

# Frameworks for Hybrid Mobile Apps

-

## Introduction



## What is a Hybrid Mobile App Framework?

- React Native
- Ionic Framework
- NativeScript
- Quasar
- Kendo UI
- Framework7
- Aurelia
- Onsen UI
- Ext JS
- Axway Appcelerator
- Svelte Native
- Xamarin



**Ionic:**

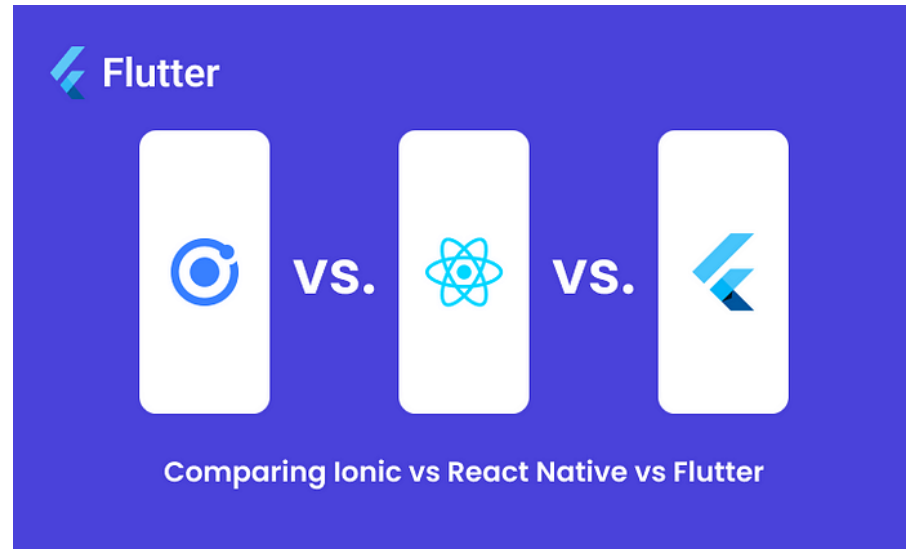
Ionic uses web technologies like HTML, CSS, and JavaScript to build mobile apps. This means you can leverage your existing web skills and reuse code across platforms. Ionic also has a robust library of UI components, gestures, and tools to build a native-looking app. However, the app performance and experience may not match truly native apps.

**React Native:**

React Native also uses web technologies but compiles the code to native components, so the performance and experience is very close to native. It has a large collection of third-party libraries and integrations. However, it can be more difficult to learn compared to Ionic and Flutter. React Native is also supported by Facebook, so it has a strong community and ecosystem.

**Flutter:**

Flutter uses Google's Dart programming language and proprietary widgets and renders everything using Skia, a 2D rendering engine. This allows Flutter apps to achieve a native look and feel with high performance. Flutter is a relatively new framework but is growing quickly with a strong community and many libraries and plugins available. However, Dart can have a steeper learning curve coming from web languages.





▼ Getting Started

Overview

Environment Setup

CLI Installation

Packages & CDN

Ionic VS Code Extension

Next Steps

▼ Upgrade Guides

Updating to v7

Updating to v6

Updating to v5

Updating to v4

▼ Developing

Starting

Previewing

Scaffolding

Developing for iOS

## Overview

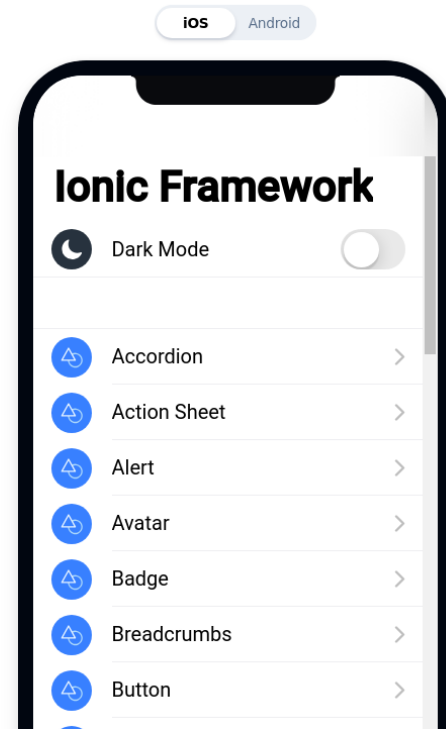
Ionic focuses on the frontend UX and UI interaction of an app — UI controls, interactions, gestures, animations. It's easy to learn, and integrates with other libraries or frameworks, such as [Angular](#), [React](#), or [Vue](#). Alternatively, it can be used **standalone without any frontend framework using a simple `script include`**. If you'd like to learn more about Ionic before diving in, we [created a video](#) to walk you through the basics.

### One codebase, running everywhere

Ionic is the only mobile app stack that enables web developers to build apps for all major app stores and the mobile web from a single codebase. And with [Adaptive Styling](#), Ionic apps look and feel at home on every device.

### A focus on performance

Ionic is built to perform and behave great on the latest mobile devices with best practices like efficient hardware accelerated transitions, and touch-optimized gestures.



Getting Started

Overview

- Environment Setup
- CLI Installation
- Packages & CDN
- Ionic VS Code Extension
- Next Steps

Upgrade Guides

- Updating to v7
- Updating to v6
- Updating to v5
- Updating to v4

Developing

- Starting
- Previewing
- Scaffolding
- Developing for iOS
- Developing for Android
- Development Tips

**Simplicity**

Ionic is built with simplicity in mind, so that creating apps is enjoyable, easy to learn, and accessible to just about anyone with web development skills.


## Framework Compatibility












While past releases of Ionic were tightly coupled to Angular, version 4.x of the framework was re-engineered to work as a standalone [Web Component](#) library, with integrations for the latest JavaScript frameworks, like Angular. Ionic can be used in most frontend frameworks with success, including React and Vue, though some frameworks need a shim for full Web Component support.


**JavaScript**

One of the main goals with moving Ionic to [Web Components](#) was to remove any hard requirement on a single framework to host the components. This made it possible for the core components to [work standalone in a web page](#) with just a script tag. While working with frameworks can be great for larger teams and larger apps, it is now possible to use Ionic as a standalone library in a single page even in a context like WordPress.

**IONIC FRAMEWORK**

 Dark Mode

-  Accordion >
-  Action Sheet >
-  Alert >
-  Avatar >
-  Badge >
-  Breadcrumbs >
-  Button >
-  Card >
-  Checkbox >
-  Chip >
-  Content >

[View Source](#) 

```
1 <!DOCTYPE html>
2 <html>
3   <head>
4     <title>TAMZ-01</title>
5     <meta charset="UTF-8">
6     <meta name="viewport" content="width=device-width, initial-scale=1.0">
7   </head>
8
9   <body>
10    <h1 style="color: blue">TODO write content</h1>
11    <h2>TODO write content</h2>
12    <h3>TODO write content</h3>
13    <h4 id="todoText">TODO write content</h4>
14    <!-- <button onclick="document.getElementById('demo').innerHTML = 'TAMZ'">TAMZ</button> -->
15    <button id="tamzButton-01">TAMZ</button>
16  </body>
17
18  <script>
19
20    let btn = document.getElementById("tamzButton-01");
21    btn.addEventListener("click", myAction);
22
23    function myAction()
24    {
25      document.getElementById("todoText").innerHTML = "AH0J TAMZ";
26    }
27
28  </script>
29 </html>
```

```
1 <!DOCTYPE html>
2 <html>
3   <head>
4     <title>TAMZ-01</title>
5     <meta charset="UTF-8">
6     <meta name="viewport" content="width=device-width, initial-scale=1.0">
7   </head>
8
9   <body>
10    <h1 style="color: blue">TODO write content</h1>
11    <h2>TODO write content</h2>
12    <h3>TODO write content</h3>
13    <h4 id="todoText">TODO write content</h4>
14    <!-- <button onclick="document.getElementById('demo').innerHTML = 'TAMZ'">TAMZ</button> -->
15    <button id="tamzButton-01">TAMZ</button>
16  </body>
17
18  <script>
19
20    let btn = document.getElementById("tamzButton-01");
21    btn.addEventListener("click", myAction);
22
23    function myAction()
24    {
25      document.getElementById("todoText").innerHTML = "AHOO TAMZ";
26    }
27
28  </script>
29 </html>
```





- HTML Tutorial
- HTML HOME
- HTML Introduction
- HTML Editors
- HTML Basic
- HTML Elements**
- HTML Attributes
- HTML Headings
- HTML Paragraphs
- HTML Styles
- HTML Formatting
- HTML Quotations
- HTML Comments
- HTML Colors
- HTML CSS
- HTML Links
- HTML Images
- HTML Favicon
- HTML Page Title
- HTML Tables

## HTML Elements

The HTML **element** is everything from the start tag to the end tag:

```
<tagname>Content goes here...</tagname>
```

Examples of some HTML elements:

```
<h1>My First Heading</h1>
```

```
<p>My first paragraph.</p>
```

Start tag	Element content	End tag
<h1>	My First Heading	</h1>
<p>	My first paragraph.	</p>
 	<i>none</i>	<i>none</i>



 ionic DOCS

## v Getting Started

Overview

Environment Setup

CLI Installation

Packages &amp; CDN

Ionic VS Code Extension

Next Steps

## v Upgrade Guides

Updating to v7

Updating to v6

Updating to v5

Updating to v4

## Ionic Framework CDN

Ionic Framework can be included from a CDN for quick testing in a [Plunker](#), [Codepen](#), or any other online code editor!

It's recommended to use [jsdelivr](#) to access the Framework from a CDN. To get the latest version, add the following inside the `<head>` element in an HTML file, or where external assets are included in the online code editor:

```
<script type="module" src="https://cdn.jsdelivr.net/npm/@ionic/core/dist/ionic/ion"></script>
<script nomodule src="https://cdn.jsdelivr.net/npm/@ionic/core/dist/ionic/ionic.js"></script>
<link rel="stylesheet" href="https://cdn.jsdelivr.net/npm/@ionic/core/css/ionic.bu
```

With this it's possible to use all of the Ionic Framework core components without having to install a framework. The CSS bundle will include all of the Ionic [Global Stylesheets](#).

```
1 <!DOCTYPE html>
2 <html>
3   <head>
4     <title>TODO supply a title</title>
5     <meta charset="UTF-8">
6     <meta name="viewport" content="width=device-width, initial-scale=1.0">
7
8     <script type="module" src="https://cdn.jsdelivr.net/npm/@ionic/core/dist/ionic/ionic.esm.js"></script>
9     <script nomodule src="https://cdn.jsdelivr.net/npm/@ionic/core/dist/ionic/ionic.js"></script>
10    <link rel="stylesheet" href="https://cdn.jsdelivr.net/npm/@ionic/core/css/ionic.bundle.css" />
11
12  </head>
13
14  <body>
15
16  </body>
17
18  <script>
19
20  </script>
21
22 </html>
```

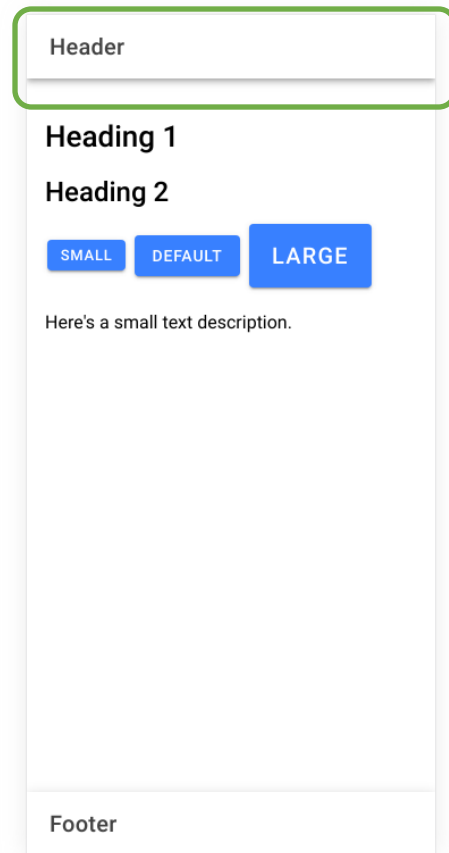
# Ionic Example - 01

Dimensions: Samsung Galaxy S8+ 360 x 740 100% No throttling

```

14 <body>
15   <ion-app>
16     <ion-header>
17       <ion-toolbar>
18         <ion-title> Header </ion-title>
19       </ion-toolbar>
20     </ion-header>
21
22     <ion-content class="ion-padding">
23       <h1>Heading 1</h1>
24       <h2>Heading 2</h2>
25       <ion-button size="small">Small</ion-button>
26       <ion-button size="default">Default</ion-button>
27       <ion-button size="large">Large</ion-button>
28       <p>Here's a small text description.</p>
29     </ion-content>
30
31     <ion-footer>
32       <ion-toolbar>
33         <ion-title> Footer </ion-title>
34       </ion-toolbar>
35     </ion-footer>
36
37   </ion-app>
38 </body>
39

```



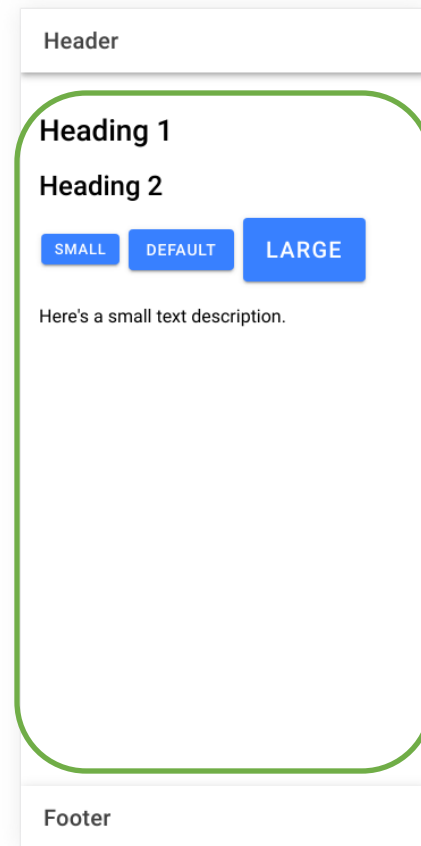
# Ionic Example - 01

Dimensions: Samsung Galaxy S8+ ▾ 360 x 740 100% ▾ No throttling ▾

```

14 <body>
15   <ion-app>
16     <ion-header>
17       <ion-toolbar>
18         <ion-title> Header </ion-title>
19       </ion-toolbar>
20     </ion-header>
21
22     <ion-content class="ion-padding">
23       <h1>Heading 1</h1>
24       <h2>Heading 2</h2>
25       <ion-button size="small">Small</ion-button>
26       <ion-button size="default">Default</ion-button>
27       <ion-button size="large">Large</ion-button>
28       <p>Here's a small text description.</p>
29     </ion-content>
30
31     <ion-footer>
32       <ion-toolbar>
33         <ion-title> Footer </ion-title>
34       </ion-toolbar>
35     </ion-footer>
36
37   </ion-app>
38 </body>
39

```



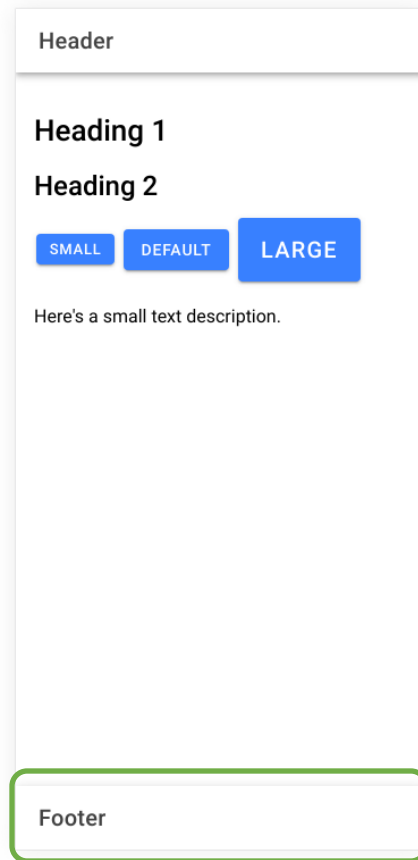
# Ionic Example - 01

Dimensions: Samsung Galaxy S8+ ▾ 360 x 740 100% ▾ No throttling ▾

```

14 <body>
15   <ion-app>
16     <ion-header>
17       <ion-toolbar>
18         <ion-title> Header </ion-title>
19       </ion-toolbar>
20     </ion-header>
21
22     <ion-content class="ion-padding">
23       <h1>Heading 1</h1>
24       <h2>Heading 2</h2>
25       <ion-button size="small">Small</ion-button>
26       <ion-button size="default">Default</ion-button>
27       <ion-button size="large">Large</ion-button>
28       <p>Here's a small text description.</p>
29     </ion-content>
30
31     <ion-footer>
32       <ion-toolbar>
33         <ion-title> Footer </ion-title>
34       </ion-toolbar>
35     </ion-footer>
36
37   </ion-app>
38 </body>
39

```



## Ve zbytku cvičení/doma vyzkoušejte:

### 1. Seznam Komponent

<https://ionicframework.com/docs/components>

### 2. ion-app

<https://ionicframework.com/docs/api/app>

### 3. Struktura header-footer

<https://ionicframework.com/docs/api/content#header--footer>

### 4. Vlastnosti

<https://ionicframework.com/docs/api/toolbar#properties>

4.1 TODO Nastavte prvku ion-toolbar vlastnost "color" na hodnotu "primary"

5. TODO přidejte ion-content <https://ionicframework.com/docs/api/content>

6. TODO přidejte ion-input, prozkoumejte vlastnosti

6.1 TODO vypisujte do konzole ion-input hodnoty <https://ionicframework.com/docs/api/input#filtering-user-input>

7. TODO přidejte tlačítko, Po stisku stačítko vypsát do konzole hodnotu v ion-input

