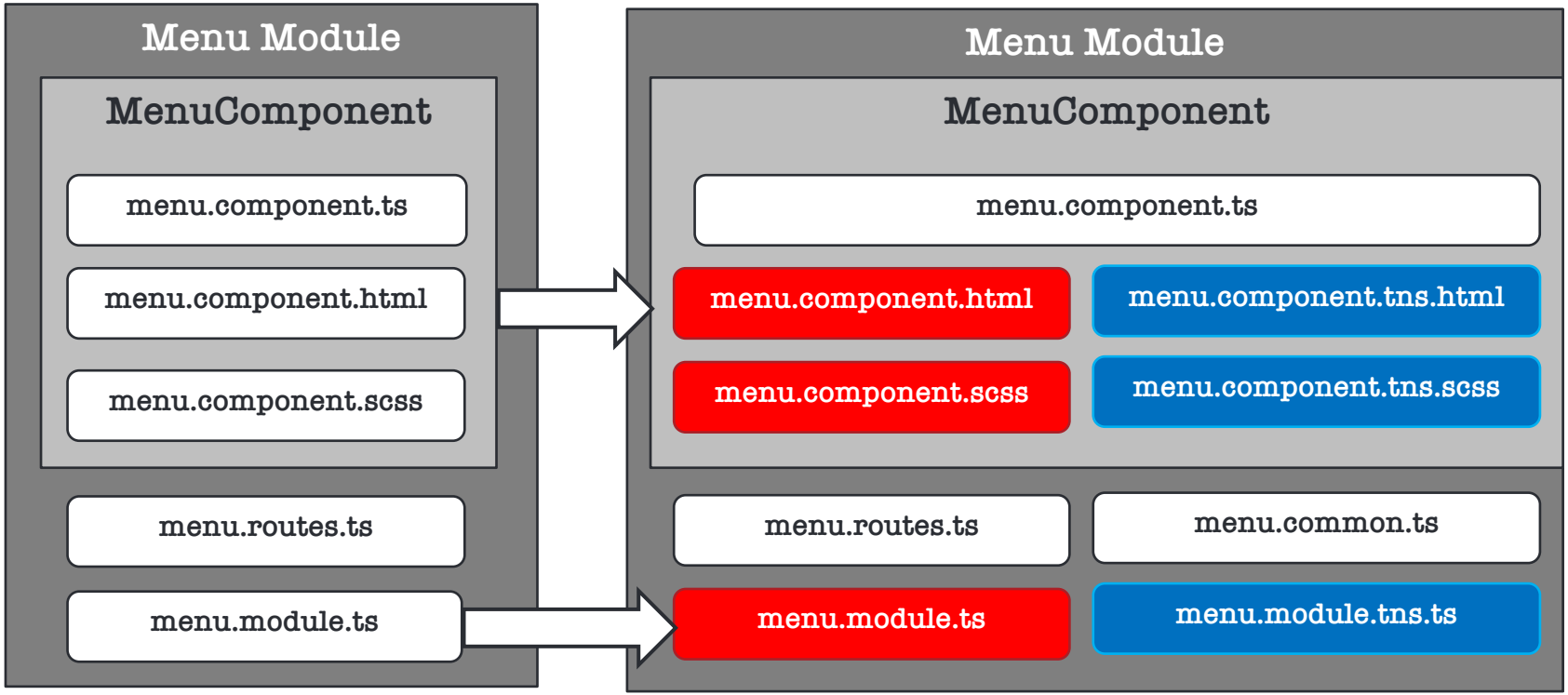
*under development

Project Migration: Convert Component




```
ng g migrate-component --name=home
```

Project Migration: Convert Component




```
ng g migrate-module --name=menu
```

Migration commands

```
ng add @nativescript/schematics

ng g migrate-component --name=cmp-name

ng g migrate-module --name=mod-name
```

Alternative Solutions

https://nstudio.io/xplat/

xplat - Cross-platform tools for Nx workspaces

When the need arises for cross-platform development in your Nx workspace you want versatility, clarity and best practices which are scalable.

xplat is an added value pack for Nx distributed via an Angular schematic to provide out of the box support for cross-platform development.

With the strength of TypeScript paired with the power of Angular we can share a lot of code between various platforms to make our projects easier to maintain and develop.

With a focus first approach to web development via TypeScript/JavaScript, the `xplat` value pack adds support for the following platforms:

- NativeScript
- Ionic
- Electron

In progress and upcoming additions:

- ssr (server-side rendered): Universal and Nest

https://nstudio.io/xplat/

XPLAT

Thank you

Thank you