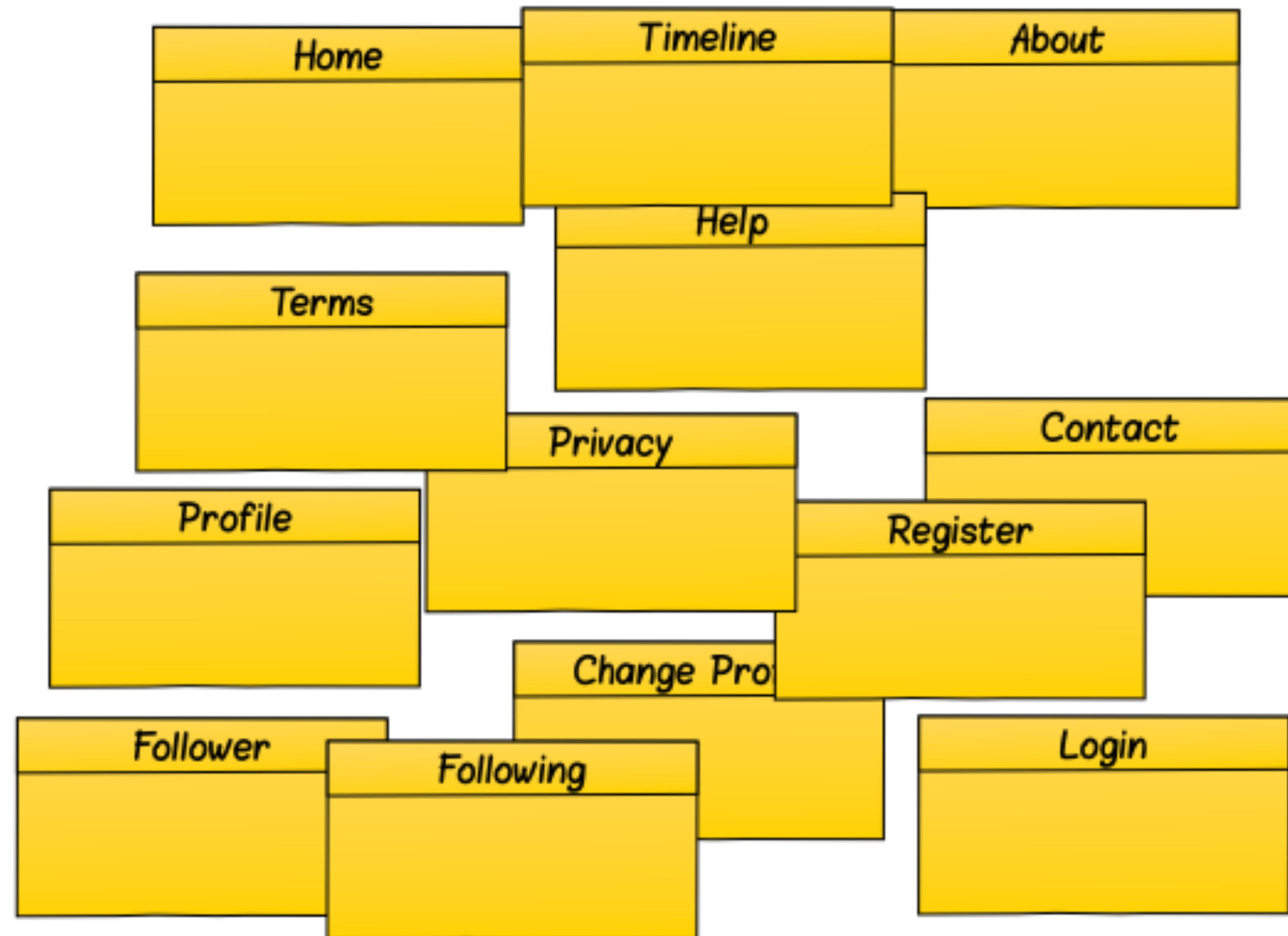# UI-ROUTER

"states" are the new "pages"

NOT SINGLE PAGE APPLICATION

Server

Server

GET /

Server

index.html

GET /

Server

index.html

GET /

User clicks on link . . .

Server

GET /settings

Server

settings.html

GET /settings

NOT SINGLE PAGE APPLICATIONS

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◉ **Views stored on the server, served up as HTML pages.**

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NOT SINGLE PAGE APPLICATIONS

◎ **Views stored on the server, served up as HTML pages.**

◎ **When user goes to a new page, the browser navigates in totality, navigating, refreshing and retrieving a brand new HTML.**

◎ **Each page, since it is a new page, retrieves stylesheets, script files, etc.**

SINGLE PAGE APPLICATION (SPA)

Server

Server

index.html

GET /

Server

index.html

GET /

User clicks on link . . .

Server

Instantiate settings state

Server

{
 "billingInfo": {},
 "notifyMe": true
}

GET /user/1/settings

Instantiate settings state

SINGLE PAGE APPLICATIONS

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◉ **On page change, a new page is not loaded. The front-end application replaces elements on existing DOM to update view.**

SINGLE PAGE APPLICATIONS

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SINGLE PAGE APPLICATIONS

◎ **On page change, a new page is not loaded. The front-end application replaces elements on existing DOM to update view.**

◎ **AJAX plays a big part to fill in data that would normally be served up by the server (think swig).**

◎ **Browser** History **API allows for control of URL and back/ forward button, even though pages are not visited.**

WHAT IS UI-ROUTER?

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◉ **Ties into URL and history to allow for easy navigation to and between different parts of your application.**

WHAT IS UI-ROUTER?

◎ **An Angular-specific tool for management of different views in a single page application.**

◎ **Ties into URL and history to allow for easy navigation to and between different parts of your application.**

◎ **Easily integrates nesting of views.**

STATE = URL + VIEW + CONTROLLER

GETTING STARTED

GETTING STARTED

1.
```
# in project root
npm install --save angular-ui-router
```

GETTING STARTED

1.
```
# in project root
npm install --save angular-ui-router
```

2.
```html
<!-- in index.html -->
...
<script src="/route/for/angular-ui-router.js"></script>
...
```

GETTING STARTED

1.
```
# in project root
npm install --save angular-ui-router
```

2.
```html
<!-- in index.html -->
...
<script src="/route/for/angular-ui-router.js"></script>
...
```

3.
```javascript
// in main app script
var theApp = angular.module('kittens', ['ui.router']);
```

CONFIGURING A STATE

```javascript
// main app script
theApp.config(function ($stateProvider) {
  // registers a 'home' state for the url '/'
  $stateProvider.state('home', {
    url: '/',
    template: '<p>Best landing page ever</p>'
  });
});
```

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```html
<!-- index.html -->
<html>
  <head>...</head>
  <body>
    <div>I am common to all state views</div>
    <ui-view></ui-view>
  </body>
</html>
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CONFIGURING A STATE

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// main app script
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<!-- index.html -->
<html>
  <head>...</head>
  <body>
    <div>I am common to all state views</div>
    <ui-view></ui-view>
  </body>
</html>
```

when a user visits the '/' route, view loads as…

```
<html>
  <head>...</head>
  <body>
    <div>I am common to all state views</div>
    <ui-view>
      <p>Best landing page ever</p>
    </ui-view>
  </body>
</html>
```

TWO STATES

```
theApp.config(function ($stateProvider) {
  $stateProvider.state('home', {
    url: '/',
    template: '<p>Best landing page ever</p>'
  });
});


theApp.config(function ($stateProvider) {
  $stateProvider.state('contact', {
    url: '/about',
    template: '<p>Just shout really loudly</p>'
  });
});
```

TWO STATES

```javascript
theApp.config(function ($stateProvider) {
  $stateProvider.state('home', {
    url: '/',
    template: '<p>Best landing page ever</p>'
  });
});


theApp.config(function ($stateProvider) {
  $stateProvider.state('contact', {
    url: '/about',
    template: '<p>Just shout really loudly</p>'
  });
});
```

```html
<!-- index.html -->
...
<div>
  <p>I am common to all state views</p>
  <div>
    <!-- ui-sref allows us to link to another state -->
    <a ui-sref="home"></a>
    <a ui-sref="contact"></a>
  </div>
</div>
<ui-view></ui-view>
...
```

TWO STATES

```javascript
theApp.config(function ($stateProvider) {
  $stateProvider.state('home', {
    url: '/',
    template: '<p>Best landing page ever</p>'
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    url: '/about',
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  });
});
```

```html
<!-- index.html -->
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<div>
  <p>I am common to all state views</p>
  <div>
    <!-- ui-sref allows us to link to another state -->
    <a ui-sref="home"></a>
    <a ui-sref="contact"></a>
  </div>
</div>
<ui-view></ui-view>
...
```

user clicks first link

```html
...
<ui-view>
  <p>Best landing page ever</p>
</ui-view>
...
```

user clicks second link

```html
...
<ui-view>
  <p>Just shout really loudly</p>
</ui-view>
...
```

STATE CONTROLLER

```javascript
theApp.config(function ($stateProvider) {
  $stateProvider.state('contact', {
    url: '/about',
    template: '<p>Just shout {{ adjective }} loudly</p>',
    controller: function ($scope) {
      $scope.adjective = 'really';
    }
  });
});
```

DYNAMIC STATE TRANSITION

```javascript
theApp.config(function ($stateProvider) {
  $stateProvider.state('contact', {
    url: '/about',
    template: '<p>Just shout really loudly</p>',
    controller: function ($state) {
      setTimeout(function () {
        // $state.go allows us to trigger state change from javascript
        $state.go('home');
      }, 3000);
    }
  });
});
```

TEMPLATE URL

```javascript
theApp.config(function ($stateProvider) {
  $stateProvider.state('gallery', {
    url: '/kittens',
    template: '<div ng-repeat="kitten in kittens"><p>{{ kitten.name }}</p></div>',
    controller: function ($scope, KittenFactory) {
      KittenFactory.fetchAll(function (kittens) {
        $scope.kittens = kittens;
      });
    }
  });
});
```
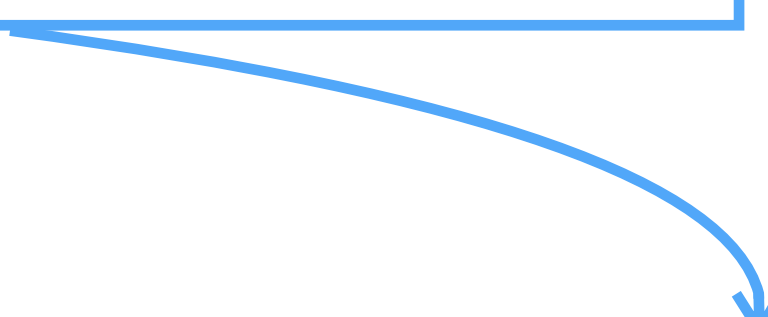
TEMPLATE URL

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      KittenFactory.fetchAll(function (kittens) {
        $scope.kittens = kittens;
      });
    }
  });
});
```

```html
<!-- kitten-gallery.html -->
<div ng-repeat="kitten in kittens">
  <p>{{ kitten.name }}</p>
</div>
```

TEMPLATE URL

```javascript
theApp.config(function ($stateProvider) {
  $stateProvider.state('gallery', {
    url: '/kittens',
    template: '<div ng-repeat="kitten in kittens"><p>{{ kitten.name }}</p></div>',
    controller: function ($scope, KittenFactory) {
      KittenFactory.fetchAll(function (kittens) {
        $scope.kittens = kittens;
      });
    }
  });
});
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```html
<!-- kitten-gallery.html -->
<div ng-repeat="kitten in kittens">
  <p>{{ kitten.name }}</p>
</div>
```

```javascript
theApp.config(function ($stateProvider) {
  $stateProvider.state('gallery', {
    url: '/kittens',
    templateUrl: '/route/for/kitten-gallery.html',
    controller: function ($scope, KittenFactory) {
      KittenFactory.fetchAll(function (kittens) {
        $scope.kittens = kittens;
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        controller: function ($scope, KittenFactory) {
            KittenFactory.fetchAll(function (kittens) {
                $scope.kittens = kittens;
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        }
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        controller: function ($scope, KittenFactory) {
            KittenFactory.fetchAll(function (kittens) {
                $scope.kittens = kittens;
            });
        }
    });
});
```

PARAMETERIZED STATES

register state

```javascript
theApp.config(function ($stateProvider) {
    $stateProvider.state('detail', {
        // specifying a state parameter 'kittenId'
        url: '/kittens/:kittenId',
        template: '<img ng-src="kitten.photoURL">',
        controller: function ($scope, KittenFactory, $stateParams) {
            var theId = $stateParams.kittenId;
            KittenFactory.fetchById(theId, function (theKitten) {
                $scope.kitten = theKitten;
            });
        }
    });
});
```

FULLSTACK

PARAMETERIZED STATES

register state

```javascript
theApp.config(function ($stateProvider) {
  $stateProvider.state('detail', {
    // specifying a state parameter 'kittenId'
    url: '/kittens/:kittenId',
    template: '<img ng-src="kitten.photoURL">',
    controller: function ($scope, KittenFactory, $stateParams) {
      var theId = $stateParams.kittenId;
      KittenFactory.fetchById(theId, function (theKitten) {
        $scope.kitten = theKitten;
      });
    }
  });
});
```

create link to state in html

```html
<a ui-sref="detail({kittenId: someKitten.id})"></a>
```

PARAMETERIZED STATES

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```javascript
theApp.config(function ($stateProvider) {
    $stateProvider.state('detail', {
        // specifying a state parameter 'kittenId'
        url: '/kittens/:kittenId',
        template: '<img ng-src="kitten.photoURL">',
        controller: function ($scope, KittenFactory, $stateParams) {
            var theId = $stateParams.kittenId;
            KittenFactory.fetchById(theId, function (theKitten) {
                $scope.kitten = theKitten;
            });
        }
    });
});
```

create link to state in html

```html
<a ui-sref="detail({kittenId: someKitten.id})"></a>
```

transition to state in javascript

```javascript
$state.go('detail', {kittenId: someKitten.id});
```

"PROBLEM"

```html
<html>
  <head>...</head>
  <body>
    <div>I am common to all state views</div>
    <ui-view>
      <div ng-repeat="kitten in kittens">
        <p>
          <a ui-sref="detail({kittenId: kitten.id})">
            {{ kitten.name }}
          </a>
        </p>
      </div>
    </ui-view>
  </body>
</html>
```

"PROBLEM"

|

```html
<html>
  <head>...</head>
  <body>
    <div>I am common to all state views</div>
    <ui-view>
      <div ng-repeat="kitten in kittens">
        <p>
          <a ui-sref="detail({kittenId: kitten.id})">
            {{ kitten.name }}
          </a>
        </p>
      </div>
    </ui-view>
  </body>
</html>
```

```javascript
theApp.config(function ($stateProvider) {
    $stateProvider.state('detail', {
        url: '/kittens/:kittenId',
        template: '<img ng-src="kitten.photoURL">',
        controller: function ($scope, KittenFactory, $stateParams) {
            var theId = $stateParams.kittenId;
            KittenFactory.fetchById(theId, function (theKitten) {
                $scope.kitten = theKitten;
            });
        }
    });
});
```

"PROBLEM"

```html
<html>
  <head>...</head>
  <body>
    <div>I am common to all state views</div>
    <ui-view>
      <div ng-repeat="kitten in kittens">
        <p>
          <a ui-sref="detail({kittenId: kitten.id})">
            {{ kitten.name }}
          </a>
        </p>
      </div>
    </ui-view>
  </body>
</html>
```

```html
<html>
  <head>...</head>
  <body>
    <div>I am common to all state views</div>
    <ui-view>
      <img ng-src="kitten.photoURL">
    </ui-view>
  </body>
</html>
```

"PROBLEM"

```html
<html>
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        </p>
      </div>
    </ui-view>
  </body>
</html>
```

```html
<html>
  <head>...</head>
  <body>
    <div>I am common to all state views</div>
    <ui-view>
      <img ng-src="kitten.photoURL">
    </ui-view>
  </body>
</html>
```

Kitten list gets replaced by single image…

"PROBLEM"

```
<html>
  <head>...</head>
  <body>
    <div>I am common to all state views</div>
    <ui-view>
      <div ng-repeat="kitten in kittens">
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          <a ui-sref="detail({kittenId: kitten.id})">
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          </a>
        </p>
      </div>
    </ui-view>
  </body>
</html>
```

```
<html>
  <head>...</head>
  <body>
    <div>I am common to all state views</div>
    <ui-view>
      <img ng-src="kitten.photoURL">
    </ui-view>
  </body>
</html>
```

Kitten list gets replaced by single image…

Instead how could we show the image off to the right?

CHILD STATES

```
...
<ui-view>
  <div ng-repeat="kitten in kittens">
    <p>
      <a ui-sref="detail({kittenId: kitten.id})">
        {{ kitten.name }}
      </a>
    </p>
  </div>
</ui-view>
...
```

CHILD STATES

```html
...
<ui-view>
  <div ng-repeat="kitten in kittens">
    <p>
      <a ui-sref="detail({kittenId: kitten.id})">
        {{ kitten.name }}
      </a>
    </p>
  </div>
  <div style="position:fixed; right:0;">
    <ui-view></ui-view>
  </div>
</ui-view>
...
```

CHILD STATES

```
...
<ui-view>
  <div ng-repeat="kitten in kittens">
    <p>
      <a ui-sref="detail({kittenId: kitten.id})">
        {{ kitten.name }}
      </a>
    </p>
  </div>
  <div style="position:fixed; right:0;">
    <ui-view></ui-view>      ←  ¡nested ui view!
  </div>
</ui-view>
...
```

CHILD STATES

```javascript
theApp.config(function ($stateProvider) {
  $stateProvider.state('gallery', {...});
});



theApp.config(function ($stateProvider) {
  $stateProvider.state('detail', {...}});
});
```

CHILD STATES

```
theApp.config(function ($stateProvider) {
  $stateProvider.state('gallery', {...});
});


theApp.config(function ($stateProvider) {
  $stateProvider.state('gallery.detail', {...}});
});
```

CHILD STATES

```
theApp.config(function ($stateProvider) {
  $stateProvider.state('gallery', {...});
});
```

now detail is a child state of gallery

```
theApp.config(function ($stateProvider) {
  $stateProvider.state('gallery.detail', {...}});
});
```

"SOLUTION"

```
...
<ui-view>
  <div ng-repeat="kitten in kittens">
    <p>
      <a ui-sref="gallery.detail({kittenId: kitten.id})">
        {{ kitten.name }}
      </a>
    </p>
  </div>
  <div style="position:fixed; right:0;">
    <ui-view></ui-view>
  </div>
</ui-view>
...
```

"SOLUTION"

```
...
<ui-view>
  <div ng-repeat="kitten in kittens">
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    <ui-view></ui-view>
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</ui-view>
...
```

```
theApp.config(function ($stateProvider) {
    $stateProvider.state('gallery.detail', {
        url: '/:kittenId',
        template: '<img ng-src="kitten.photoURL">',
        controller: function ($scope, KittenFactory, $stateParams) {
            var theId = $stateParams.kittenId;
            KittenFactory.fetchById(theId, function (theKitten) {
                $scope.kitten = theKitten;
            });
        }
    });
});
```

"SOLUTION"

| currently at /kittens route | when user clicks on a kitten |

```
...
<ui-view>
  <div ng-repeat="kitten in kittens">
    <p>
     <a ui-sref="gallery.detail({kittenId: kitten.id})">
       {{ kitten.name }}
     </a>
    </p>
  </div>
  <div style="position:fixed; right:0;">
    <ui-view></ui-view>
  </div>
</ui-view>
...
```

```
...
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  <div ng-repeat="kitten in kittens">
    <p>
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     </a>
    </p>
  </div>
  <div style="position:fixed; right:0;">
    <ui-view>
      <img ng-src="kitten.photoURL">
    </ui-view>
  </div>
</ui-view>
...
```

"SOLUTION"

currently at /kittens route	when user clicks on a kitten

```
...
<ui-view>
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    <ui-view></ui-view>
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...
```

```
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<ui-view>
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...
```

STATES

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◉ **state = URL + view + controller**

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◉ **states must be registered during in app.config**

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◉ **state views "fill" the ui-view directive**

STATES

- state = URL + view + controller

- states must be registered during in app.config

- state views "fill" the ui-view directive

- ui-sref is a directive that creates links from states

STATES

◎ **state = URL + view + controller**

◎ **states must be registered during in app.config**

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◎ **ui-sref is a directive that creates links from states**

◎ **$state.go is a method that can trigger transition to a state**

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- state = URL + view + controller
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STATES

◉ **state = URL + view + controller**

◉ **states must be registered during in app.config**

◉ **state views "fill" the ui-view directive**

◉ **ui-sref is a directive that creates links from states**

◉ **$state.go is a method that can trigger transition to a state**

◉ **states can be parameterized**

◉ **child states "nest" into parent's ui-view directive**

STATES

- state = URL + view + controller
- states must be registered during in app.config
- state views "fill" the ui-view directive
- ui-sref is a directive that creates links from states
- $state.go is a method that can trigger transition to a state
- states can be parameterized
- child states "nest" into parent's ui-view directive
- all of this is FRONTEND ONLY

ANGULAR SUMMARY

FULLSTACK

views and controllers interact via the $scope

| Views | $scope | Controllers |