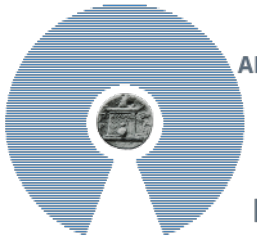


ΜΟΝΑΔΑ ΑΡΙΣΤΕΙΑΣ
ΑΝΟΙΧΤΟΥ ΛΟΓΙΣΜΙΚΟΥ

ΧΑΡΟΚΟΠΕΙΟ
ΠΑΝΕΠΙΣΤΗΜΙΟ

ΜΟΝΑΔΕΣ ΑΡΙΣΤΕΙΑΣ
ΑΝΟΙΧΤΟΥ ΛΟΓΙΣΜΙΚΟΥ

Ionic Framework

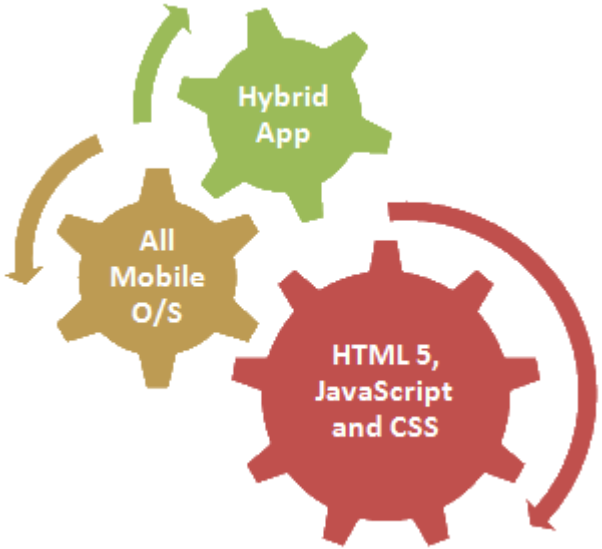
Front-end framework for developing hybrid mobile apps with HTML5

Mobile development

	Native App	Mobile Web App	Hybrid App
Advantages	1. Highly graphical 2. App store distribution 3. Full device integration	1. Future proof 2. Cross-platform 3. Low development cost 4. Simple maintenance 5. Instant updates 6. Complete freedom	1. Native look-and-feel (without the native cost) 2. App store distribution 3. Full device integration 4. Low development cost
Disadvantages	1. No portability 2. Platform instability 3. Development cost 4. Development time 5. Maintenance cost 6. Limited control	1. Moderate device integration 2. Limited graphics	1. Limited graphics 2. Requires familiarity with mobile framework

source: [Native mobile apps:The wrong choice for business?]

Why Hybrid



source: [Hybrid - Applications for Mobile]

Open Source Frameworks

Appcelerator titanium	http://www.appcelerator.com/titanium/
BridgeIt	http://bridgeit.mobi/index.html
ChocolateChip Ui	http://chocolatechip-ui.com/
Ionic	http://ionicframework.com/
LigerMobile	http://reachlocal.github.io/liger/
...	

Why Ionic

http://coenraets.org/blog/2014/06/qcon-new-york-slides-creating-native-like-mobile-apps-with-cordova-angularjs-and-ionic/

Apache Cordova

- Set of device APIs that allow a mobile app developer to access native device function such as the camera or accelerometer from JavaScript.

Apache Cordova

- **Camera**
  - *cordova plugin add org.apache.cordova.camera*
  - *navigator.camera.getPicture(cameraSuccess, cameraError, cameraOptions);*

source: Cordova Camera Plugin

Apache Cordova

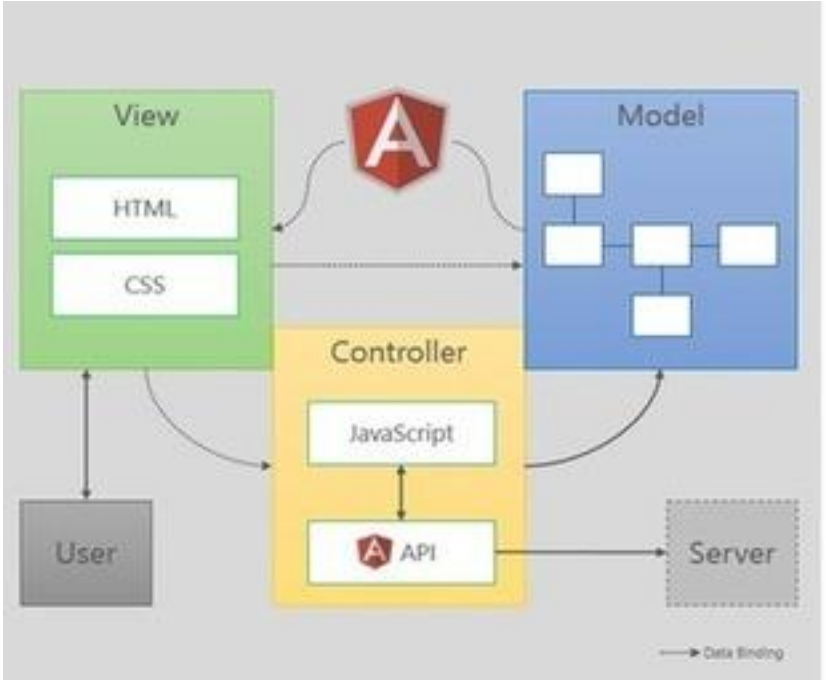
- **Vibration**
  - *cordova plugin add org.apache.cordova.vibration*
  - *navigator.vibrate(time)*

source: Cordova Vibration Plugin

Angular js

- A structural **MVC** framework for dynamic web apps. It lets you use HTML as your template language and lets you extend HTML's syntax to express your application's components clearly and succinctly

Angular js



MVC

Architectural Pattern

Layers

View: Visual appearance (declarative languages)
Model: Data model of the app (JavaScript objects)
Controller: Adds behavior (imperative languages)

Workflow

User interacts with the view
Changes the model, calls controller (data binding)
Controller manipulates model, interacts with server
AngularJS detects model changes and updates the view (two-way data binding)

source: AngularJS with TypeScript and Windows Azure Mobile Services

Angular js

Expressions

AngularJS let you execute expressions directly within your HTML pages

```
<div>1+1 = {{1+1}}</div>
```

1+1 = 2

source: Everything you need to understand to start with AngularJS

Angular js

Model - Controller

```
function companyController($scope) {
    $scope.data = {
        employeeName: "Mattias",
        company: "Net Insight AB"
    };
    $scope.save_info = function() {
        alert ($scope.data.employeeName)
    };
}
```

View

```
<h2>{{company}}</h2>
Employee name:
<input ng-model="employeeName">
</input>
<button ng-click="save_info()">Submit</button>
```

Result

Net Insight AB

Employee name: Mattias Submit

source: http://mattiash.github.io/angular-presentation/presentation.html

Angular js

Directives

Directives are markers on a DOM element that tell AngularJS's HTML compiler to attach a specified behavior to that DOM element

- **ng-app:** responsible for bootstrapping your app defining its scope. In AngularJS, you can have multiple apps within the same page
- **ng-controller:** directive defines which controller will be in charge of your view
- **ng-repeat:** define your template scope when looping through collections

source: [Everything you need to understand to start with AngularJS]

Angular js

```
<body ng-app="F1FeederApp" ng-controller="driversController">
  <table>
    <thead>
      <tr><th colspan="4">Drivers Championship Standings</th></tr>
    </thead>
    <tbody>
      <tr ng-repeat="driver in driversList">
        <td>{{$index + 1}}</td>
        <td>
          <img src="img/flags/{{driver.Driver.nationality}}.png" />
          {{driver.Driver.givenName}} {{driver.Driver.familyName}}
        </td>
        <td>{{driver.Constructors[0].name}}</td>
        <td>{{driver.points}}</td>
      </tr>
    </tbody>
  </table>
</body>
```

source: A Step-by-Step Guide to Your First AngularJS App

Angular js

controller.js

```
angular.module('F1FeederApp.controllers', []).
controller('driversController', function($scope)
```

app.js

```
angular.module('F1FeederApp', [
  'F1FeederApp.controllers'
]);
```

```
$scope.driversList = [
  {
      Driver: {
          givenName: 'Sebastian',
          familyName: 'Vettel'
      },
      points: 322,
      nationality: "German",
      Constructors: [
          {name: "Red Bull"}
      ]
  },
  {
      Driver: {
      givenName: 'Fernando',
          familyName: 'Alonso'
      },
      points: 207,
      nationality: "Spanish",
      Constructors: [
          {name: "Ferrari"}
      ]
  }
];
```

The **$scope** variable is supposed to link your controller and views. In particular, it holds all the data that will be used within your template.

source: [A Step-by-Step Guide to Your First AngularJS App]

Angular js

1	Sebastian Vettel	Red Bull	297
2	Fernando Alonso	Ferrari	207
3	Kimi Räikkönen	Lotus F1	177
4	Lewis Hamilton	Mercedes	161
5	Mark Webber	Red Bull	148
6	Nico Rosberg	Mercedes	126
7	Felipe Massa	Ferrari	90
8	Romain Grosjean	Lotus F1	87
9	Jenson Button	McLaren	60

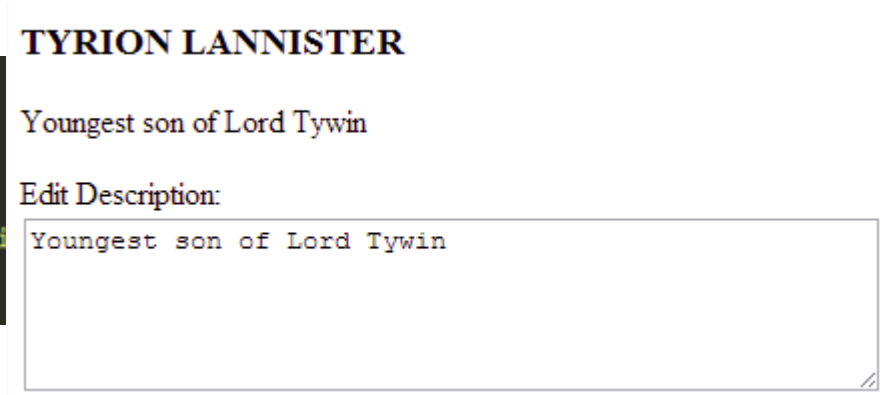
source: A Step-by-Step Guide to Your First AngularJS App

Angular js

Filters

AngularJS let you change the way your data are displayed in your page

```
<div>
  <div data-ng-repeat="user in users">
    <h3>{{user.name | uppercase}}</h3>
    <p>{{user.description}}</p>
    Edit Description:<br>
    <textarea rows="5" cols="50" data-ng-model="user.descri
  </div>
</div>
```



source: [Everything you need to understand to start with AngularJS]

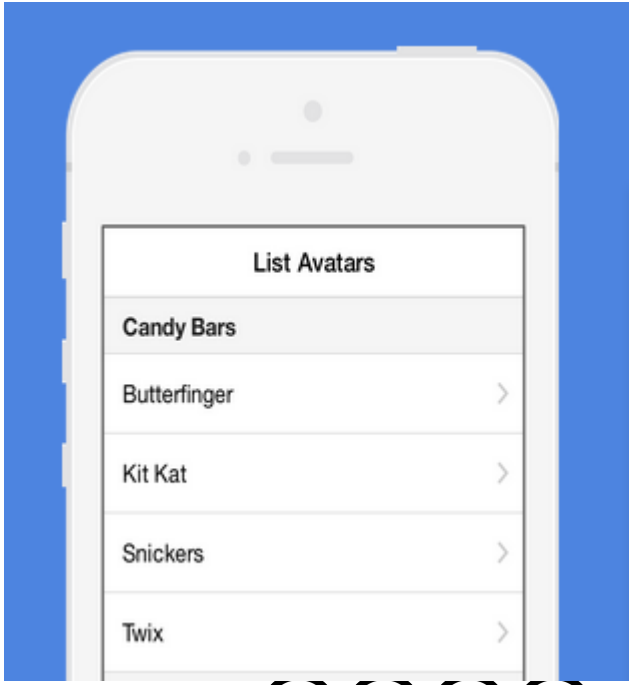
Ionic

Ionic is a bunch of UI elements made in HTML5 & CSS3 that covers a lot of the mobile interactions

The big advantage of Ionic is all the UI components are AngularJS Directives

Ionic (Lists)

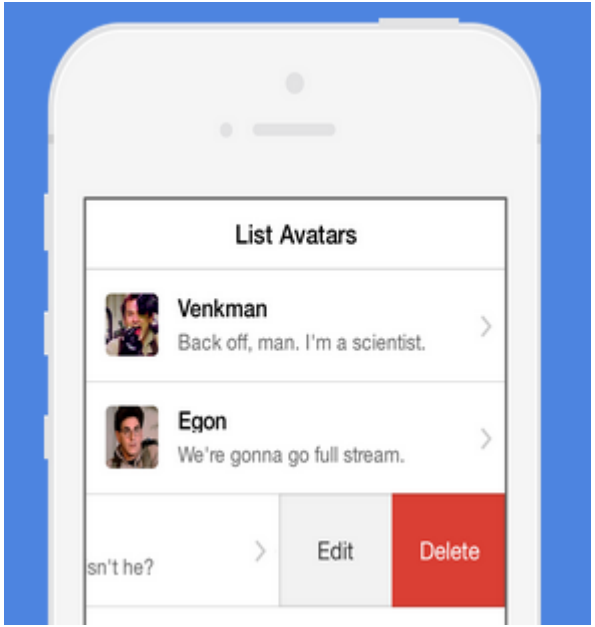
```
<div class="list">

  <div class="item item-divider">
    Candy Bars
  </div>

  <a class="item" href="#">
    Butterfinger
  </a>

  <a class="item" href="#">
    Kit Kat
  </a>

  ...

</div>
```



source: [Ionic presentation]

Ionic (Complex Lists)

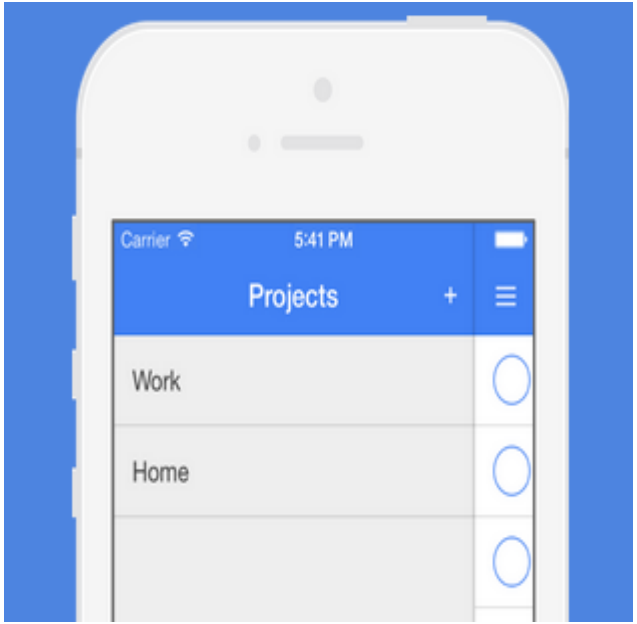
```
<ion-list>
  <ion-item ng-repeat="item in items" option-butto
    <img ng-src="{{ item.pic }}">
    <h2>{{ item.name }}</h2>
    <p>{{ item.quote }}</p>
  </ion-item>
</ion-list>
```



source: [Ionic presentation]

Ionic (Side menu)

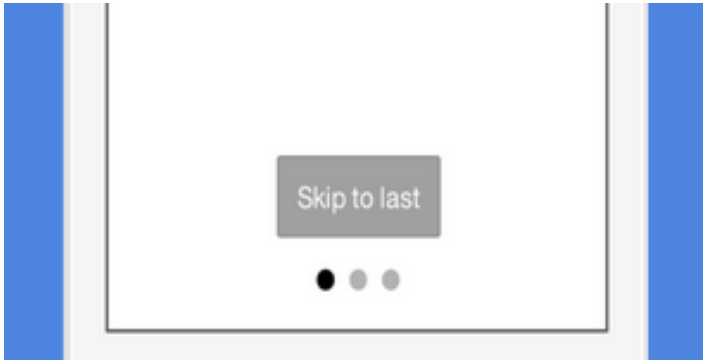
```
<ion-side-menus>

  <ion-side-menu-content>
    <ion-nav-bar></ion-nav-bar>
    <ion-nav-view></ion-nav-view>
  </ion-side-menu-content>

  <ion-side-menu side="left">
    <header class="bar bar-header bar-positive">
      <div class="title">Projects</div>
    </header>
    <ion-content has-header="true">
      <div class="list">
        <a href="#/work" class="item">Work</a>
        <a href="#/home" class="item">Home</a>
      </div>
    </ion-content>
  </ion-side-menu>

</ion-side-menus>
```



source: [Ionic presentation]

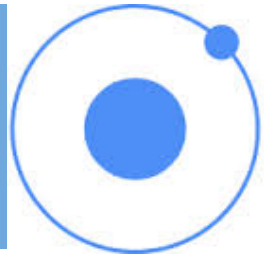
Ionic (Slide Box)

```
<ion-slide-box on-slide-changed="change(index)">
  <ion-slide>
    Slide 1
  </ion-slide>
  <ion-slide>
    Slide 2
  </ion-slide>
  <ion-slide>
    Slide 3
  </ion-slide>
</ion-slide-box>
```

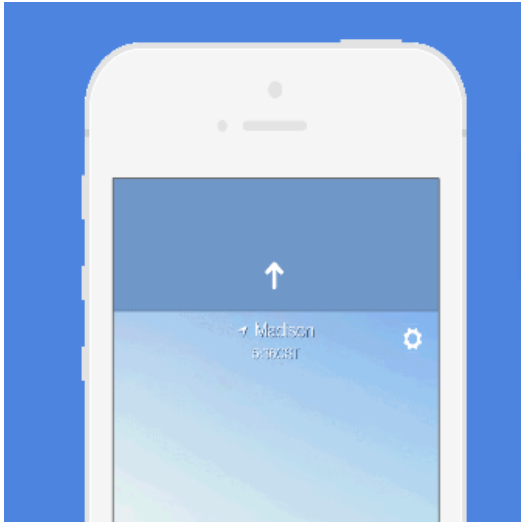


source: [Ionic presentation]

Ionic (Pull to refresh)

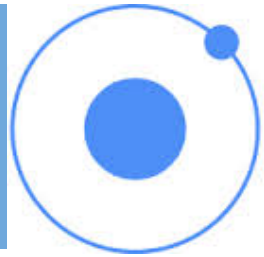


```
<ion-content on-refresh="refreshData()">
  <ion-refresher></ion-refresher>
  <!-- content -->
</ion-content>
```



source: [Ionic presentation]

Ionic (Pull to refresh)



```
<ion-content on-refresh="refreshData()">
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</ion-content>
```
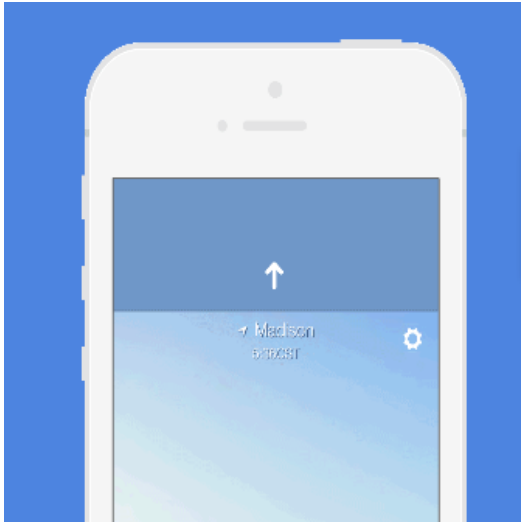
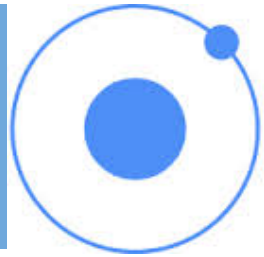



source: [Ionic presentation]

Ionic (Pull to refresh)



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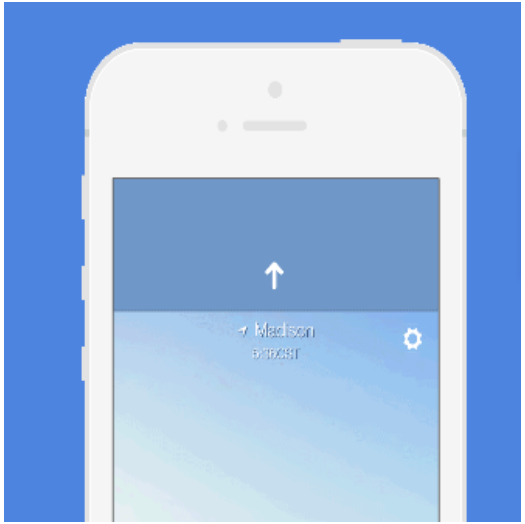


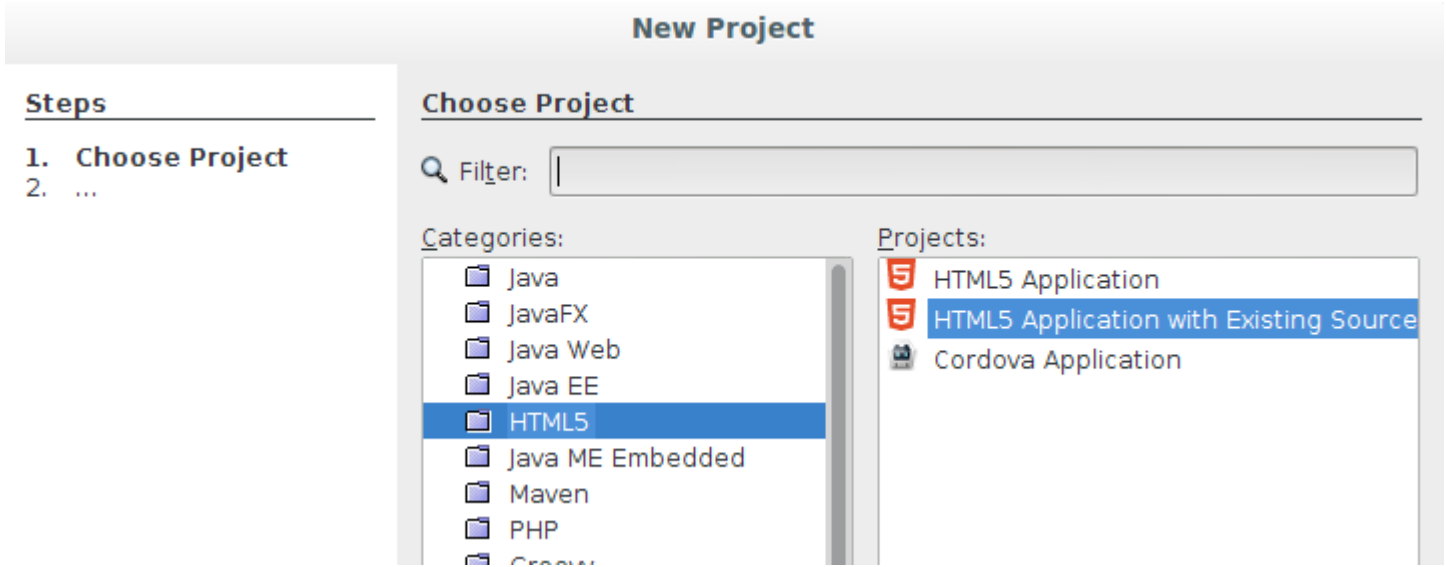
source: [Ionic presentation]

Ionic (Installation)

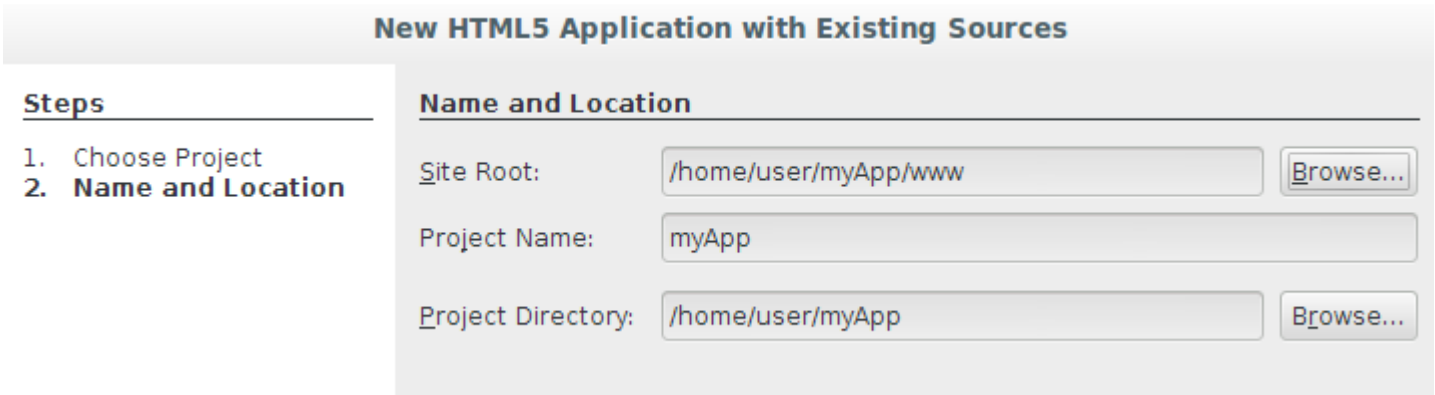
```
# node.js installation
sudo add-apt-repository ppa:chris-lea/node.js
sudo apt-get update
sudo apt-get install nodejs

#IONIC installation
sudo npm install -g cordova ionic
#ionic start app
ionic start myApp blank
#ionic start server
cd /home/user/myApp
ionic serve
```

Ionic (Netbeans)



Ionic (Netbeans)



Ionic (Netbeans)