



ionic

# CROSS-PLATFORM DEVELOPMENT MODUL 2 IONIC – GRUND

Mahmud Al Hakim  
[www.alhakim.se](http://www.alhakim.se)  
mahmud@alhakim.se

# OLIKA TYPER AV MOBILA APPLIKATIONER

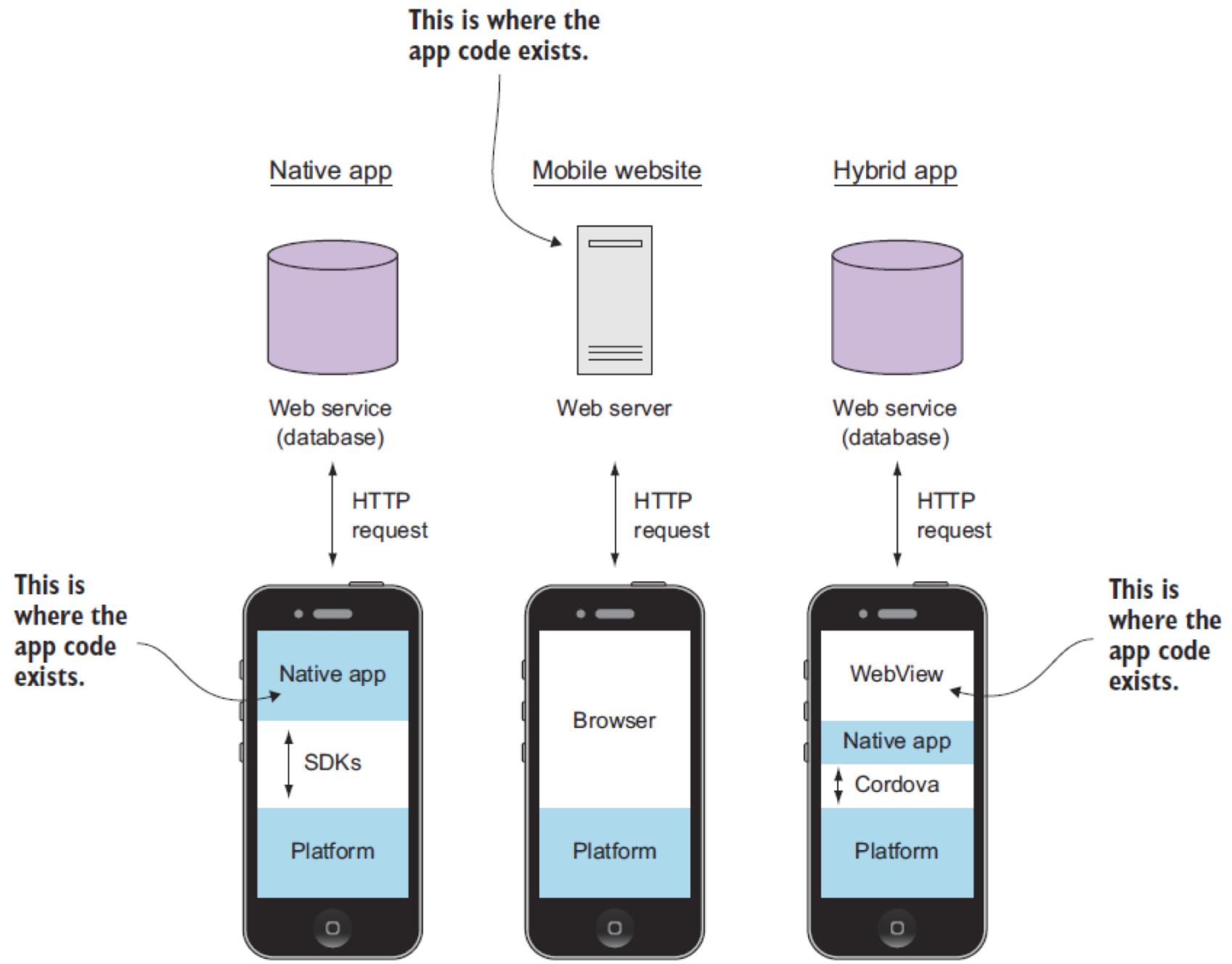


Figure 1.2 Native apps, mobile websites, and hybrid app architectures compared side by side

Bildkälla:  
Ionic in Action, Wilken 2016

# VAD ÄR IONIC?

Ionic är ett Mobilapp-Ramverk.

Ionic är ett Open-Source-SDK för utveckling av mobilanpassade hybridapplikationer.

Ionic bygger på Angular och Apache Cordova.

Ionic använder standard webbteknologier såsom HTML, CSS och JavaScript.

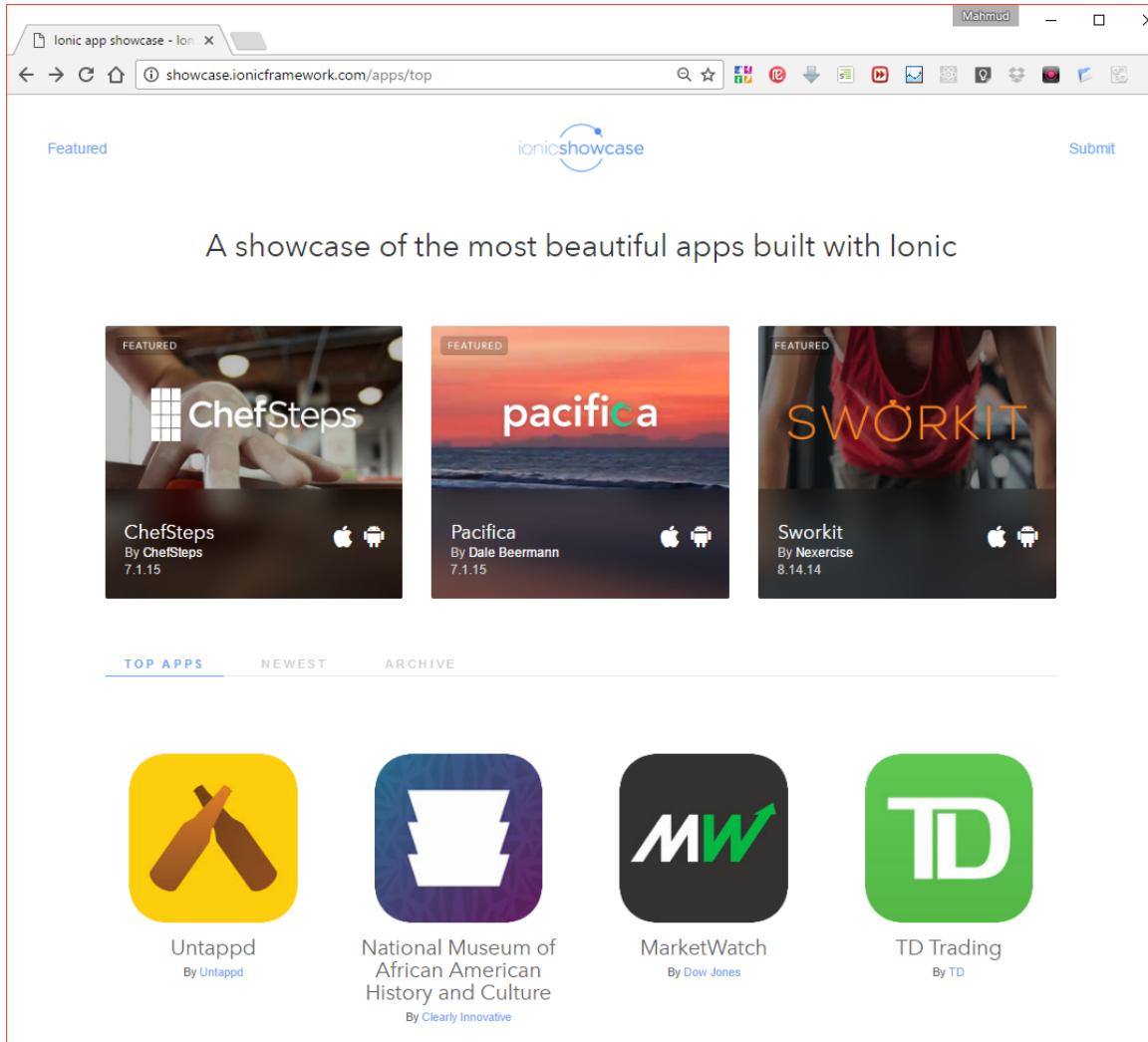
Ionic (v1) lanserades november 2013

Officiell hemsida: <http://ionicframework.com/>

"Advanced HTML5 hybrid mobile app development framework."

# Ionic Showcase

<http://showcase.ionicframework.com/apps/top>



# VAD ÄR APACHE CORDOVA?



Cordova (det gamla PhoneGap) är ett ramverk för utveckling av mobila applikationer.

Cordova är Open-source och utvecklas under Apache-projekt.

Cordova tar hand om kommunikationen mellan en hybrid-app och enheternas

"Native API" såsom GPS, kompass och Kamera.

Officiell hemsida: <https://cordova.apache.org/>

# IONIC STACK

Ionic stack mental model

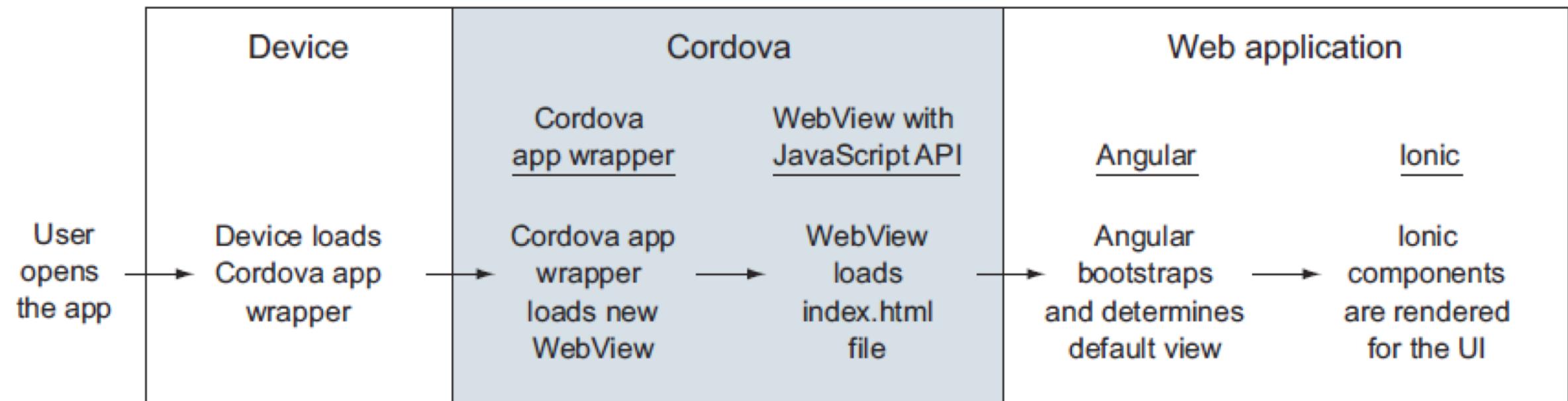


Figure 1.1 The stack of technologies used with the Ionic framework, and how they fit together

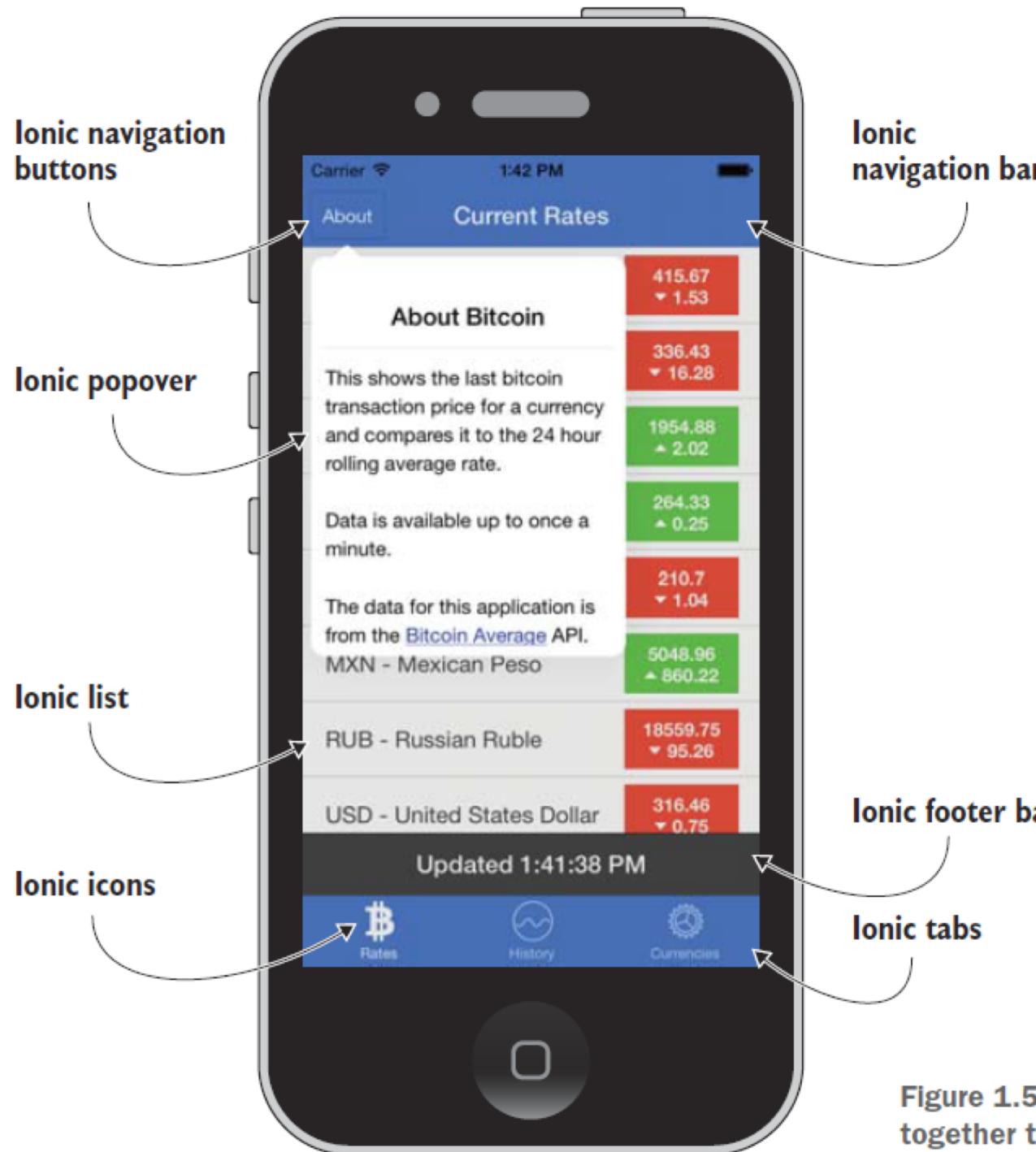


Figure 1.5 How parts of Ionic work together to create a usable interface

Bildkälla:  
Ionic in Action, Wilken 2016

# INSTALLERA IONIC

1. Installera Node.JS (NPM) från <http://nodejs.org>
2. Installera Ionic genom att köra detta kommando

```
npm install -g ionic
```

OBS! Du behöver köra med sudo på mac så här:

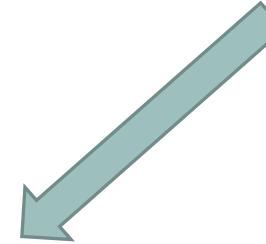
```
sudo npm install -g ionic
```

Mer information finns här

<https://ionicframework.com/docs/v1/overview/>

# SKAPA ETT NYTT PROJEKT

1. KÖR DETTA KOMMANDO: **ionic start project01 --type ionic1**
2. VÄLJ blank
3. Välj Nej på frågan om Cordova Integration.
4. Välj Nej på Ionic Pro SDK

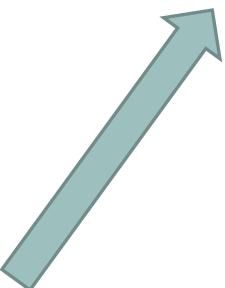


```
Mahmuds-MacBook-Air:Ionic mahmudalhakim$ ionic start project01 --type ionic1
```

```
? What starter would you like to use:
```

```
 tabs ..... ionic1 A starting project for Ionic using a simple tab  
bed i  
nterface
```

```
> blank ..... ionic1 A blank starter project for Ionic
```



# UNDERSÖK PROJEKTAPPEN

OBS! Vi kommer att jobba i www-mappen.  
Allt annat är överkrus!

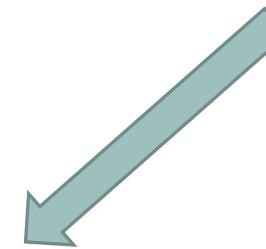


| ◀ www |                   |
|-------|-------------------|
| ▶     | css               |
| ▶     | img               |
| ▶     | js                |
| ▶     | lib               |
| ↔     | index.html        |
| {}    | manifest.json     |
| JS    | service-worker.js |

| ◀ project01           |
|-----------------------|
| ▶ hooks               |
| ▶ node_modules        |
| ▶ scss                |
| ▶ www                 |
| 甥 .bowerrc            |
| ⚙ .editorconfig       |
| ◆ .gitignore          |
| 甥 bower.json          |
| JS gulpfile.js        |
| ⌚ ionic.config.json   |
| { } package-lock.json |
| { } package.json      |

# NAVIGERA TILL PROJEKTMAPPEN KÖR APPLIKATIONEN MED KOMMANDOT **IONIC SERVE**

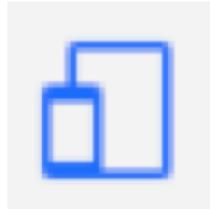
```
Mahmuds-MacBook-Air:Ionic mahmudalhakim$ cd project01/  
Mahmuds-MacBook-Air:project01 mahmudalhakim$ ionic serve  
Starting server (address: 0.0.0.0, port: 8100, dev server port: 53703,  
livereload port: 35729) - Ctrl+C to cancel  
[OK] Development server running!  
Local: http://localhost:8100  
External: http://172.20.200.122:8100  
DevApp: project01@8100 on Mahmuds-MacBook-Air.local
```



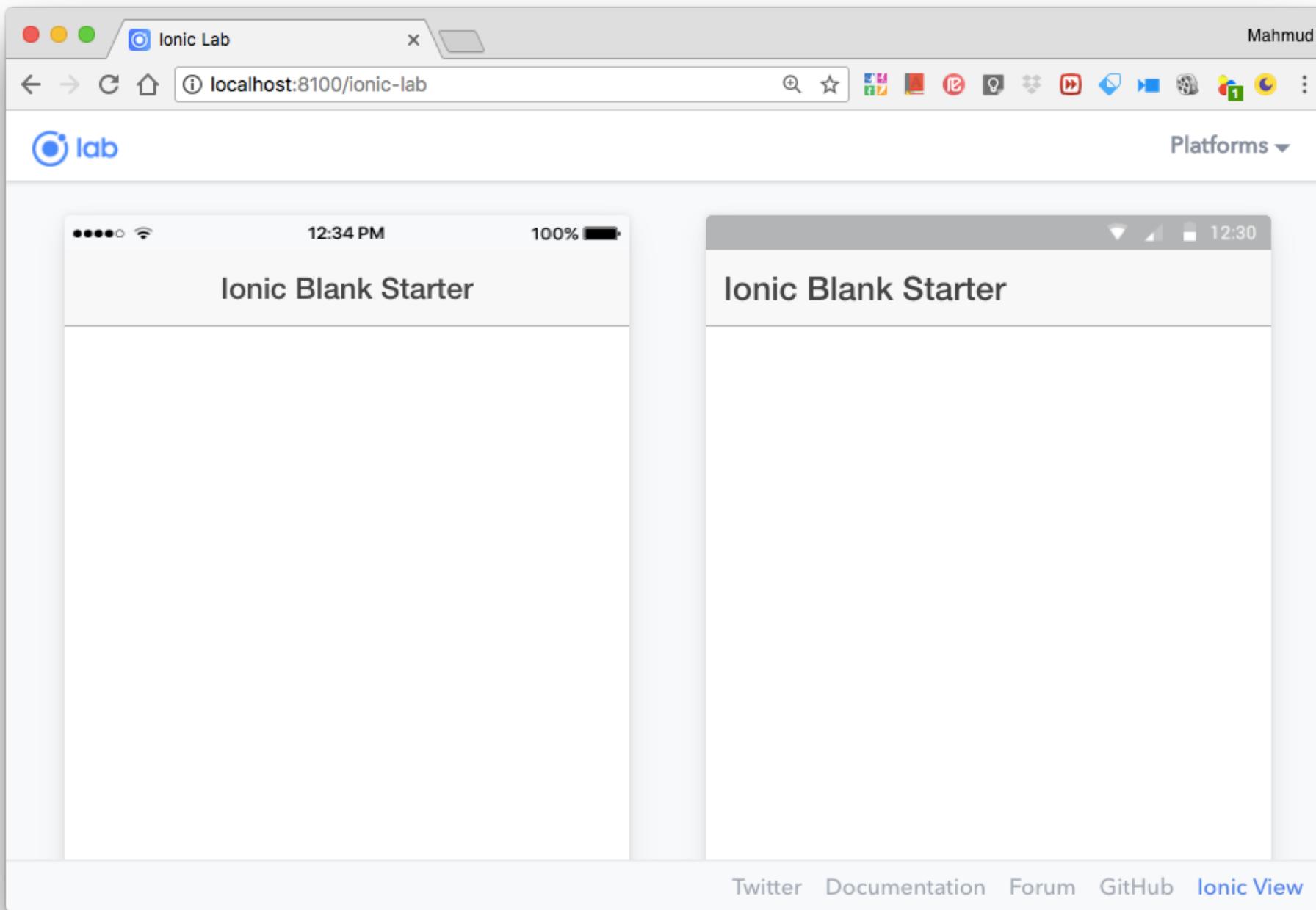
# VISA APPLIKATIONEN I CHROME DEVTOOLS

1. Högerklicka → Inspektera

2. Klicka på knappen  
"Toggle Device Toolbar"



# IONIC LAB



Visa flera  
plattformar  
med kommandot  
**ionic serve -l**

# STARTSIDAN (index.html)

```
<body ng-app="starter">  
  
  <ion-pane>  
    <ion-header-bar class="bar-stable">  
      <h1 class="title">Ionic Blank Starter</h1>  
    </ion-header-bar>  
    <ion-content>  
    </ion-content>  
  </ion-pane>  
  
</body>
```

Lägg märke till  
att en ionic-app  
är i grunden en  
Angular-app

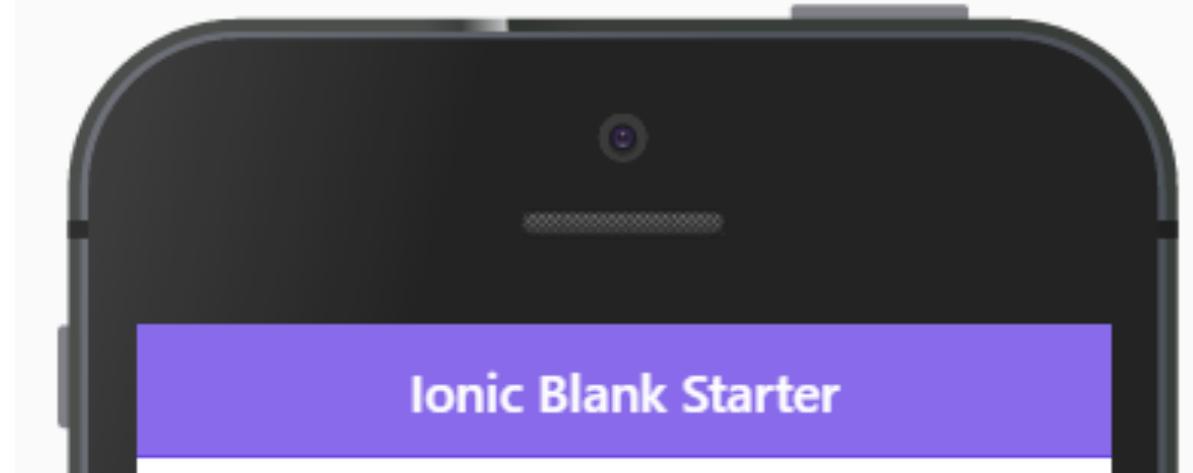
Ionic har egna  
direktiv och ett  
eget CSS-Bibliotek

# FILEN app.js

```
// Ionic Starter App

// angular.module is a global place for creating,
registering and retrieving Angular modules
// 'starter' is the name of this angular module example
(also set in a <body> attribute in index.html)
// the 2nd parameter is an array of 'requires'
angular.module('starter', ['ionic'])
```

# HEADERS (BARS)



```
<ion-header-bar class="bar-royal">  
  <h1 class="title">Ionic Blank Starter</h1>  
</ion-header-bar>
```

bar-light

bar-dark

bar-positive

bar-calm

bar-balanced

bar-stable

bar-royal

bar-assertive

bar-energized

# LÄGG TILL INNEHÅLL

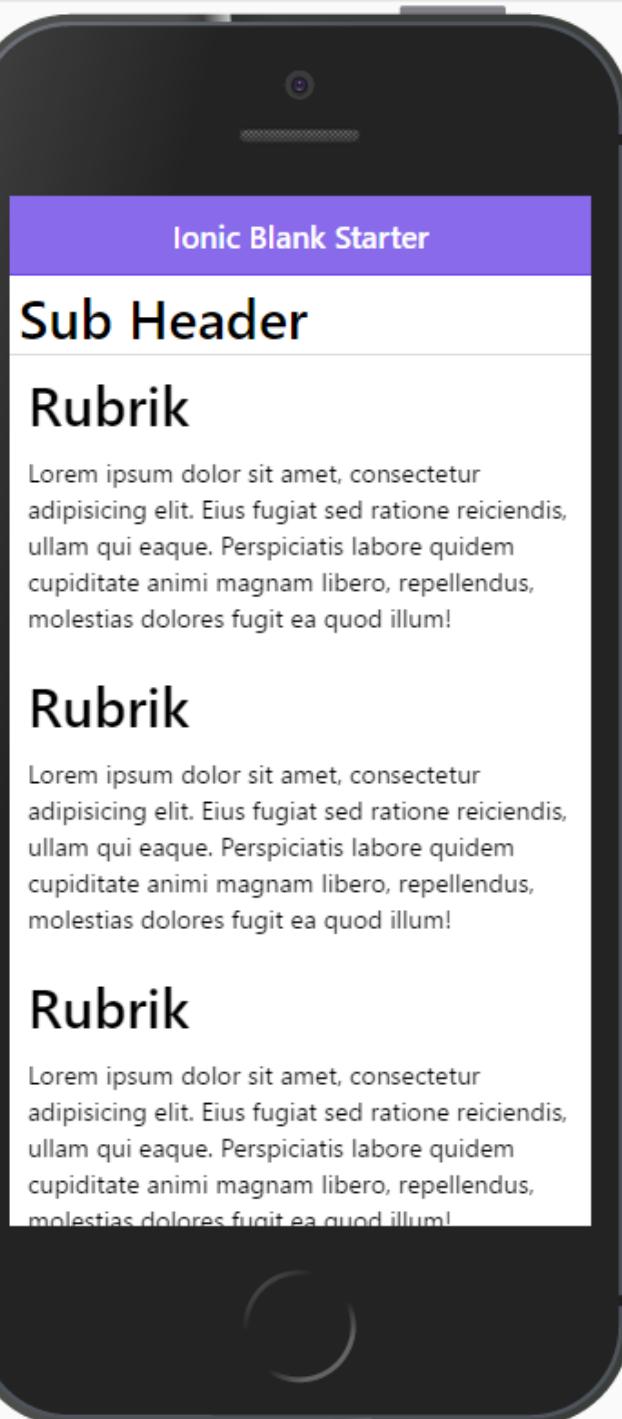
```
<ion-content class="padding">  
  <h2>Rubrik</h2>  
  <p>Lorem ipsum dolor sit amet, consectetur adipisicing  
    elit. Eius fugiat sed ratione reiciendis, ullam qui e  
    aque. Perspiciatis labore quidem cupiditate animi magn  
    am libero, repellendus, molestias dolores fugit ea quo  
    d illum!</p>  
</ion-content>
```

Lägg till lite  
padding (10px)



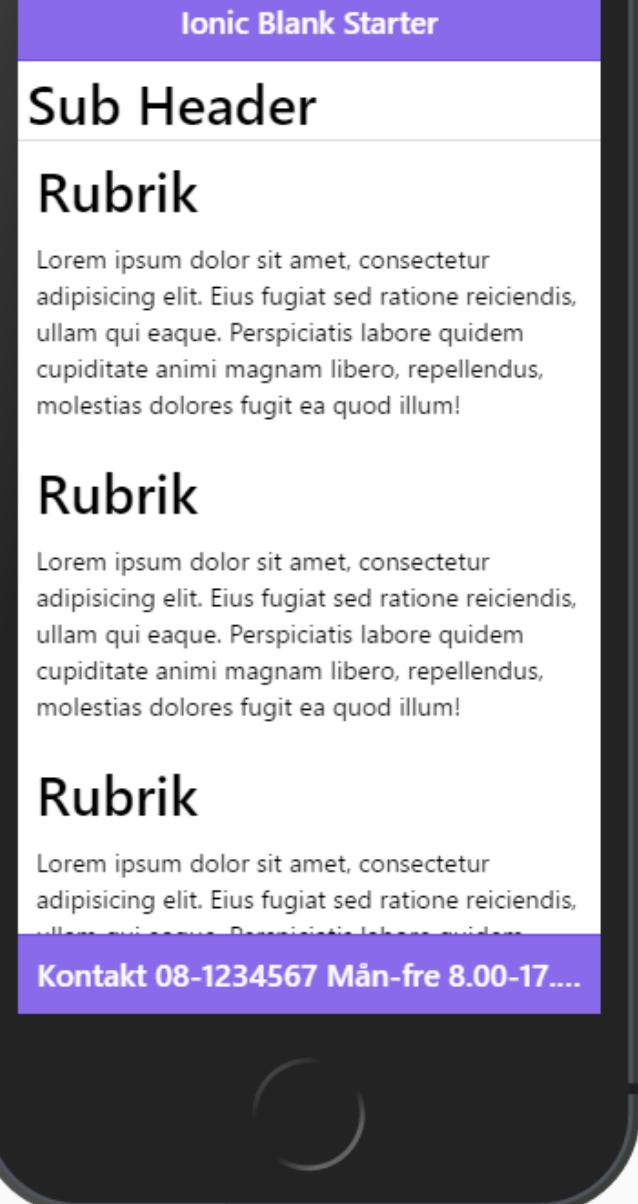
# SUB HEADER

```
<ion-header-bar class="bar-royal">  
    <h1 class="title">Ionic Blank Starter</h1>  
</ion-header-bar>  
  
<div class="bar bar-subheader">  
    <h2>Sub Header</h2>  
</div>  
  
<ion-content class="padding has-subheader">  
    <h2>Rubrik</h2>
```

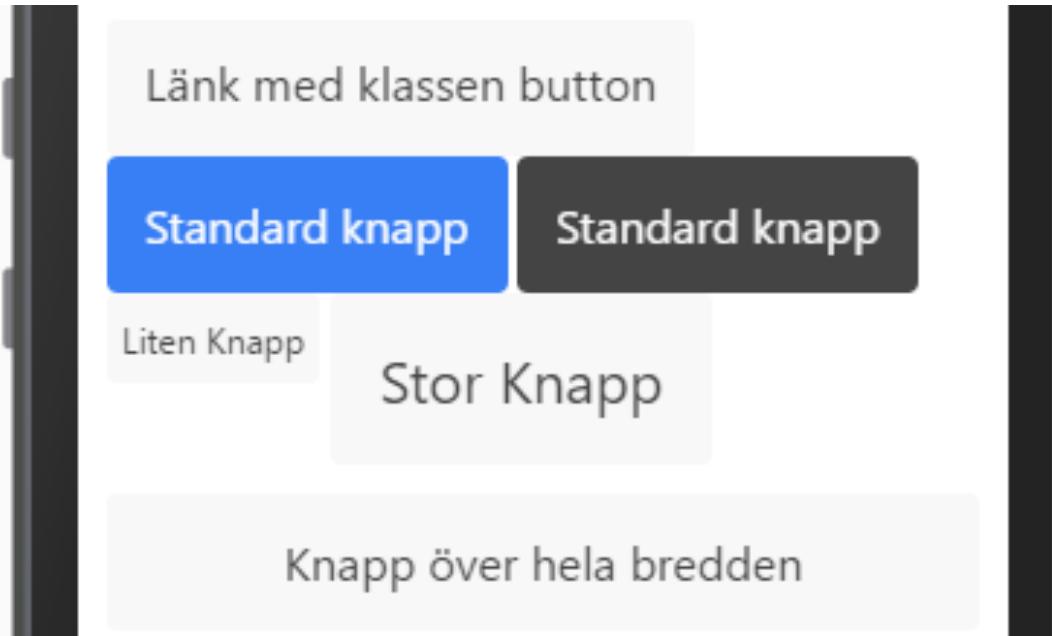


# FOOTER

```
<ion-footer-bar class="bar-royal">  
  <h1 class="title">  
    Kontakt 08-1234567 Mån-fre 8.00-17.00  
  </h1>  
</ion-footer-bar>
```



# KNAPPAR



```
<a class="button" href="#">Länk med klassen button</a> <br>
<button class="button button-positive">Standard knapp</button>
<button class="button button-dark">Standard knapp</button>
<button class="button button-small">Liten Knapp</button>
<button class="button button-large">Stor Knapp</button>
<button class="button button-block">Knapp över hela bredden</button>
```

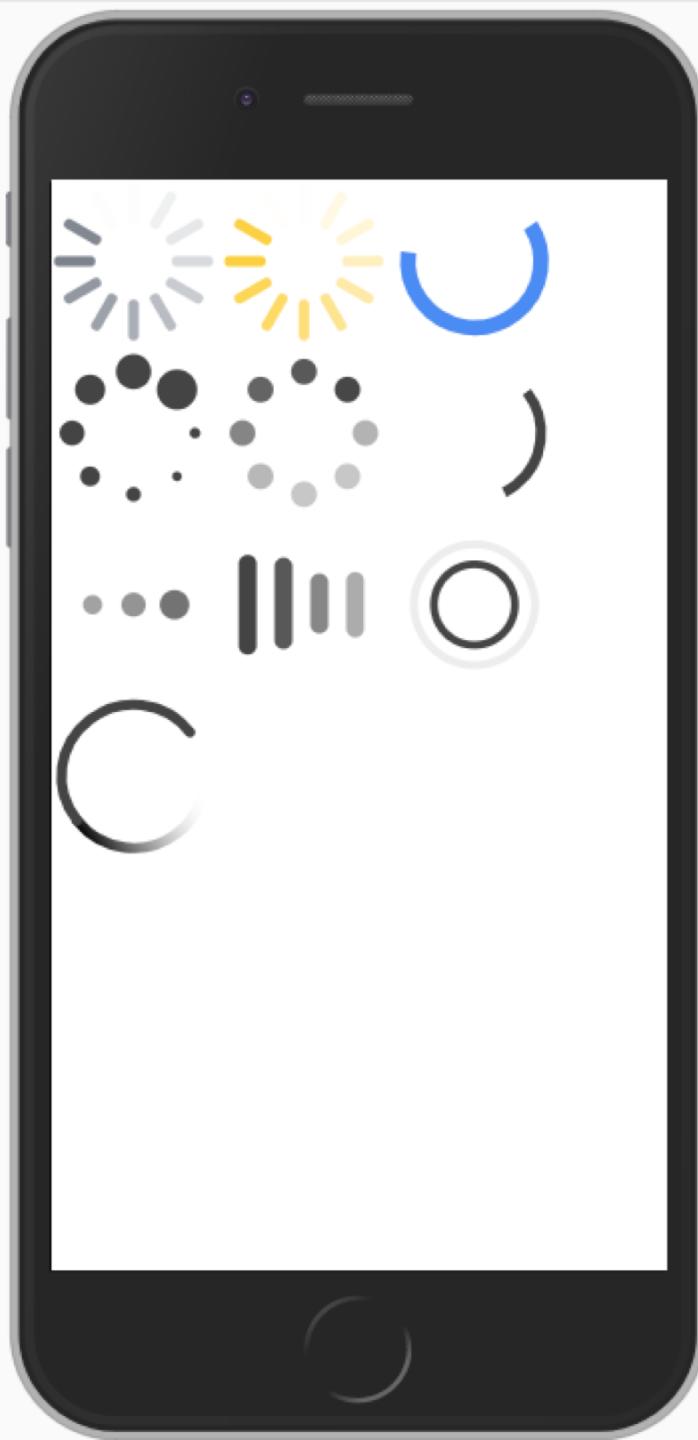
# BUTTON-BAR



```
<div class="button-bar">  
    <button class="button button-calm">Ett</button>  
    <button class="button button-balanced">Två</button>  
    <button class="button button-assertive">Tre</button>  
</div>
```

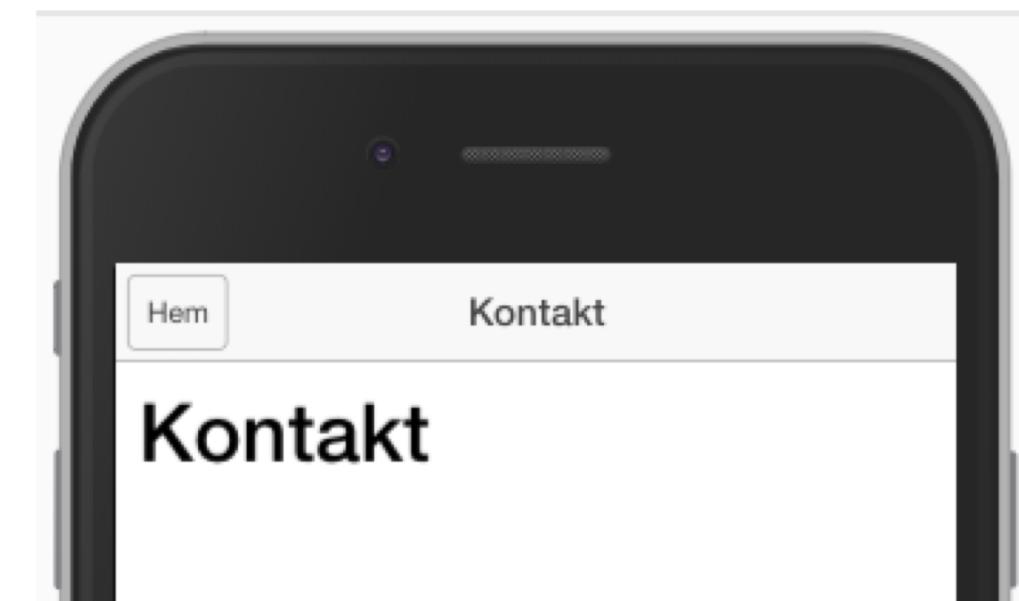
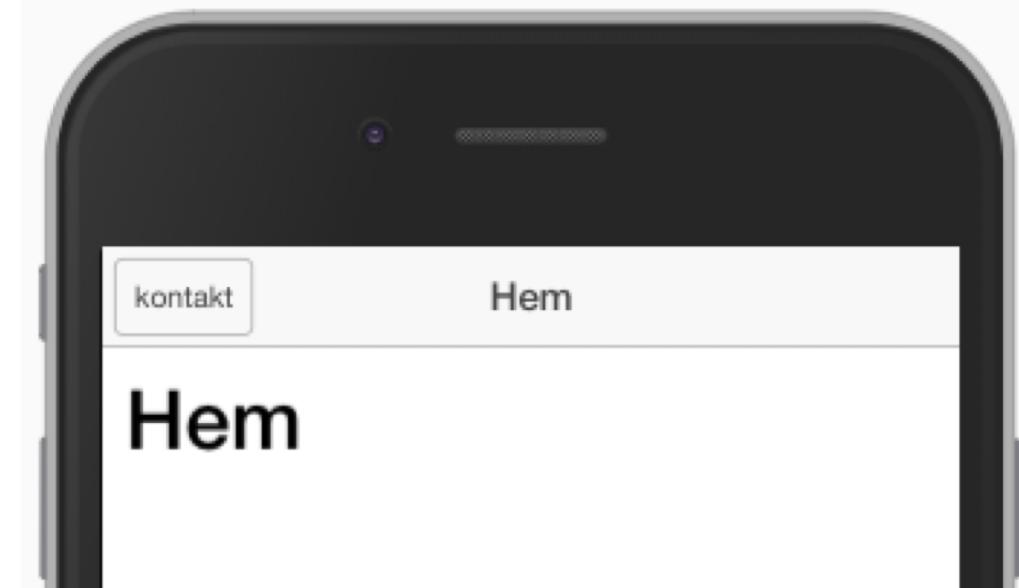
# SPINNERS

```
<style>  
  .spinner svg {width: 100px; height: 100px;}  
</style>  
  
<ion-spinner></ion-spinner>  
<ion-spinner class="spinner-energized"></ion-spinner>  
<ion-spinner icon="android"></ion-spinner>  
<ion-spinner icon="bubbles"></ion-spinner>  
<ion-spinner icon="circles"></ion-spinner>  
<ion-spinner icon="crescent"></ion-spinner>  
<ion-spinner icon="dots"></ion-spinner>  
<ion-spinner icon="lines"></ion-spinner>  
<ion-spinner icon="ripple"></ion-spinner>  
<ion-spinner icon="spiral"></ion-spinner>
```



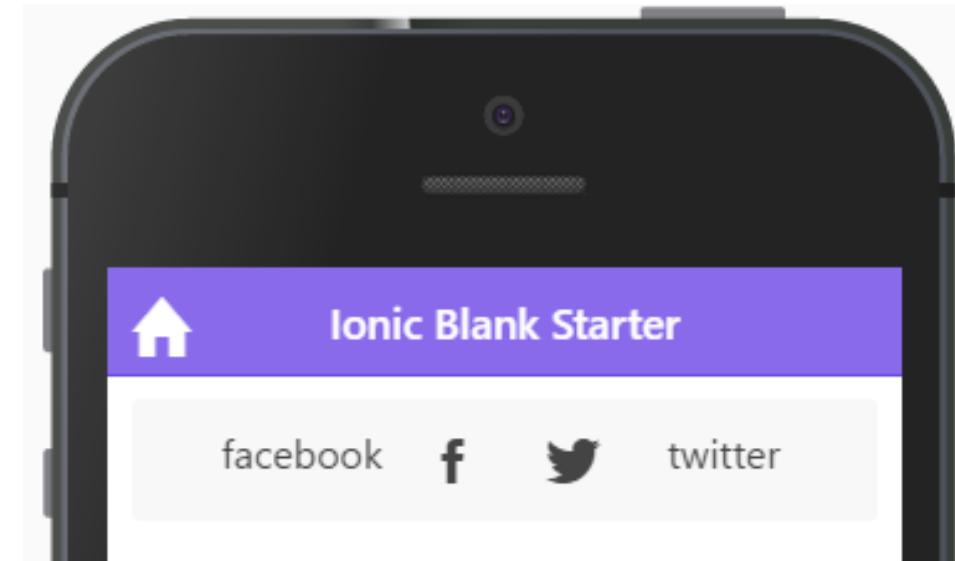
# ATT LÄNKA TILL OLIKA FILER

```
<ion-pane>  
<ion-header-bar class="bar-stable">  
  <a class="button" href="kontakt.html">  
    kontakt  
  </a>  
  <h1 class="title">Hem</h1>  
</ion-header-bar>  
<ion-content class="padding">  
  <h1>Hem</h1>  
</ion-content>  
</ion-pane>
```



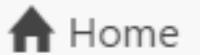
# HTTP://IONICONS.COM

```
<ion-header-bar class="bar-royal">
  <a class="button button-clear" href="#">
    <i class="icon ion-home"></i>
  </a>
  <h1 class="title">Ionic Blank Starter</h1>
</ion-header-bar>
<ion-content class="padding">
  <div class="button-bar">
    <a class="button icon ion-social-facebook icon-right">facebook</a>
    <a class="button icon ion-social-twitter icon-left">twitter</a>
  </div>
```



# KNAPPAR OCH IKONER – FLERA EXEMPEL

```
<button class="button icon-left ion-home">Home</button>
<br>
<button class="button icon-left ion-star button-positive">Favorites</button>
<br>
<a class="button icon-right ion-chevron-right button-calm">Learn More</a>
<br>
<a class="button icon-left ion-chevron-left button-clear button-dark">Back</a>
<br>
<button class="button icon ion-gear-a"></button>
<br>
<a class="button button-icon icon ion-settings"></a>
<br>
<a class="button button-outline icon-right ion-navicon button-balanced">Reorder</a>
```

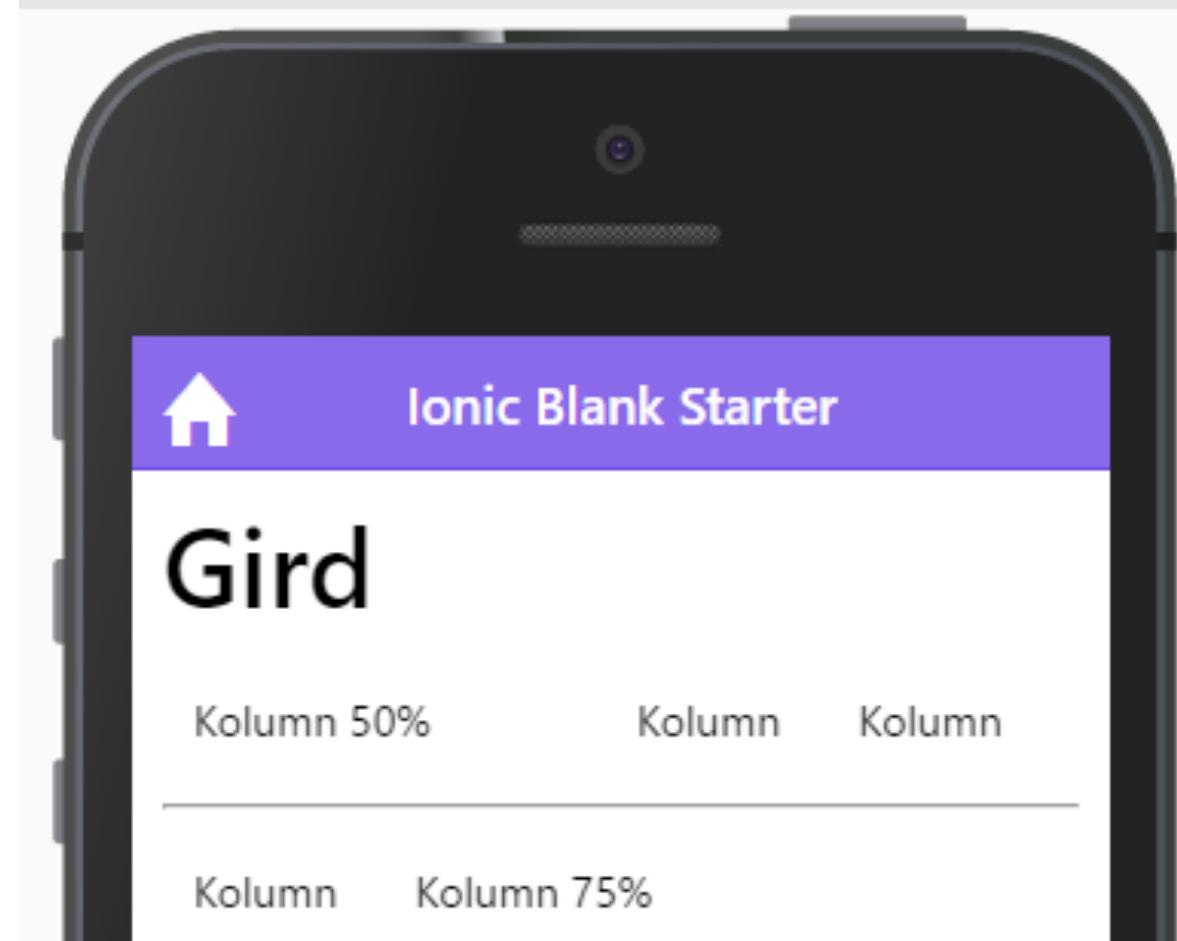


# GRID

```
<div class="row">
  <div class="col col-50">Kolumn 50%</div>
  <div class="col">Kolumn</div>
  <div class="col">Kolumn</div>
</div>

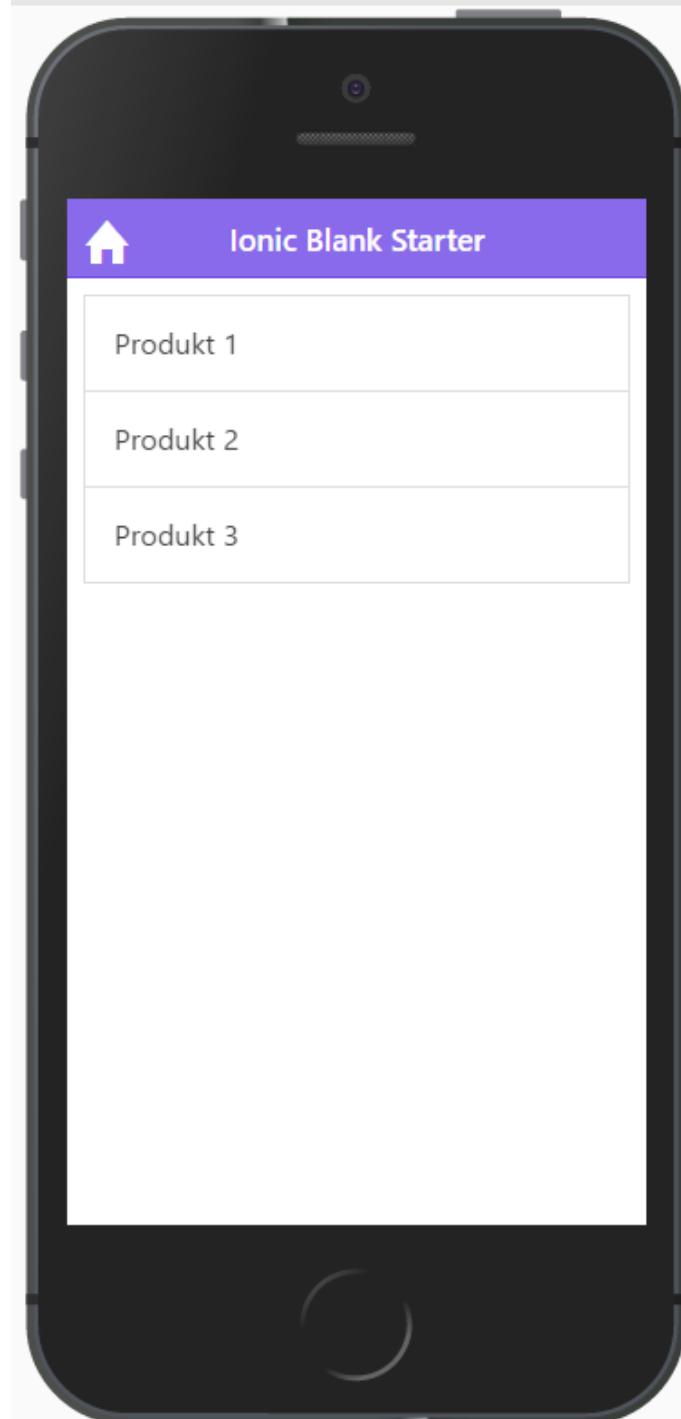

---


<div class="row">
  <div class="col">Kolumn</div>
  <div class="col col-75">Kolumn 75%</div>
</div>
```



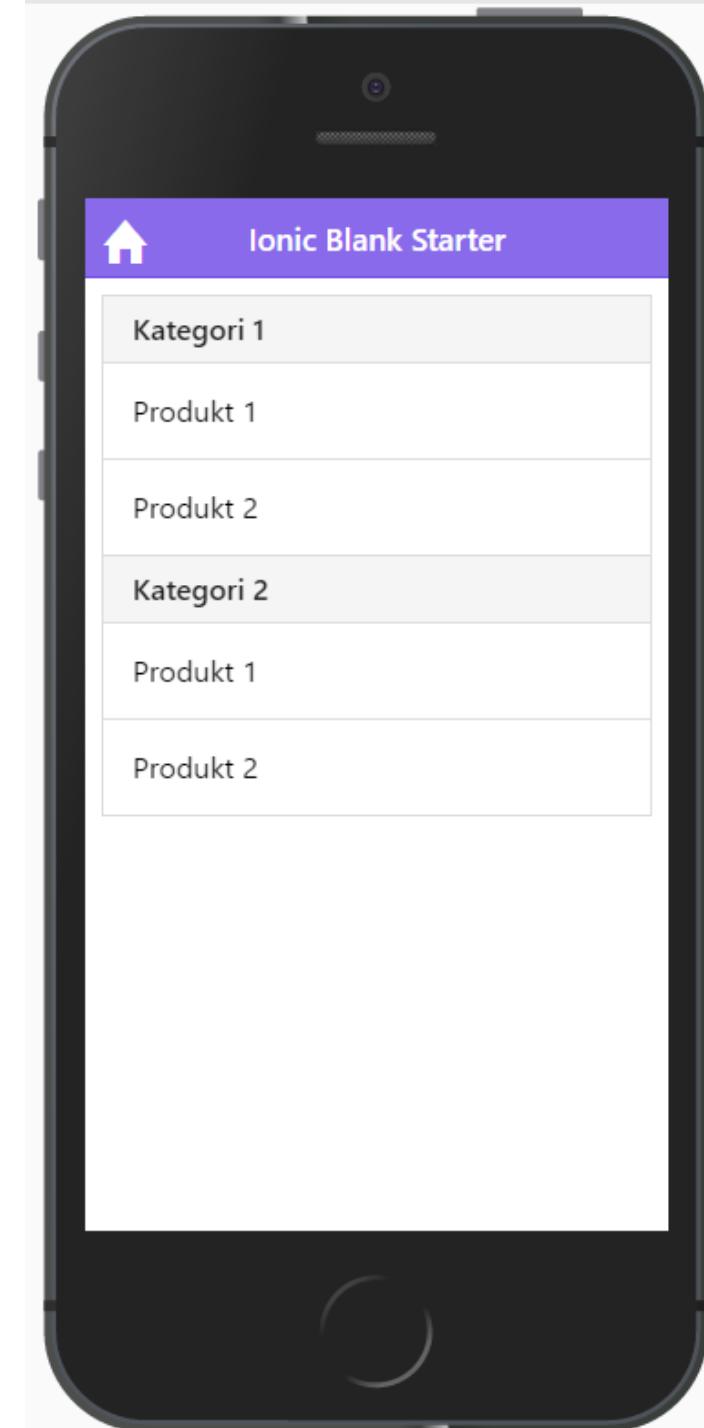
# LISTOR

```
<ul class="list">  
  <li class="item">  
    Produkt 1  
  </li>  
  <li class="item">  
    Produkt 2  
  </li>  
  <li class="item">  
    Produkt 3  
  </li>  
</ul>
```



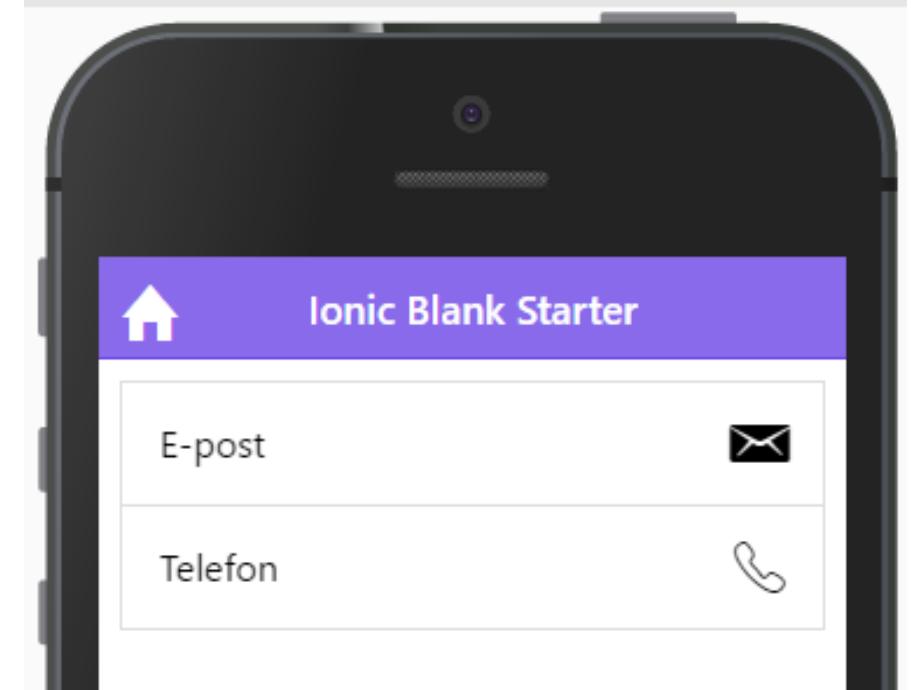
# LISTOR MED DIV ISTÄLLET FÖR UL

```
<div class="list">  
  <div class="item item-divider">  
    Kategori 1  
  </div>  
  <a class="item" href="#">Produkt 1</a>  
  <a class="item" href="#">Produkt 2</a>  
  <div class="item item-divider">  
    Kategori 2  
  </div>  
  <a class="item" href="#">Produkt 1</a>  
  <a class="item" href="#">Produkt 2</a>  
</div>
```



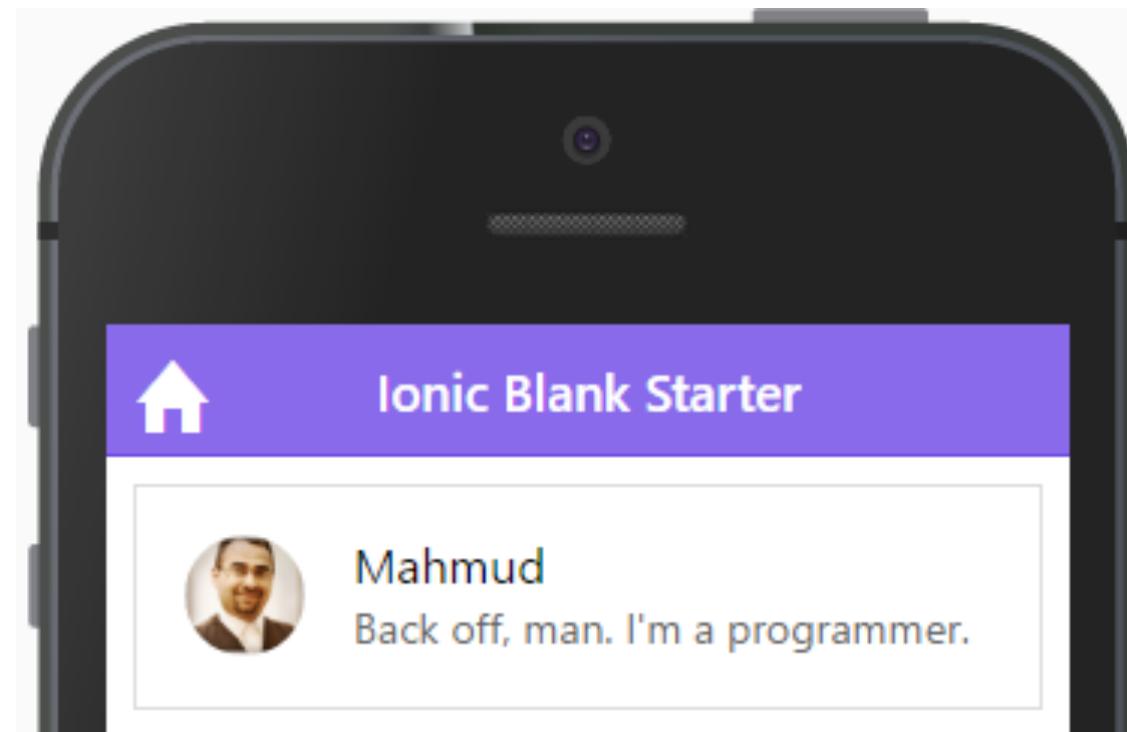
# LISTA MED IKONER

```
<div class="list">  
  <a class="item item-icon-right" href="#">  
    <i class="icon ion-email"></i>  
    E-post  
  </a>  
  <a class="item item-icon-right" href="#">  
    <i class="icon ion-ios-telephone-outline"></i>  
    Telefon  
  </a>  
</div>
```



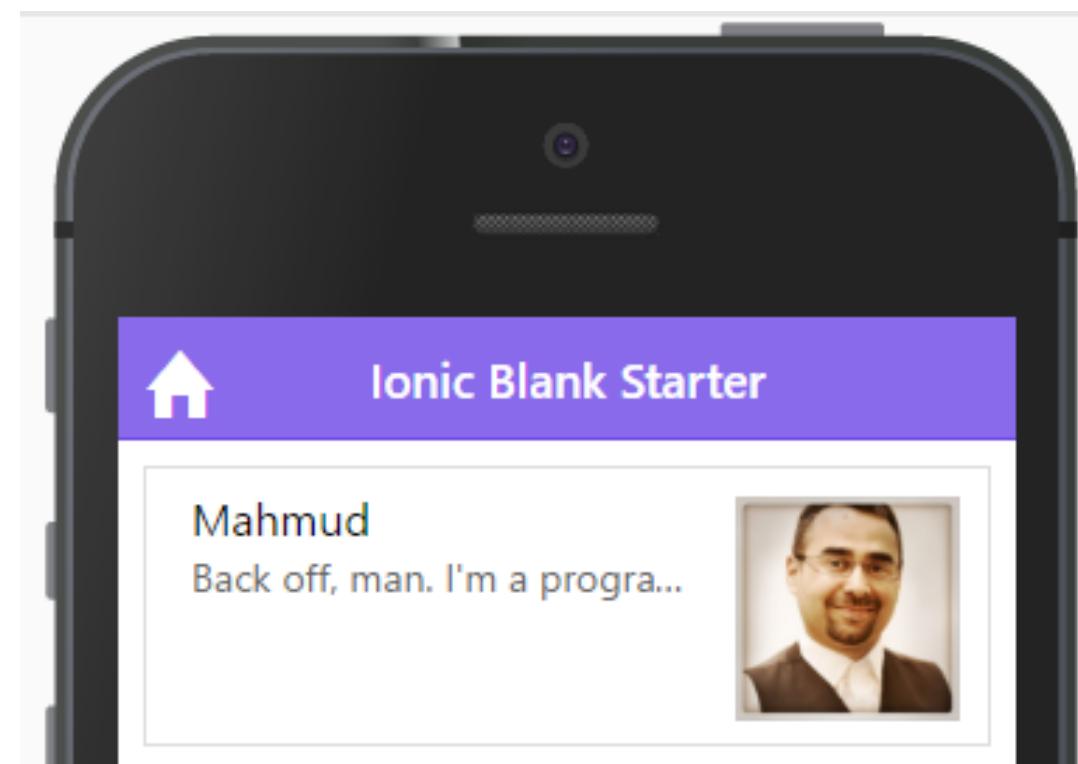
# LISTA MED AVATARS

```
<div class="list">  
  <a class="item item-avatar" href="#">  
      
    <h2>Mahmud</h2>  
    <p>Back off, man. I'm a programmer.</p>  
  </a>  
</div>
```



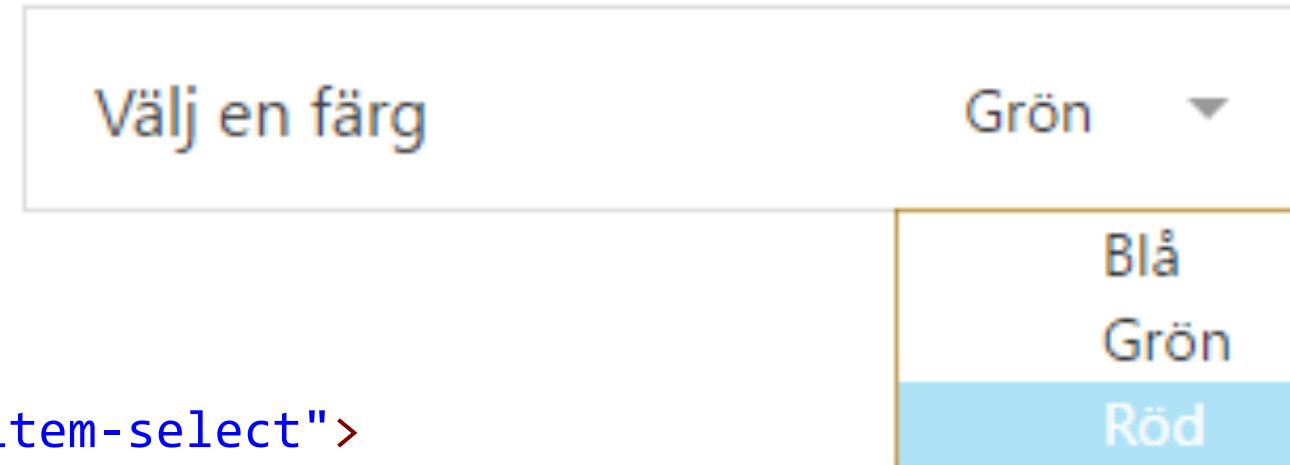
# LISTA MED THUMBNAILS

```
<div class="list">  
  <a class="item item-thumbnail-right" href="#">  
      
    <h2>Mahmud</h2>  
    <p>Back off, man. I'm a programmer.</p>  
  </a>  
</div>
```



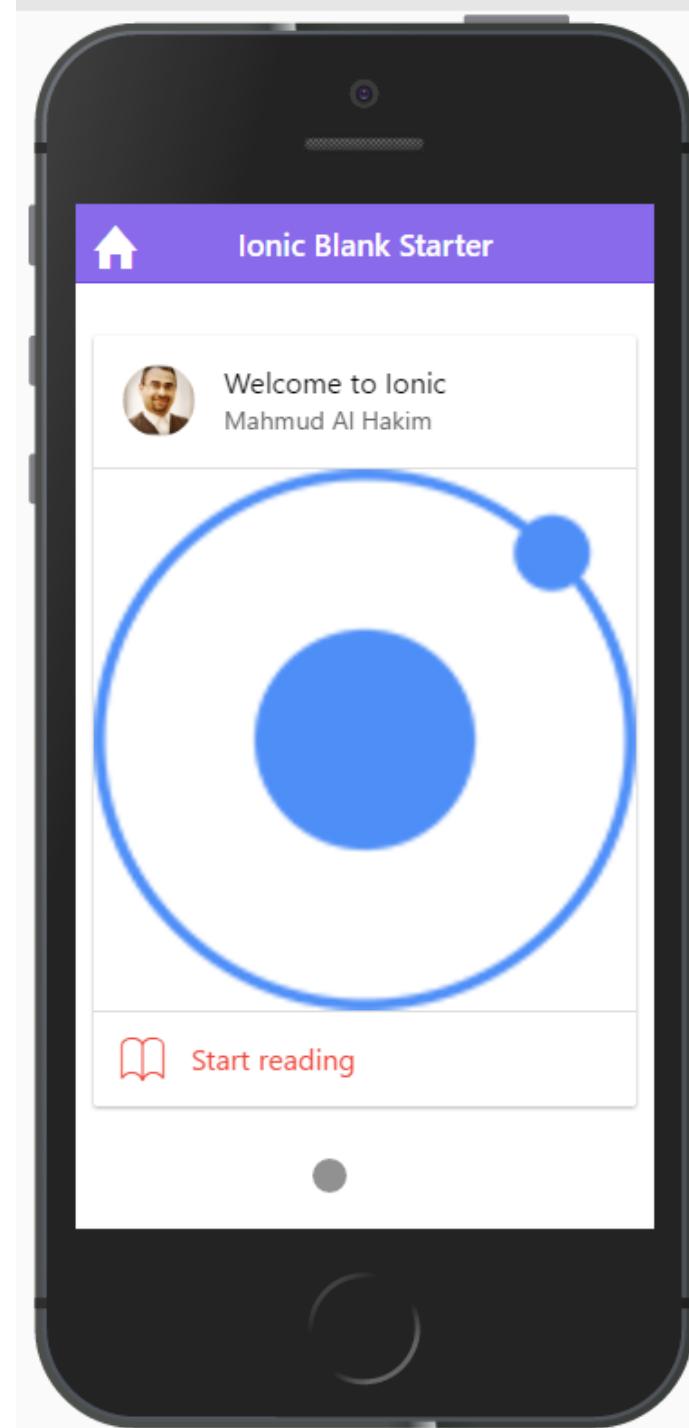
# Dropdown-listor

```
<div class="list">  
  <label class="item item-input item-select">  
    <div class="input-label">  
      Välj en färg  
    </div>  
    <select>  
      <option>Blå</option>  
      <option selected>Grön</option>  
      <option>Röd</option>  
    </select>  
  </label>  
</div>
```



# CARDS

```
<div class="list card">
  <div class="item item-avatar">
    
    <h2>Welcome to Ionic</h2>
    <p>Mahmud Al Hakim</p>
  </div>
  <div class="item item-image">
    
  </div>
  <a class="item item-icon-left assertive" href="#">
    <i class="icon ion-ios-book-outline"></i>
    Start reading
  </a>
</div>
```

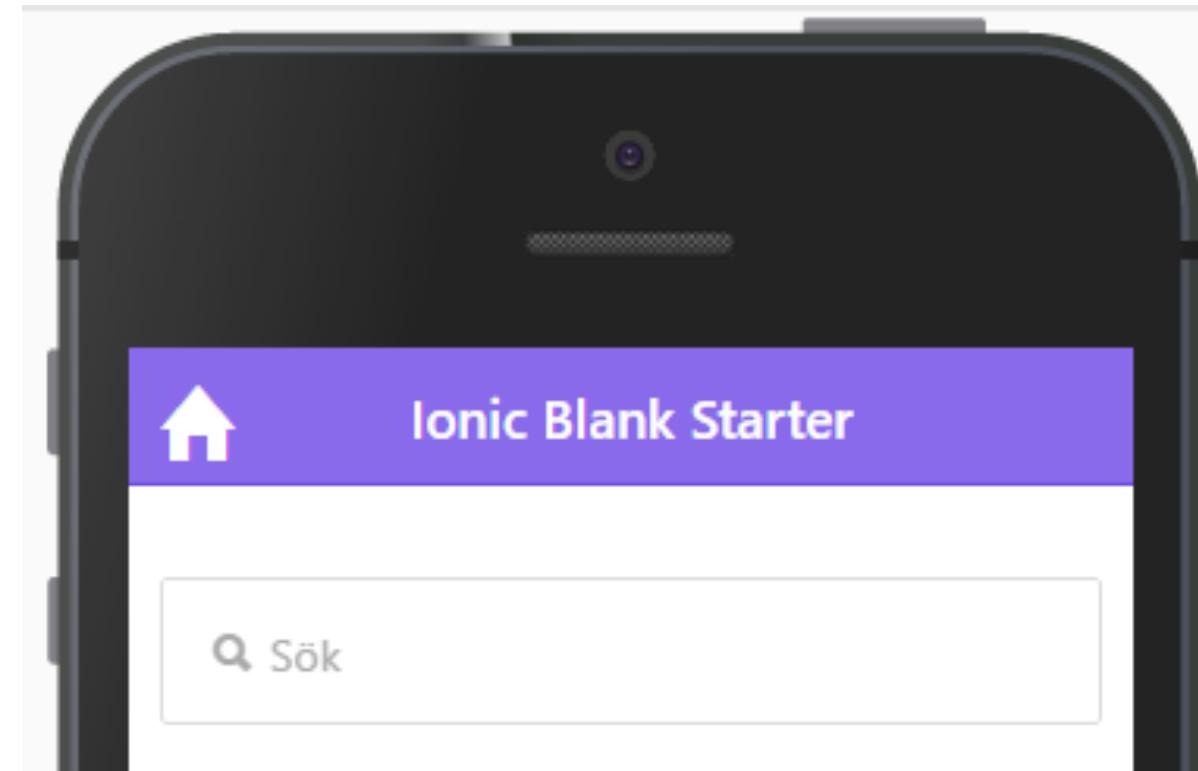


# RANGE



```
<div class="item range">
  <i class="icon ion-volume-low"></i>
  <input type="range" name="volume" min="0" max="100" value="50">
  <i class="icon ion-volume-high"></i>
</div>
```

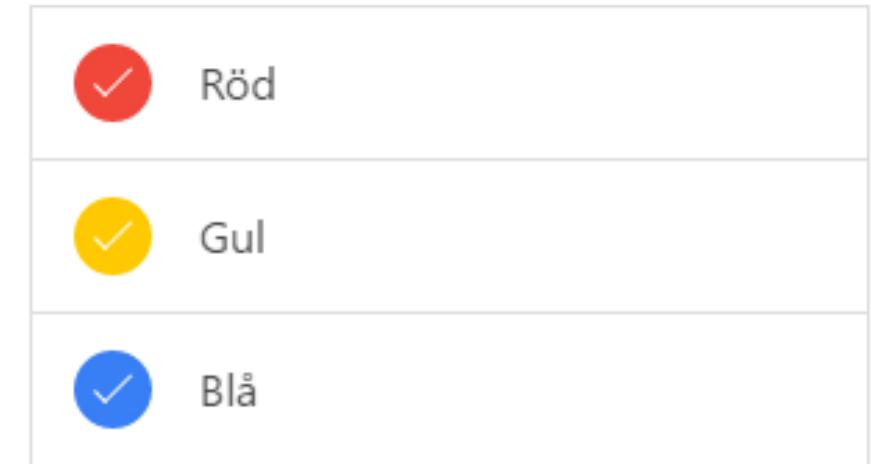
# INPUT MED EN IKON



```
<label class="item item-input">  
  <i class="icon ion-search placeholder-icon"></i>  
  <input type="text" placeholder="Sök">  
</label>
```

# CHECKBOX

```
<ion-list>  
  <ion-checkbox class="checkbox-assertive">  
    Röd  
  </ion-checkbox>  
  <ion-checkbox class="checkbox-energized">  
    Gul  
  </ion-checkbox>  
  <ion-checkbox class="checkbox-positive">  
    Blå  
  </ion-checkbox>  
</ion-list>
```



# RADIOKNAPPAR

Välj A

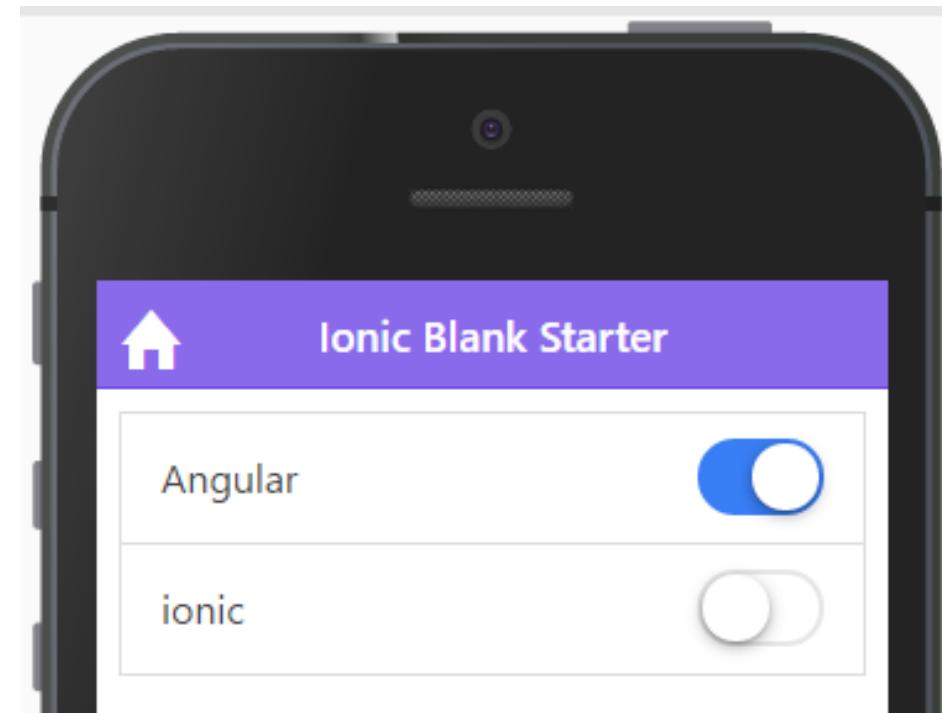


Välj B

```
<ion-list>
  <ion-radio ng-model="choice" ng-value="'A'">
    Välj A
  </ion-radio>
  <ion-radio ng-model="choice" ng-value="'B'">
    Välj B
  </ion-radio>
</ion-list>
```

# TOGGLE

```
<ul class="list">  
  <li class="item item-toggle">Angular  
    <label class="toggle toggle-positive">  
      <input type="checkbox" checked>  
      <div class="track">  
        <div class="handle"></div>  
      </div>  
    </label>  
  </li>  
</ul>
```



Header

Content

Footer

Buttons

List

Cards

Forms

Toggle

Checkbox

Radio Buttons

Range

Select

Tabs

Grid

Utility

# ÖVNINGAR

Skapa en ny Ionic-App

Gå igenom alla CSS-komponenter på

<https://ionicframework.com/docs/v1/components/>

Testa allt lokalt i din app.

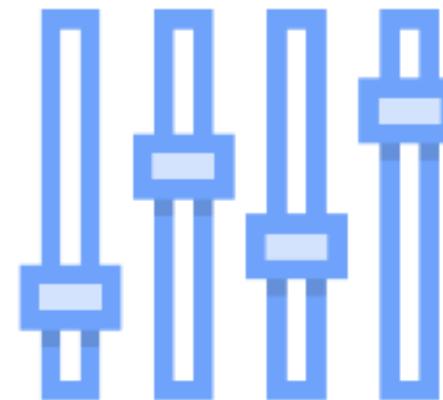
# CSS-COMPONENTS VS JAVASCRIPT

<http://ionicframework.com/docs/v1>



## CSS Components

A comprehensive list of our CSS mobile components. Everything you'd need.



## JavaScript

Explore our API docs for information on the Controllers and Javascript utilities.

# CSS-COMPONENTS VS JAVASCRIPT (EXEMPEL)

```
<ul class="list">
  <li class="item item-toggle">
    Airplane Mode
    <label class="toggle toggle-assertive">
      <input type="checkbox">
      <div class="track">
        <div class="handle"></div>
      </div>
    </label>
  </li>
</ul>
```

Airplane Mode



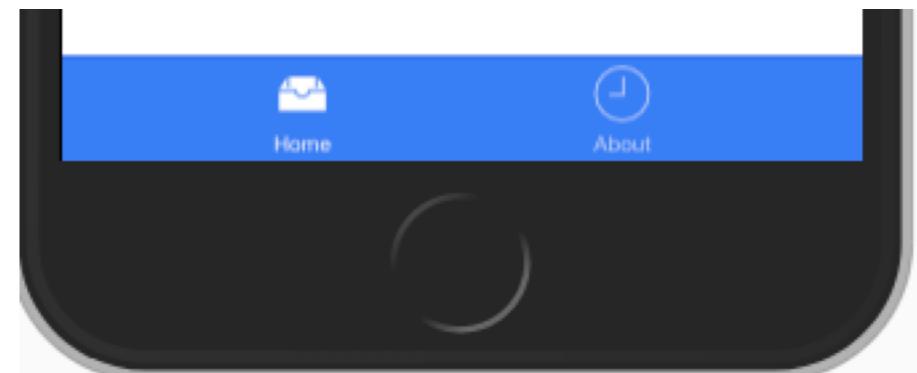
```
<ion-toggle
  ng-model="airplaneMode"
  toggle-class="toggle-calm">
  Airplane Mode
</ion-toggle>
```

<https://ionicframework.com/docs/v1/components/#toggle>

<https://ionicframework.com/docs/v1/api/directive/ionToggle/>

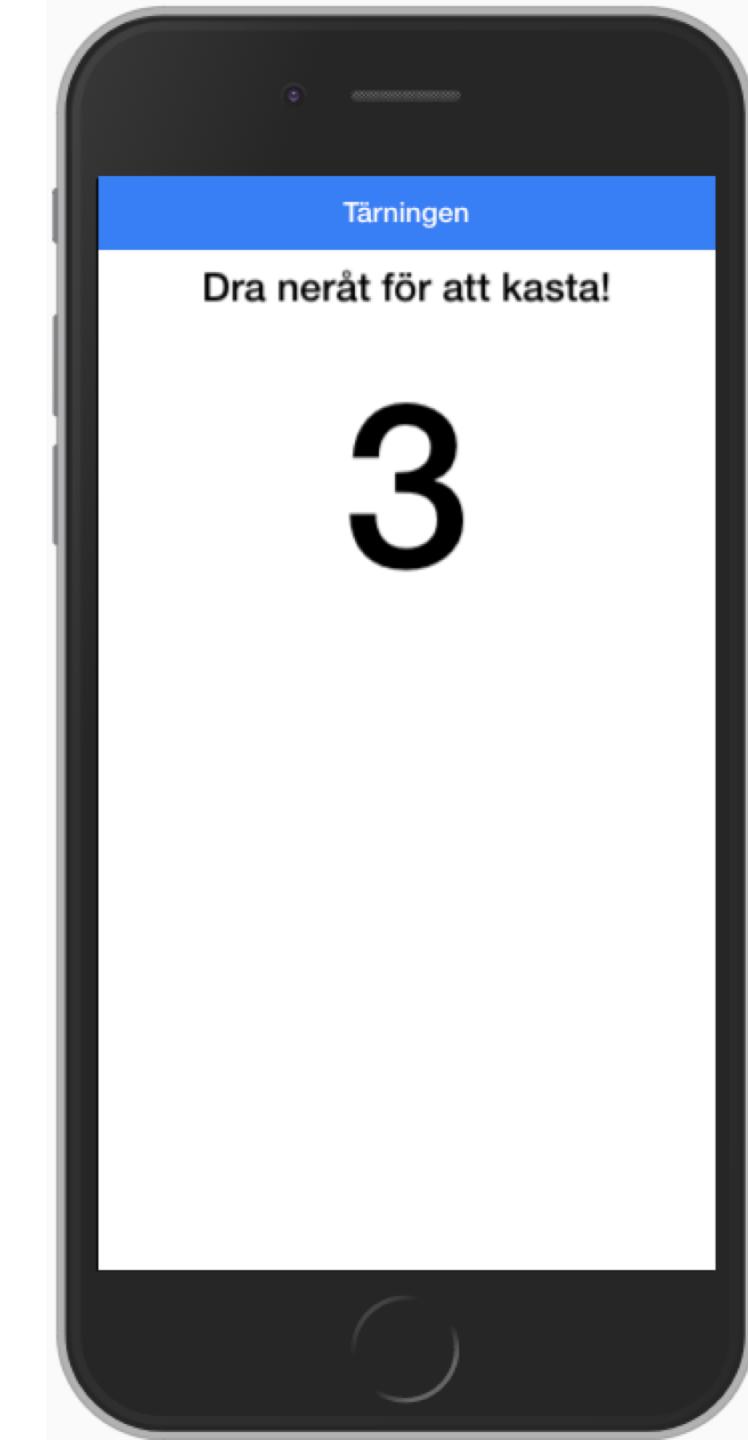
```
<ion-tabs class="tabs-positive tabs-icon-top">  
  <ion-tab title="Home"  
    icon-on="ion-ios-filing" icon-off="ion-ios-filing-outline">  
    <ion-content class="padding" style="margin-top:50px">  
      <h1>Home</h1>  
    </ion-content>  
  </ion-tab>  
  <ion-tab title="About"  
    icon-on="ion-ios-clock" icon-off="ion-ios-clock-outline">  
    <ion-content class="padding" style="margin-top:50px">  
      <h1>About</h1>  
    </ion-content>  
  </ion-tab>  
</ion-tabs>
```

FLIKAR



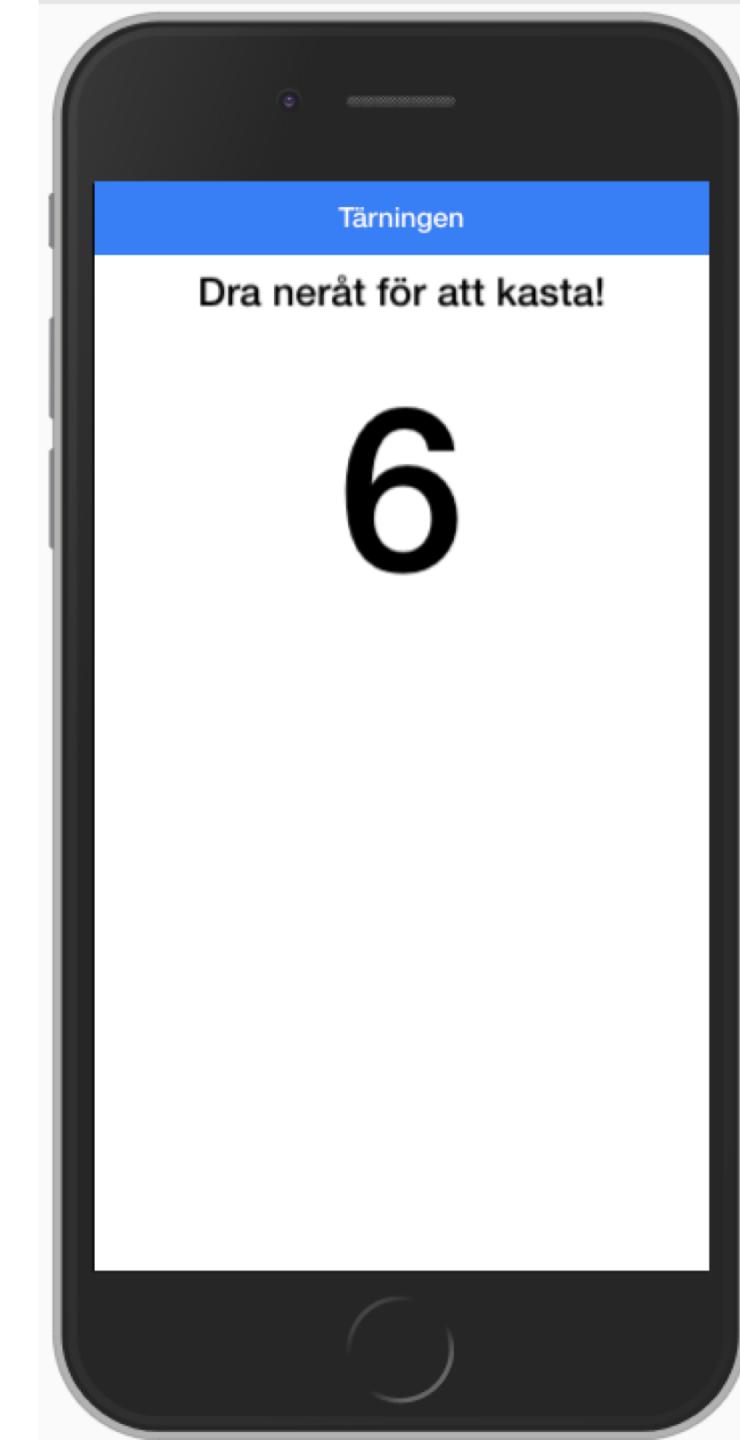
# ION-REFRESHER

```
<ion-content class="padding" style="text-align:center"  
    ng-controller="DiceController">  
  
<h3>Dra neråt för att kasta!</h3>  
  
<ion-refresher pulling-text="Pull to refresh..."  
    on-refresh="doRefresh()">  
  
</ion-refresher>  
  
<h1 style="font-size:10em;">{{rand}}</h1>  
  
</ion-content>
```



# ION-REFRESHER – CONTROLLER

```
.controller('DiceController', function($scope, $http) {  
  $scope.doRefresh = function() {  
    $scope.rand = Math.floor(Math.random() * 6) + 1;  
    $scope.$broadcast('scroll.refreshComplete');  
  };  
});
```



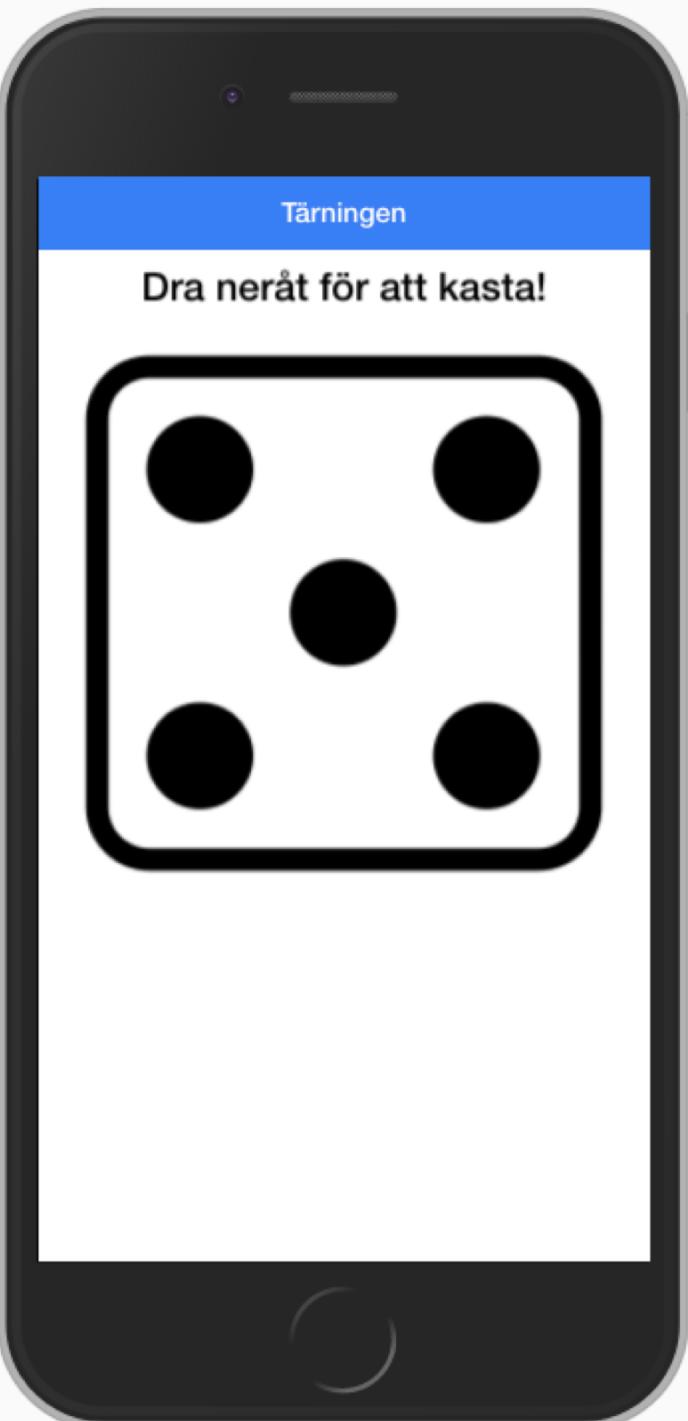
# ÖVNING

Utveckla föregående app.

Visa bilder istället för siffror.

Ladda ner bilder från:

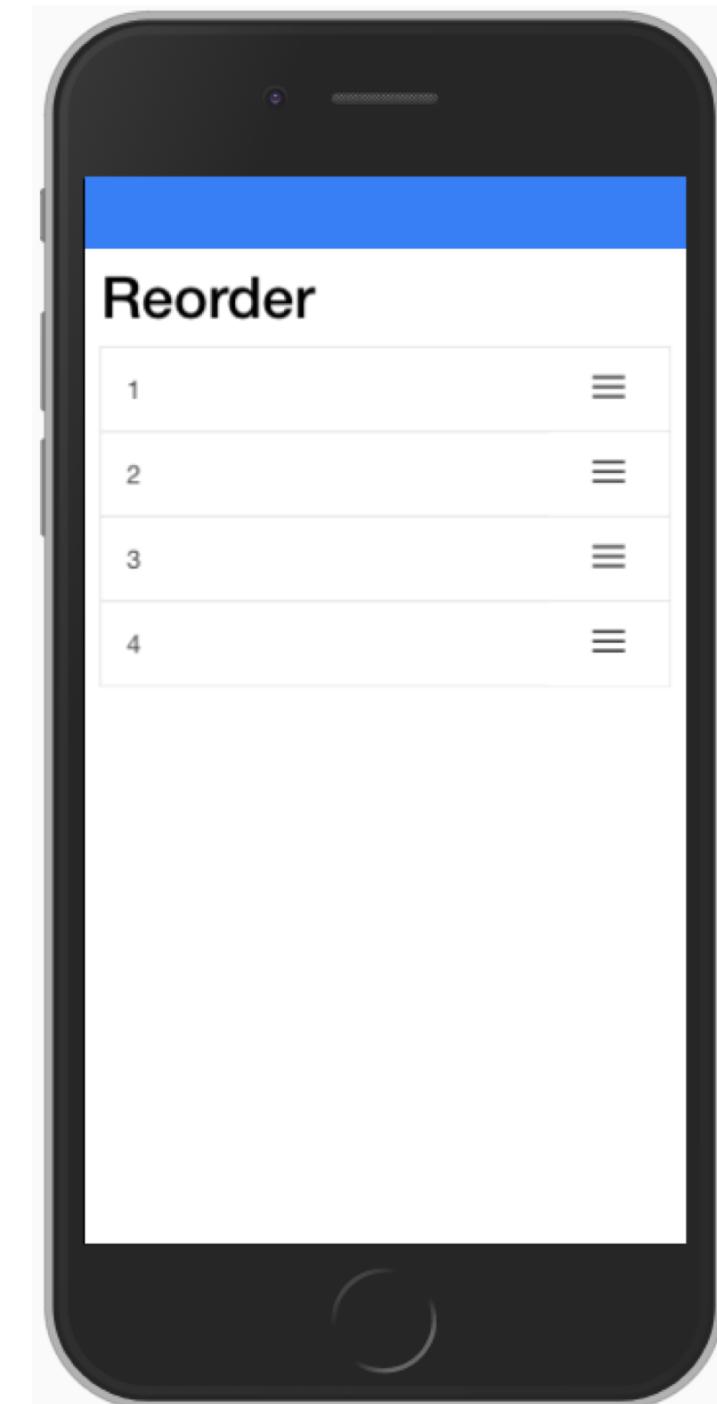
<http://game-icons.net/tags/dice.html>



# ION-REORDER-BUTTON

```
<ion-content class="padding">
  <h1>Reorder</h1>
  <ion-list ng-controller="ReorderController"
            show-reorder="true">
    <ion-item ng-repeat="item in items">
      {{item}}
      <ion-reorder-button class="ion-navicon"
                           on-reorder="moveItem(item, $fromIndex, $toIndex)">
        </ion-reorder-button>
    </ion-item>
  </ion-list>
</ion-content>
```

<https://ionicframework.com/docs/v1/api/directive/ionReorderButton/>



# ION-REORDER – CONTROLLER

```
.controller('ReorderController', function ($scope) {  
  $scope.items = [1, 2, 3, 4];  
  $scope.moveItem = function(item, fromIndex, toIndex) {  
    // Move the item in the array  
    $scope.items.splice(fromIndex, 1);  
    $scope.items.splice(toIndex, 0, item);  
  }  
})
```

Tips: [https://www.w3schools.com/jsref/jsref\\_splice.asp](https://www.w3schools.com/jsref/jsref_splice.asp)

# COLLECTION-REPEAT

Visar enbart ett antal element som täcker skärmen.  
Flera element visas dynamiskt vid rullning.  
Snabbare än ng-repeat.

```
<ion-content>  
<div ng-controller="CollectionCtrl">  


<ion-pane>

  <ion-header-bar class="bar-dark">
    <h2 class="title">Artist List</h2>
  </ion-header-bar>

</ion-pane>

</body>
```



# SKAPA EN MALL TILL LISTAN

```
<ion-content class="has-subheader">  
  
  <ion-list>  
  
    <ion-item class="item-thumbnail-left item-text-wrap">  
        
      <h2>Name</h2>  
      <h3>Reknown</h3>  
      <p>Lorem ipsum dolor sit amet... </p>  
    </ion-item>  
  
  </ion-list>  
  
</ion-content>
```

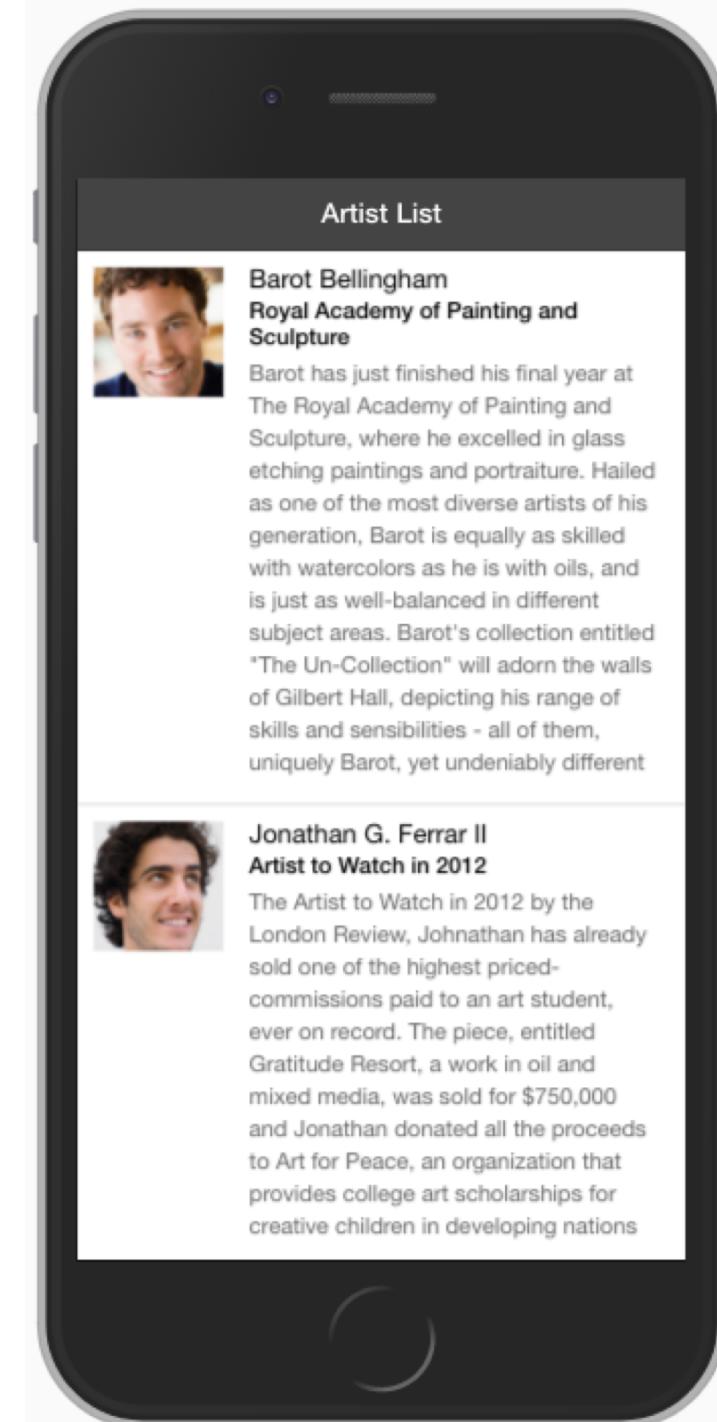


# SKAPA EN CONTROLLER (FILEN app.js)

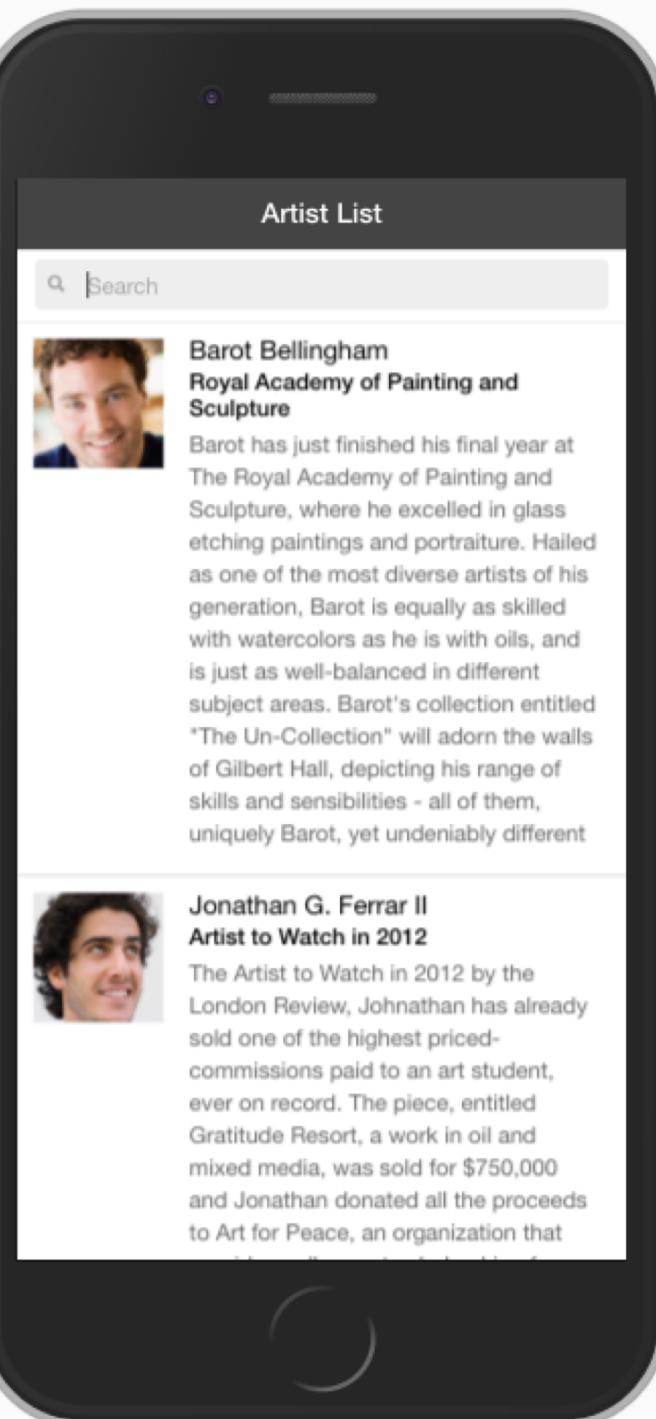
```
.controller('ListController', function($scope, $http) {  
    $http.get('js/data.json')  
        .success(function(data) {  
            $scope.artists = data;  
        });  
});
```

# KOPPLA LISTAN TILL CONTROLLER

```
<ion-list ng-controller="ListController">  
  <ion-item ng-repeat='item in artists'  
    class="item-thumbnail-left item-text-wrap">  
      
    <h2>{{item.name}}</h2>  
    <h3>{{item.reknown}}</h3>  
    <p>{{item.bio}}</p>  
  </ion-item>  
</ion-list>
```



# Lägg till ett sökfält



```
<div class="bar bar-subheader item-input-inset bar-light">  
  <label class="item-input-wrapper">  
    <i class="icon ion-search placeholder-icon"></i>  
    <input type="search" placeholder="Search">  
  </label>  
</div>  
<ion-content class="has-subheader">
```

# KOPPLA SÖKFÄLTET TILL LISTAN

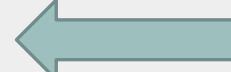
## Artist List

Jen  



Jennifer Jerome  
New Orleans, LA  
A native of New Orleans, much  
of Jennifer's work h...

## Artist List

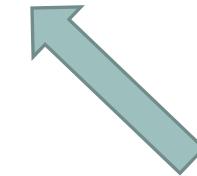
Jon  



Jonathan G. Ferrar II  
Artist to Watch in 2012  
The Artist to Watch in 2012 by  
the London Review, ...

# KOPPLA SÖKFÄLTET TILL LISTAN

```
<input type="search" placeholder="Search" ng-model="search">  
...  
<ion-item ng-repeat='item in artists | filter:search'  
class="item-thumbnail-left item-text-wrap">
```



# ÖVNING 1

## SORTERA OM LISTAN

Lägg till ion-reorder-button till listan.

Artist List ≡

Search



Barot Bellingham  
Royal Academy of Painting and Sculpture  
Barot has just finished



Barot Bellingham  
Royal Academy of Painting and Sculptur  
Barot has just finished final year at The Roya..

[Review, ...](#)



Hillary Hewitt  
Goldwynn-Post  
New York University  
Hillary is a sophomore sculpture student at N..



Hassum Harrod  
Art College in New De  
The Art College in New Dehli has sponsored Hassum ...

A green arrow points from the text "Lägg till ion-reorder-button till listan." to the "Review, ..." button in the middle item of the list.

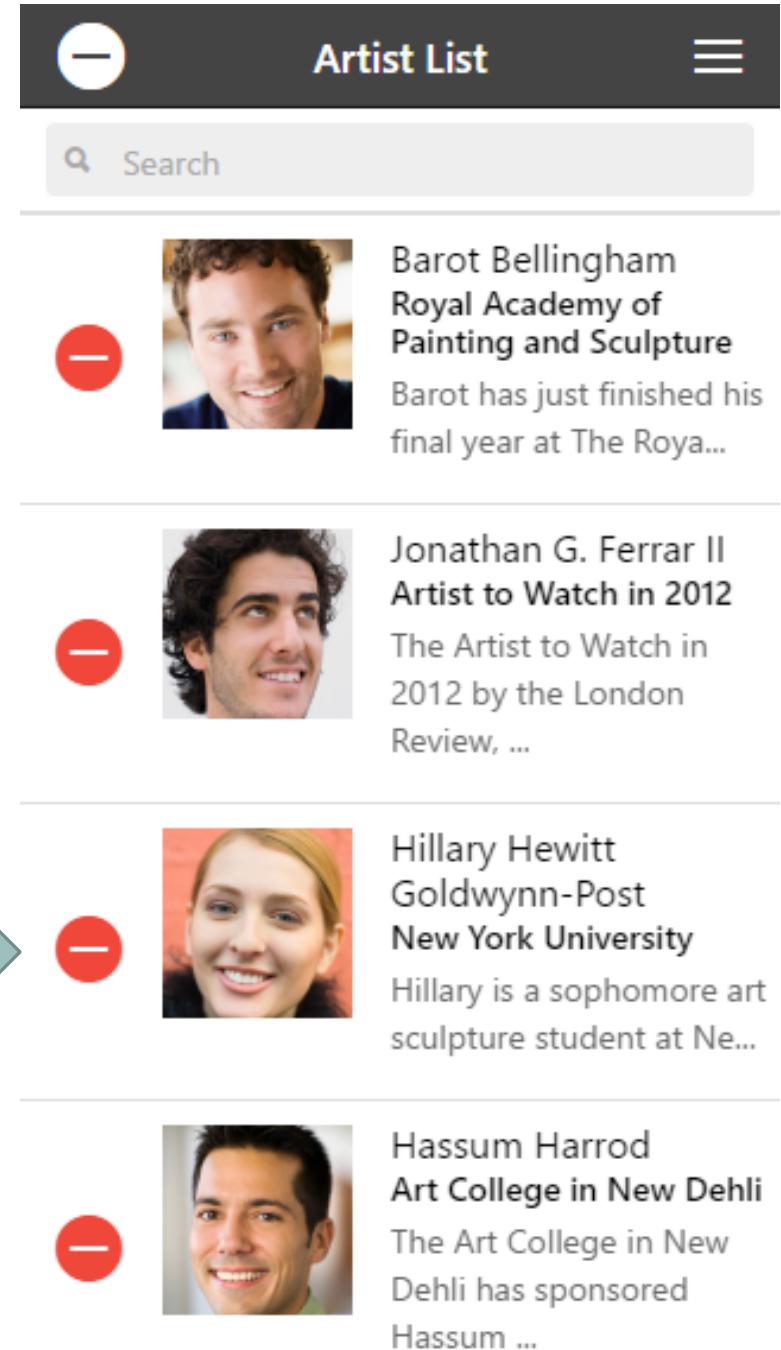
# ÖVNING 2

## LÄGG TILL "ION-DELETE-BUTTON"

Tips

Läs dokumentationen

<http://ionicframework.com/docs/api/directive/ionList/>



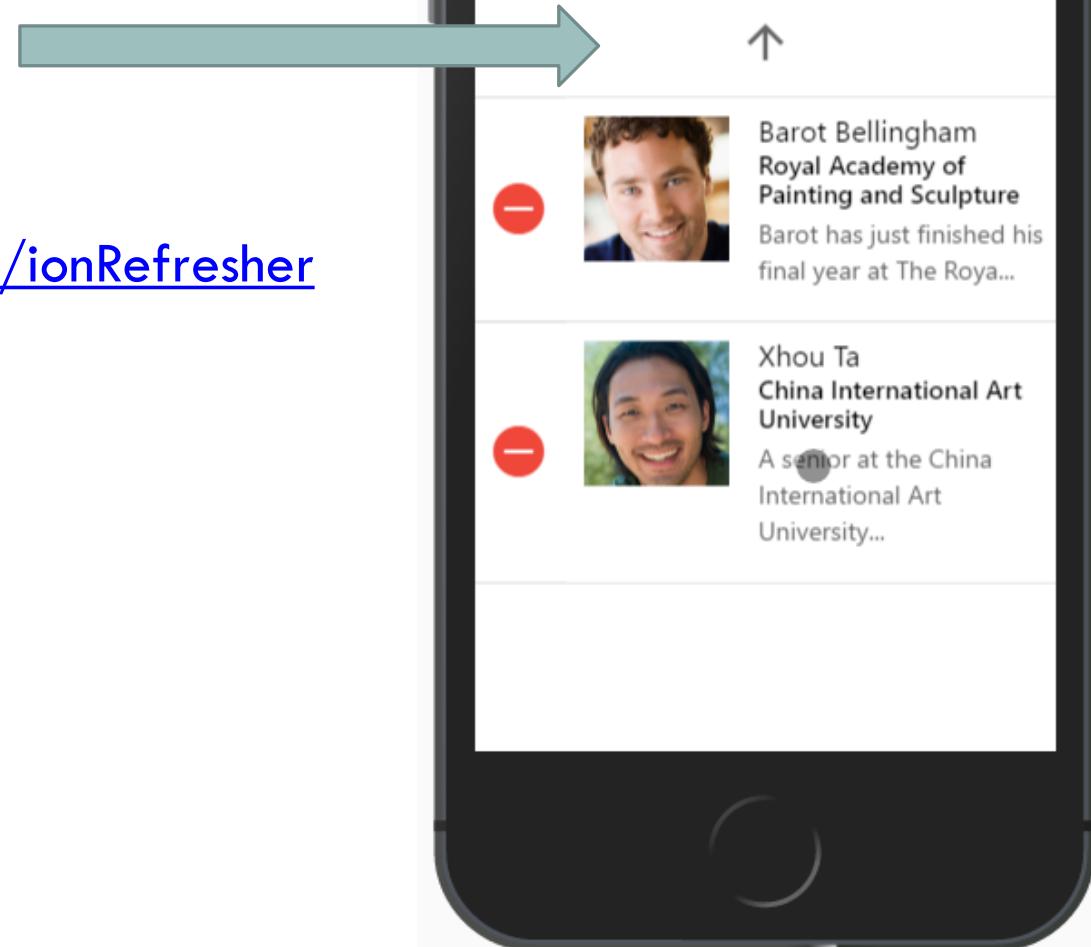
A screenshot of an Ionic mobile application titled "Artist List". The top navigation bar includes a back button, the title "Artist List", and a menu icon. Below the header is a search bar with a magnifying glass icon and the placeholder "Search". The main content area displays a list of four artist profiles, each consisting of a small circular "Delete" button with a minus sign, a profile picture, the artist's name, their affiliation, and a brief bio. The profiles are separated by horizontal lines.

| Artist Name           | Affiliation                             | Bio   |
|-----------------------|---|---|
| Barot Bellingham      | Royal Academy of Painting and Sculpture | Barot has just finished his final year at The Roya... |
| Jonathan G. Ferrar II | Artist to Watch in 2012                 | The Artist to Watch in 2012 by the London Review, ... |
| Hillary Hewitt        | Goldwynn-Post<br>New York University    | Hillary is a sophomore art sculpture student at Ne... |
| Hassum Harrod         | Art College in New Dehli                | The Art College in New Dehli has sponsored Hassum ... |

# ÖVNING 3

Lägg till en ”Pull-to-refresh”

Tips: <http://ionicframework.com/docs/api/directive/ionRefresher>



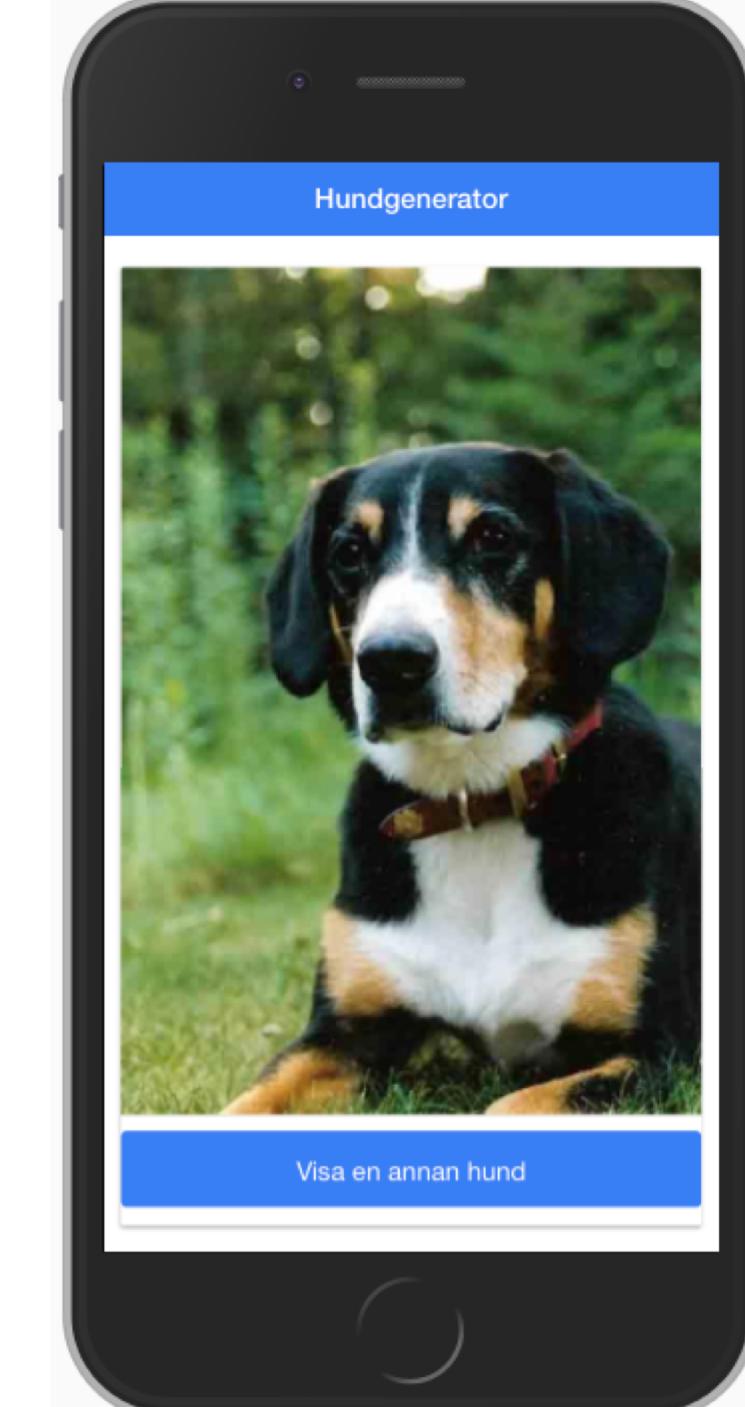
# ÖVNING 4 – JSONPlaceholder

1. Skapa en ny ionic-app som heter UsersApp.
2. Hämta en JSON-lista över ett antal användare från  
<https://jsonplaceholder.typicode.com/>  
Tips: Direkt länk till listan  
<https://jsonplaceholder.typicode.com/users>
3. Visa en lista över alla användare.  
Visa namn, e-post och adress (valfri formatering).
4. Lägg till ett sökfält ovanför listan.
5. Skapa två flikar. Flytta listan till den första fliken och visa dina kontaktuppgifter i den andra fliken.

# ÖVNING 5 – DOG API

1. Skapa en ionic-app som visar en slumpmässig hund från Dog API <https://dog.ceo/dog-api/>
2. Använd en endpoint som visar en slumpmässig bild. Direktlänk här <https://dog.ceo/api/breeds/image/random>
3. Skapa en knapp under bilden som, vid klickning, visar en annan bild.
4. Lägg till en ion-refresher  
<https://ionicframework.com/docs/v1/api/directive/ionRefresher/>

Tips! Använd ett kort (Card) för enklare placering av bilden  
<https://ionicframework.com/docs/v1/components/#cards>



TIPS: [HTTPS://WWW.TUTORIALSPPOINT.COM/IONIC/IONIC TUTORIAL.PDF](https://www.tutorialspoint.com/ionic/ionic_tutorial.pdf)

