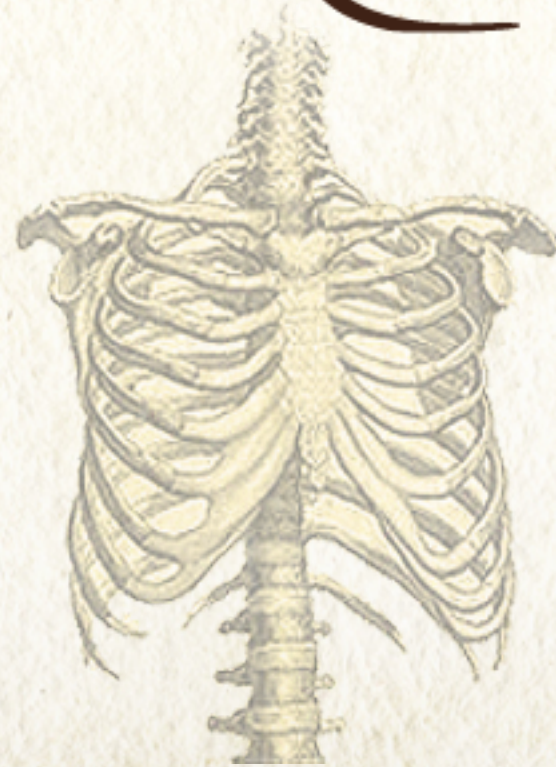


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THE ANATOMY OF

Backbone.js



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Introduction

- LEVEL 1 -



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fringit. Sed sed orci. Nullam

Introducing the Todo App

To get the todo data

```
$.getJSON('/todo', function(data) {
```

The data returned

```
{ description: 'Pick up milk', status: 'incomplete', id: 1 }
```

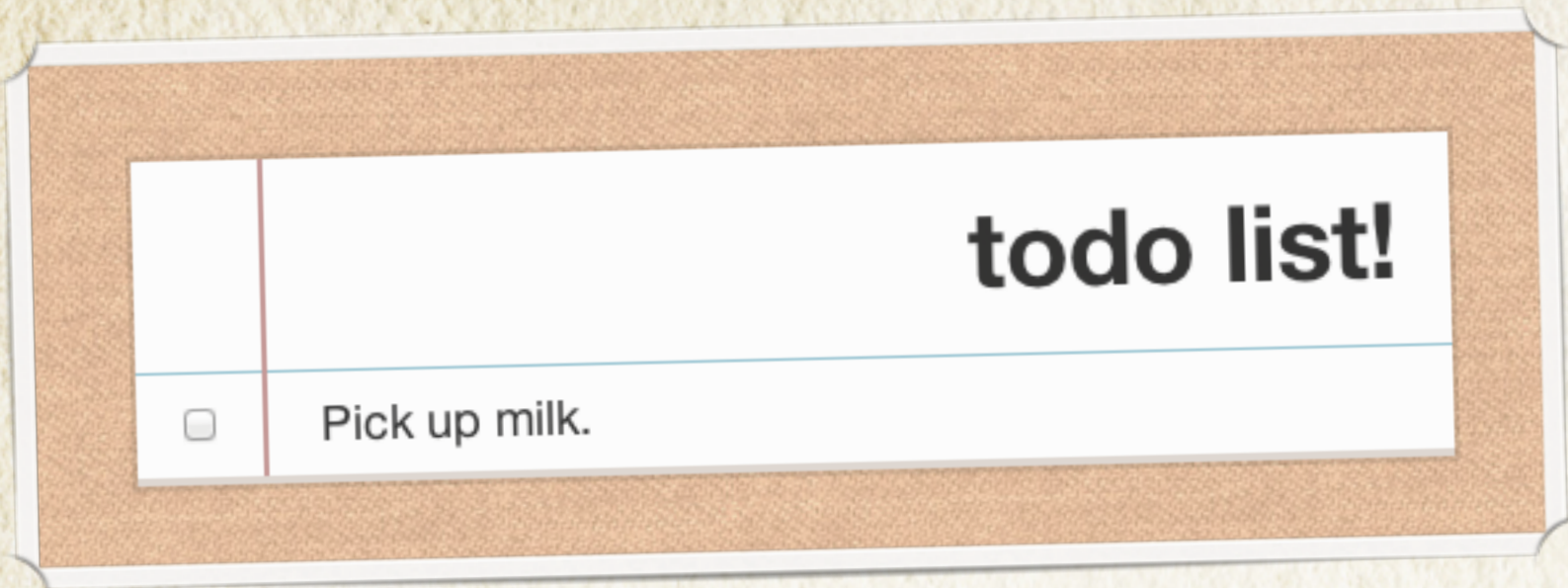


todo list!



Pick up milk.

Adding functionality



Checking off a todo item

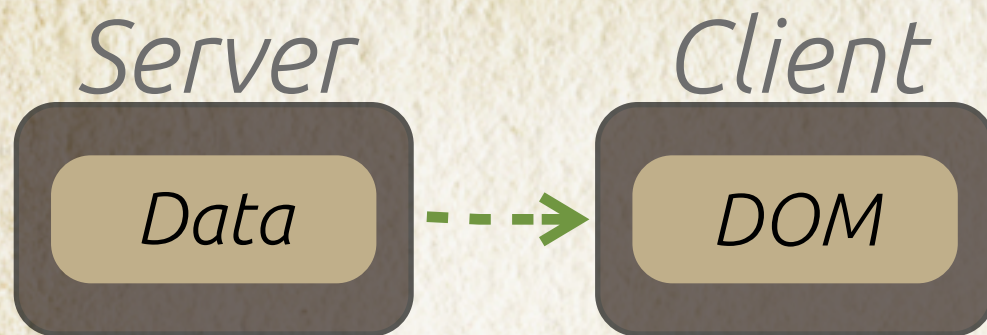
Add deadlines

Reorder & sort



Methods can be disorganized
We lose the data structure

Without Backbone.js



```
{ description: 'Pick up milk', status: 'incomplete', id: 1 }
```

```
<h3 class='incomplete'>  
<input type='checkbox' data-id='1' />  
Pick up milk  
</h3>
```

✘ We need an object to maintain the data

Introducing Backbone.js



"Get your truth out of the DOM"

- Jeremy Ashkenas

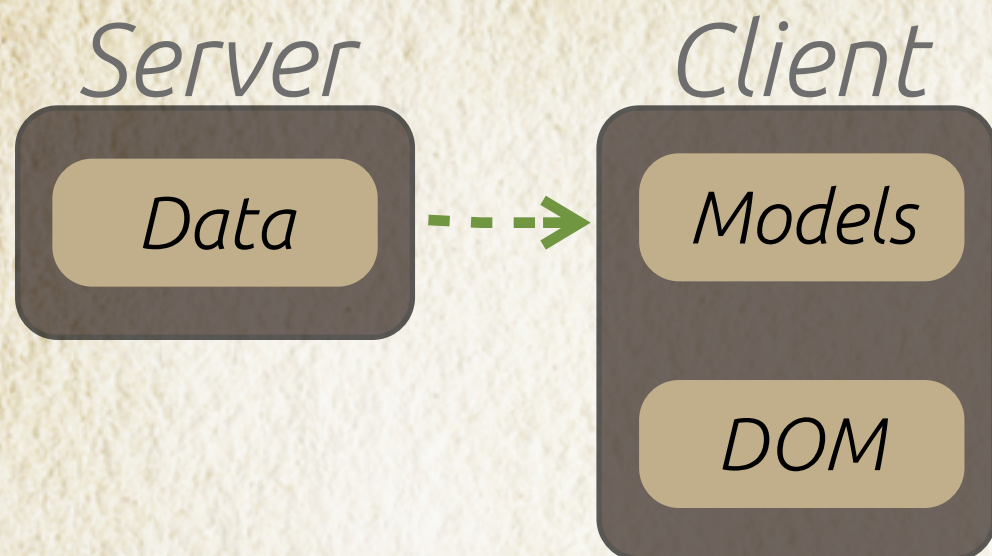
Provides client-side app structure

Models to represent data

Views to hook up models to the DOM

Synchronizes data to/from server

With Backbone.js



To create a model class

```
var TodoItem = Backbone.Model.extend({});
```

To create a model instance

```
var todoItem = new TodoItem(  
  { description: 'Pick up milk', status: 'incomplete', id: 1 }  
);
```


Backbone Models

Models

```
var todoItem = new TodoItem(  
  { description: 'Pick up milk', status: 'incomplete', id: 1 }  
);
```

To get an attribute

```
todoItem.get('description');
```

--> 'Pick up milk'

To set an attribute

```
todoItem.set({status: 'complete'});
```

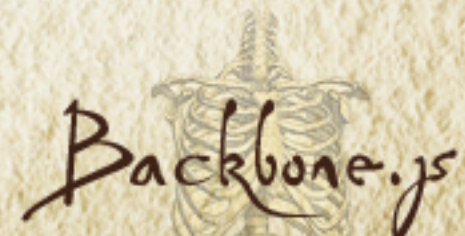
Sync to the server

```
todoItem.save();
```



Configuration needed

Introduction



Displaying the Data



To create a view class

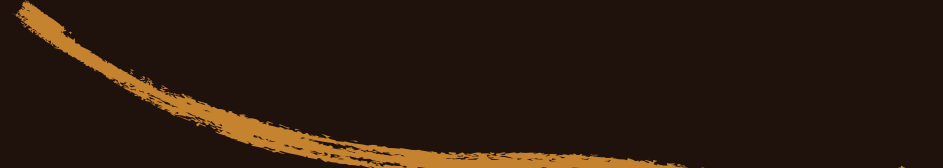
```
var TodoView = Backbone.View.extend({});
```

To create a view instance

```
var todoView = new TodoView({ model: todoItem });
```


Rendering the View

```
var TodoView = Backbone.View.extend({
  render: function() {
    var html = '<h3>' + this.model.get('description') + '</h3>';
    $(this.el).html(html);
  }
});
```



Every view has a top level **E**LEMENT

<div>

<p>

<header>

<section>

...

default

Rendering the View

```
var TodoView = Backbone.View.extend({
  render: function() {
    var html = '<h3>' + this.model.get('description') + '</h3>';
    $(this.el).html(html);
  }
});
```

```
var todoView = new TodoView({ model: todoItem });
todoView.render();
console.log(todoView.el);
```

```
<div>
  <h3>Pick up milk</h3>
</div>
```


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Models

- LEVEL 2 -



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Reviewing Models

Generating a model class

```
var TodoItem = Backbone.Model.extend({});
```

Generating a model instance

```
var todoItem = new TodoItem(  
  { description: 'Pick up milk', status: 'incomplete' }  
);
```

To get an attribute

```
todoItem.get('description');
```

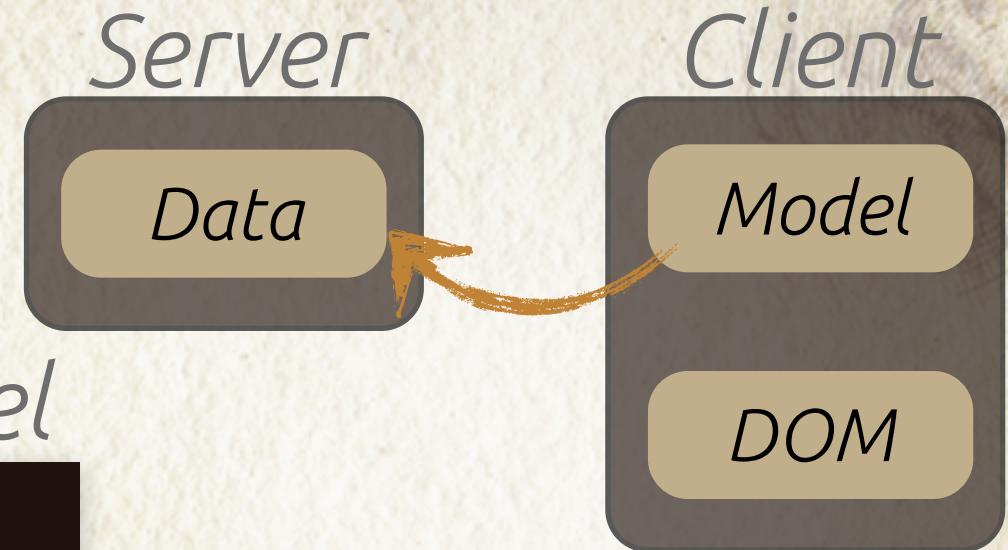
---> 'Pick up milk'

To set an attribute

```
todoItem.set({status: 'complete'});
```


fetching Data from the Server

```
var todoItem = new TodoItem();
```



URL to get JSON data for model

```
todoItem.url = '/todo';
```

To populate model from server

```
todoItem.fetch();
```

```
--> { id: 1, description: 'Pick up milk', status: 'incomplete' }
```

```
todoItem.get('description');
```

```
--> 'Pick up milk'
```

! /todo isn't a good URL

fetching Data from the Server

```
var TodoItem = Backbone.Model.extend({urlRoot: '/todos'});
```

Fetch todo with id = 1

```
var todoItem = new TodoItem({id: 1})
```

*RESTful web service
(Rails flavor)*

```
todoItem.fetch();
```

GET /todos/1

--> { id: 1, description: 'Pick up milk', status: 'incomplete' }

Update the todo

```
todoItem.set({description: 'Pick up cookies.'});
```

```
todoItem.save();
```

**PUT /todos/1
with JSON params**

Creating & Destroying a New Todo

```
var todoItem = new TodoItem();
```

```
todoItem.set({description: 'Fill prescription.'});
```

```
todoItem.save();
```

```
todoItem.get('id');
```

```
todoItem.destroy();
```

POST /todos
with JSON params

---> 2

DELETE /todos/2

Get JSON from model

```
todoItem.toJSON();
```

---> { id: 2, description: 'Fill prescription', status: 'incomplete' }

Default Values

```
var TodoItem = Backbone.Model.extend({
  defaults: {
    description: 'Empty todo...',
    status: 'incomplete'
  }
});
```

```
var todoItem = new TodoItem();
```

```
todoItem.get('description');
```

--> 'Empty todo...'

```
todoItem.get('status');
```

--> 'incomplete'

Models Can Have Events

To listen for an event on a model

```
todoItem.on('event-name', function(){  
  alert('event-name happened!');  
});
```

Run the event


```
todoItem.trigger('event-name');
```


Special Events

To listen for changes

```
todoItem.on('change', doThing);
```

```
var doThing = function() {  
  ...  
}
```



Event triggered on change

```
todoItem.set({description: 'Fill prescription.'});
```

Set without triggering event

```
todoItem.set({description: 'Fill prescription.'},  
             {silent: true});
```

Remove event listener

```
todoItem.off('change', doThing);
```


Special Events

```
todoItem.on(<event>, <method>);
```

Built-in events

change	<i>When an attribute is modified</i>
change:<attr>	<i>When <attr> is modified</i>
destroy	<i>When a model is destroyed</i>
sync	<i>Whenever successfully synced</i>
error	<i>When model save or validation fails</i>
all	<i>Any triggered event</i>

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Views

- LEVEL 3 -



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More on the View Element

```
var SimpleView = Backbone.View.extend({});  
var simpleView = new SimpleView();
```

```
console.log(simpleView.el);
```

--> <div></div>

```
var SimpleView = Backbone.View.extend({tagName: 'li'});  
var simpleView = new SimpleView();
```

```
console.log(simpleView.el);
```

-->

tagName can be any HTML tag

More on the View Element

```
var TodoView = Backbone.View.extend({  
  tagName: 'article',  
  id: 'todo-view',  
  className: 'todo'  
});
```

```
var todoView = new TodoView();  
console.log(todoView.el);
```

--> `<article id="todo-view" class="todo"></article>`

More on the View Element

```
var todoView = new TodoView();  
console.log(todoView.el);
```

--> `<article id="todo-view" class="todo"></article>`

I want to use a jQuery method

`$('#todo-view').html();`



el is a DOM Element

`$(todoView.el).html();`

Shortcut

`todoView.$el.html();`



Good since the el's id may be dynamic


Back in Level 1

```
var TodoView = Backbone.View.extend({  
  render: function(){  
    var html = '<h3>' + this.model.get('description') + '</h3>';  
    $(this.el).html(html);  
  }  
});
```

```
var todoView = new TodoView({ model: todoItem });  
todoView.render();  
console.log(todoView.el);
```

```
<div>  
  <h3>Pick up milk</h3>  
</div>
```


Adding the `el` attributes

```
var TodoView = Backbone.View.extend({
  tagName: 'article',
  id: 'todo-view',
  className: 'todo',
  render: function() {
    var html = '<h3>' + this.model.get('description') + '</h3>';
    $(this.el).html(html); 
  }
});
```


fixing the EJ

```
var TodoView = Backbone.View.extend({
  tagName: 'article',
  id: 'todo-view',
  className: 'todo',
  render: function(){
    var html = '<h3>' + this.model.get('description') + '</h3>';
    this.$el.html(html);
  }
});
```

`$(this.el).html(html);`

```
var todoView = new TodoView({ model: todoItem });
todoView.render();
console.log(todoView.el);
```

---> `<article id="todo-view" class="todo">`
 `<h3>Pick up milk</h3>`
 `</article>`

Using a Template

```
var TodoView = Backbone.View.extend({
  ...
  template: _.template('<h3><%= description %></h3>'),
  render: function(){
    var attributes = this.model.toJSON();
    this.$el.html(this.template(attributes));
  }
});
```

The underscore library

```
var todoView = new TodoView({ model: todoItem });
todoView.render();
console.log(todoView.el);
```

--> <article id="todo-view" class="todo">
 <h3>Pick up milk</h3>
</article>

VIEWS

Backbone.js

Templating Engines

Underscore.js

```
<h3><%= description %></h3>
```

Mustache.js

```
<h3>{{description}}</h3>
```

Haml.js

```
%h3= description
```

Eco

```
<h3><%= @description %></h3>
```


Adding View Events

```
<h3><%= description %></h3>
```

In jQuery to add an alert on click

```
$("#h3").click(alertStatus);  
function alertStatus(e) {  
  alert('Hey you clicked the h3!');  
}
```



Not how we do things in Backbone

View Events

Views are responsible for responding to user interaction

```
var TodoView = Backbone.View.extend({
  events: {
    "click h3": "alertStatus"
  },
  alertStatus: function(e){
    alert('Hey you clicked the h3!');
  }
});
```

← "`<event> <selector>`": "`<method>`"

Selector is scoped to the el

```
this.$el.delegate('h3', 'click', alertStatus);
```


Views Can Have Many Events

```
var DocumentView = Backbone.View.extend({  
  anywhere on EL  
  events: {  
    "dblclick" : "open",  
    "click .icon.doc" : "select",  
    "click .show_notes" : "toggleNotes",  
    "click .title .lock" : "editAccessLevel",  
    "mouseover .title .date" : "showTooltip"  
  },  
  ...  
});
```

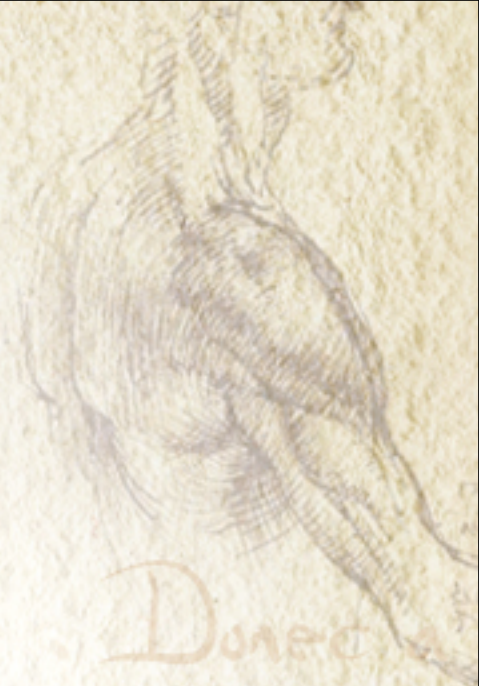

View Event Options

```
var SampleView = Backbone.View.extend({
  events: {
    "<event> <selector>": "<method>"
  },
  ...
});
```

Events

change	click	dblclick	focus	focusin
focusout	hover	keydown	keypress	load
mousedown	mouseenter	mouseleave	mousemove	mouseout
mouseover	mouseup	ready	resize	scroll
select	unload			

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Models & Views

- LEVEL 4 -



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Review our Model View

```
var TodoView = Backbone.View.extend({
  template: _.template('<h3><%= description %></h3>'),
  render: function(){
    this.$el.html(this.template(this.model.toJSON()));
  }
});
```

```
var todoView = new TodoView({ model: todoItem });
todoView.render();
console.log(todoView.el);
```



```
<div>
  <h3>Pick up milk</h3>
</div>
```

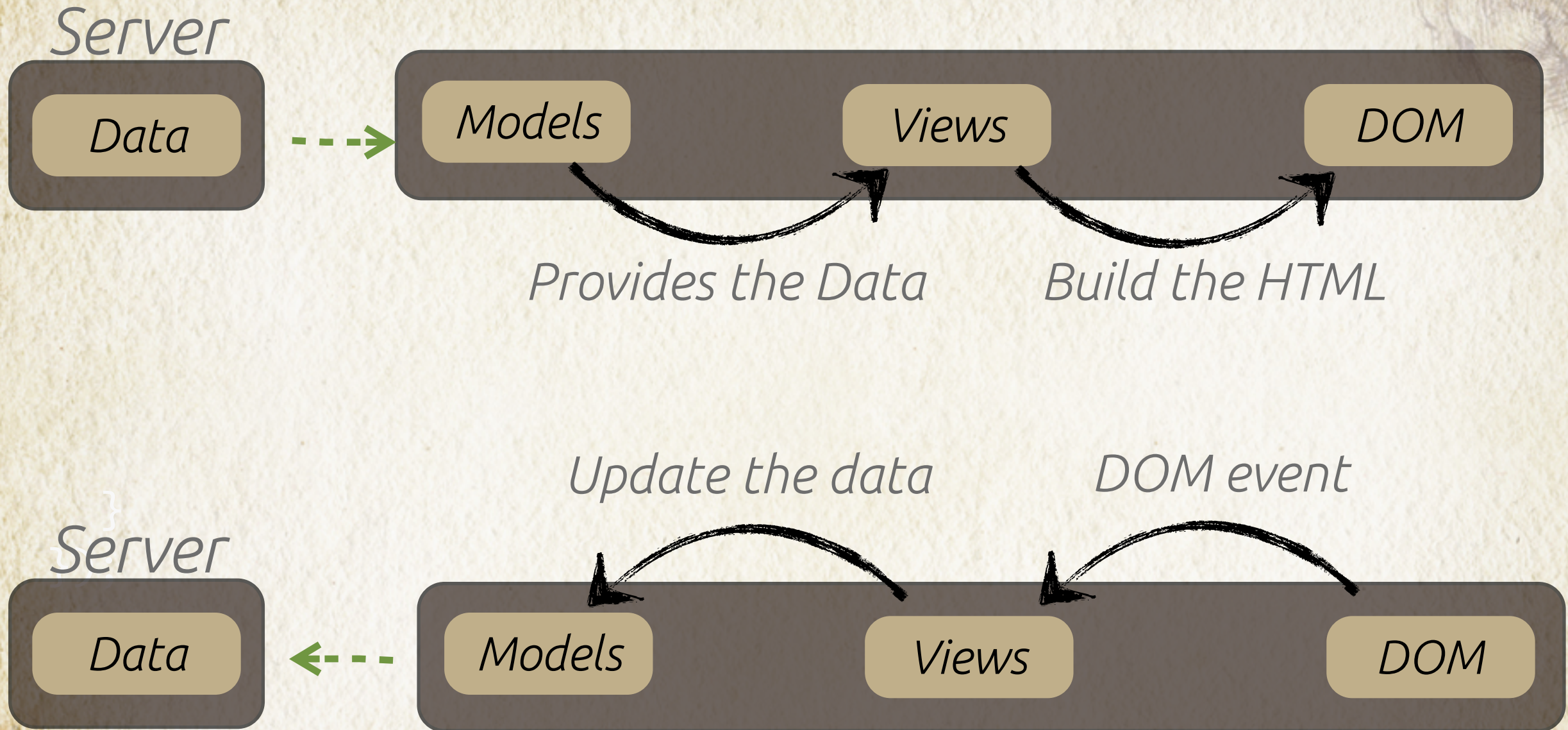

Adding a checkbox

```
var TodoView = Backbone.View.extend({
  template: _.template('<h3>' +
    '<input type=checkbox ' +
    '<% if(status === "complete") print("checked") %>/>' +
    '<%= description %></h3>'),
  render: function(){
    this.$el.html(this.template(this.model.toJSON()));
  }
});
```



How do we update the model when checkbox changes?

View events update the Model



Update model on UI event

```
var TodoView = Backbone.View.extend({
  events: {
    'change input': 'toggleStatus'
  },
  toggleStatus: function(){
    if(this.model.get('status') === 'incomplete'){
      this.model.set({'status': 'complete'});
    }else{
      this.model.set({'status': 'incomplete'});
    }
  }
});
```




Model logic in view

Refactor to the Model

```
var TodoView = Backbone.View.extend({
  events: {
    'change input': 'toggleStatus'
  },
  toggleStatus: function(){
    this.model.toggleStatus();
  }
});

var TodoItem = Backbone.Model.extend({
  toggleStatus: function(){
    if(this.get('status') === 'incomplete'){
      this.set({'status': 'complete'});
    }else{
      this.set({'status': 'incomplete'});
    }
  }
});
```

 Model logic in Model

Sync changes to server

```
var TodoItem = Backbone.Model.extend({
  toggleStatus: function(){
    if(this.get('status') === 'incomplete'){
      this.set({'status': 'complete'});
    }else{
      this.set({'status': 'incomplete'});
    }

    this.save();
  }
});
```



PUT /todos/1

Update view to reflect changes

todo list!



Pick up milk.

```
.complete {  
  color: #bbb;  
  text-decoration: line-through;  
}
```

update TodoView template:

```
template: _.template('<h3 class="<%= status %>">' +  
  '<% if(status === "complete") print("checked") %>/>' +  
  '<%= description %></h3>')
```

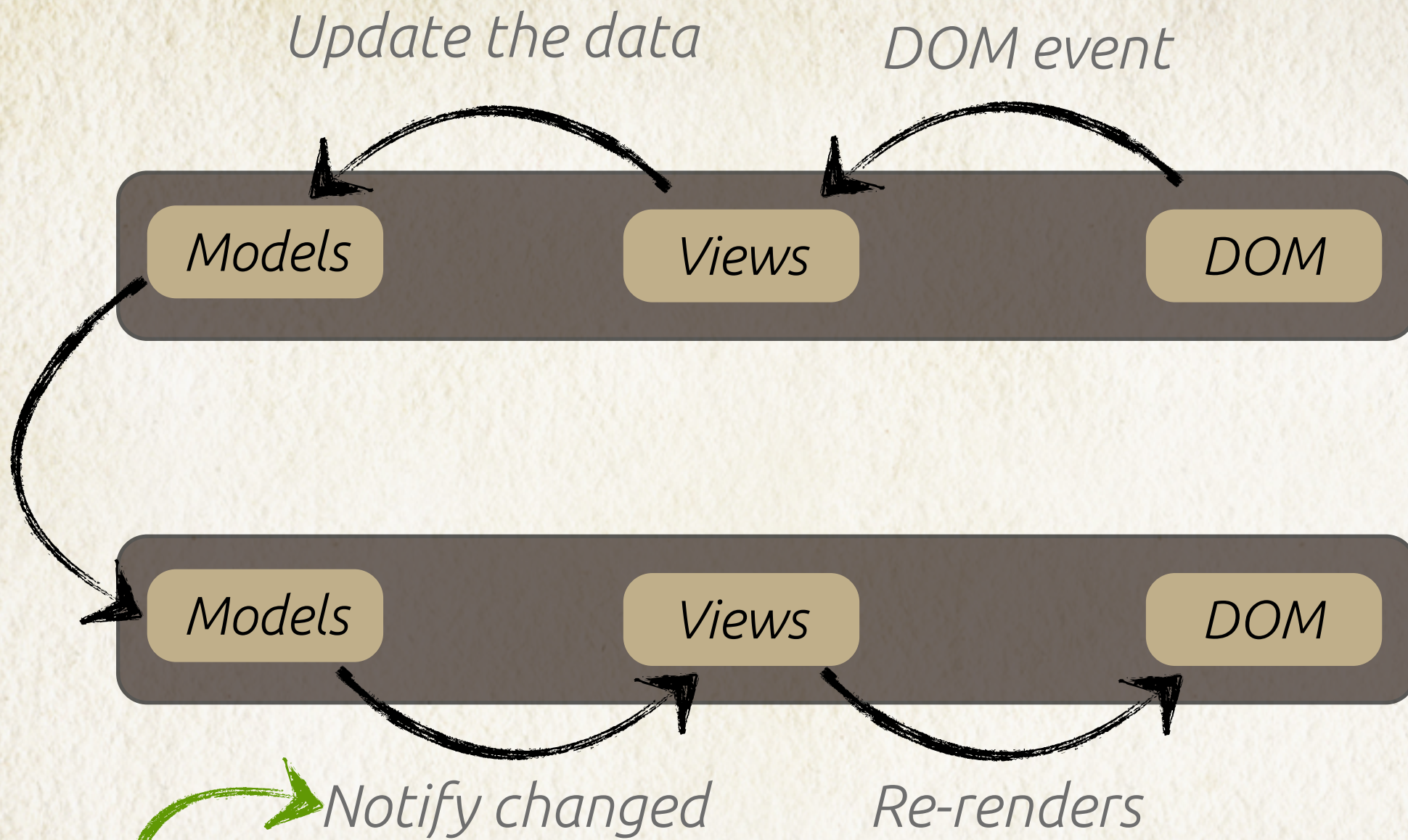
How should we update the view
when the model changes?

Re-render the view

```
var TodoView = Backbone.View.extend({
  events: {
    'change input': 'toggleStatus'
  },
  toggleStatus: function(){
    this.model.toggleStatus();
    this.render();
  },
  render: function(){
    this.$el.html(this.template(this.model.toJSON()));
  }
});
```

Doesn't work for other model changes


Model updates change the View



Use Model Events

Re-render the view

```
var TodoView = Backbone.View.extend({
  events: {
    'change input': 'toggleStatus'
  },
  initialize: function(){
    this.model.on('change', this.render, this);
  },
  toggleStatus: function(){
    this.model.toggleStatus();
  },
  render: function(){
    this.$el.html(this.template(this.model.toJSON()));
  }
});
```



Why the third argument?

Models & Views



What is this?

```
this.model.on('change', this.render);
```

render()

window



```
render: function(){  
  this.$el.html(this.template(this.model.toJSON()));  
}
```



render context is not the view

What is this?

```
this.model.on('change', this.render, this);
```

render()

todoView

```
render: function(){  
  this.$el.html(this.template(this.model.toJSON()));  
}
```



render context is bound to the view

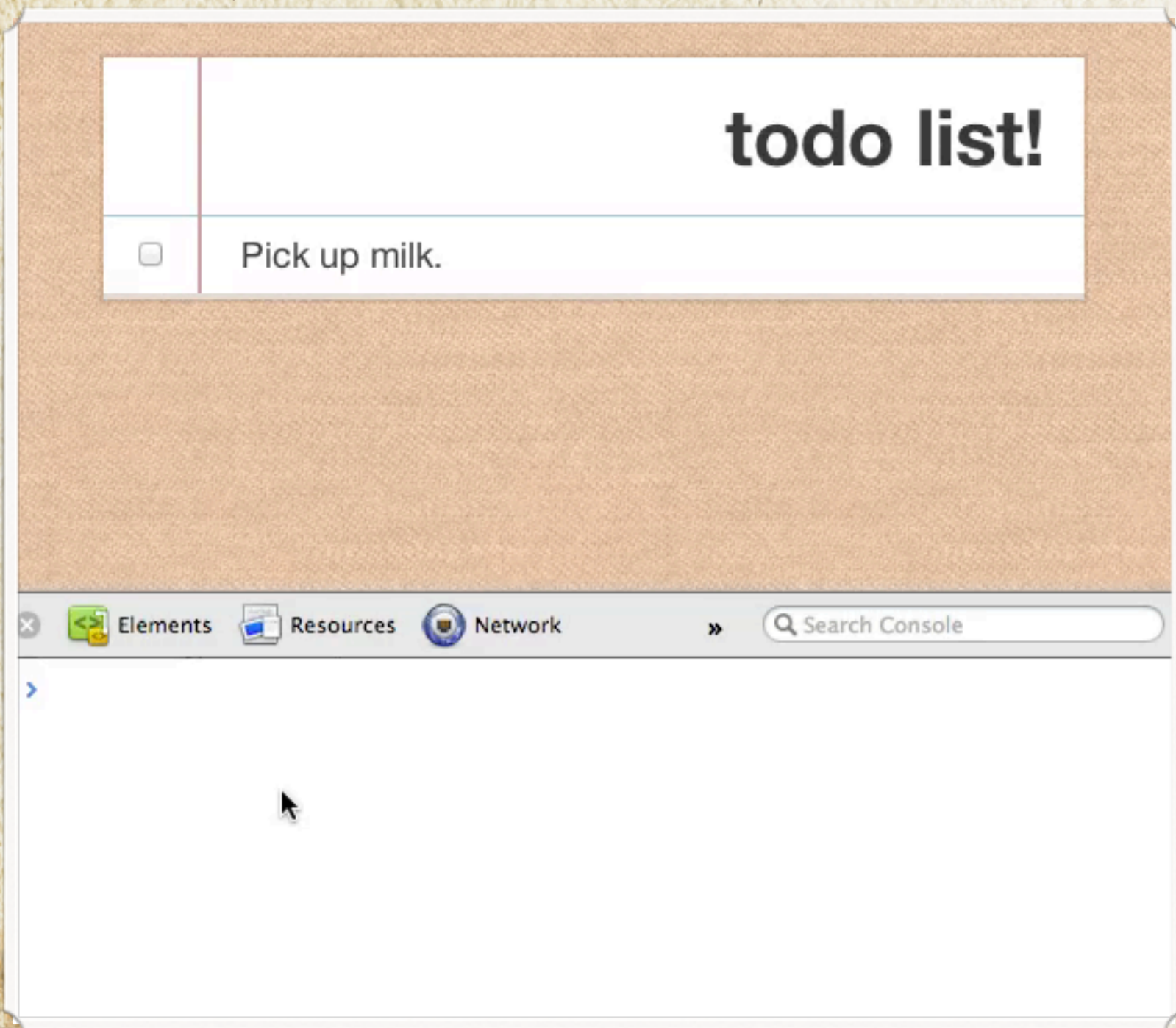
Remove view on model destroy

```
var TodoView = Backbone.View.extend({
  initialize: function(){
    this.model.on('change', this.render, this);
    this.model.on('destroy', this.remove, this);
  },

  render: function(){
    this.$el.html(this.template(this.model.toJSON()));
  },

  remove: function(){
    this.$el.remove();
  }
});
```


Watch it in action



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Collections

- LEVEL 5 -



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Set of Models

```
var todoItem1 = new TodoItem();  
var todoItem2 = new TodoItem();  
var todoList = [todoItem1, todoItem2];
```



```
var TodoList = Backbone.Collection.extend({  
  model: TodoItem  
});  
var todoList = new TodoList();
```



**TodoList manages a set of
TodoItem model instances**

Add/Remove/Get

get number of models

```
todoList.length;
```

---> 2

add a model instance

```
todoList.add(todoItem1);
```

get model instance at index 0

```
todoList.at(0);
```

---> todoItem1

get by id 1

```
todoList.get(1);
```

---> todoItem1

removing a model instance

```
todoList.remove(todoItem1);
```


Bulk Population

reset

```
var todos = [  
  {description: 'Pick up milk.', status: 'incomplete'},  
  {description: 'Get a car wash', status: 'incomplete'},  
  {description: 'Learn Backbone', status: 'incomplete'}  
];  
  
todoList.reset(todos);
```

todoList

TodoItem

TodoItem

TodoItem

Each object in Array becomes a TodoItem

Collections

Backbone.js

fetching Data from the Server

URL to get JSON data from

```
var TodoList = Backbone.Collection.extend({  
  url: '/todos'  
});
```

populate collection from server

```
todoList.fetch();
```

GET /todos

```
[  
  {description: 'Pick up milk.', status: 'incomplete', id: 1},  
  {description: 'Get a car wash', status: 'incomplete', id: 2}  
]
```

```
todoList.length; ---> 2
```


Collections Can Have Events

To listen for an event on a collection

```
todoList.on('event-name', function(){  
  alert('event-name happened!');  
});
```

Run the event

```
todoList.trigger('event-name');
```




Works just like models!

Special Events

listen for reset

```
todoList.on('reset', doThing);
```

```
var doThing = function() {  
  ...  
}
```



Event triggered on reset & fetch

```
todoList.fetch();  
todoList.reset();
```

without notification

```
todoList.fetch({silent: true});  
todoList.reset({silent: true});
```

Remove event listener

```
todoList.off('reset', doThing);
```



Special Events on Collection

```
todoList.on(<event>, <function>);
```

Built-in Events

add	<i>When a model is added</i>
remove	<i>When a model is removed</i>
reset	<i>When reset or fetched</i>

```
todoList.on('add', function(todoItem){  
  ...  
});
```



todoItem is the model being added

Model Events

Models in collection

change	<i>When an attribute is modified</i>
change:<attr>	<i>When <attr> is modified</i>
destroy	<i>When a model is destroyed</i>
sync	<i>Whenever successfully synced</i>
error	<i>When an attribute is modified</i>
all	<i>When an attribute is modified</i>

Events triggered on a model in a collection will also be triggered on the collection

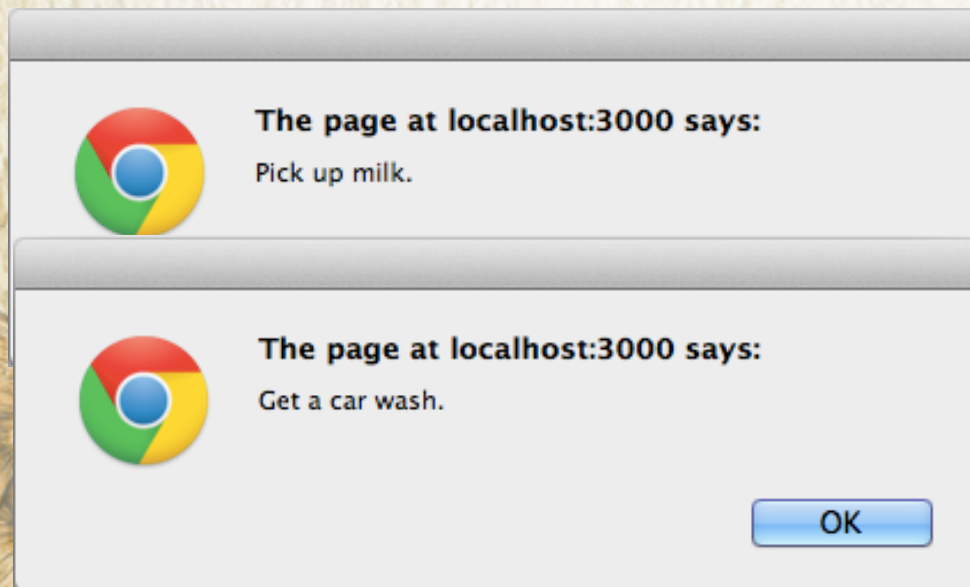
Iteration

Setup our collection

```
todoList.reset([
  {description: 'Pick up milk.', status: 'incomplete', id: 1},
  {description: 'Get a car wash.', status: 'complete', id: 2}
]);
```

Alert each model's description

```
todoList.forEach(function(todoItem){
  alert(todoItem.get('description'));
});
```



Iteration continued

Build an array of descriptions

```
todoList.map(function(todoItem){  
  return todoItem.get('description');  
});
```

---> ['Pick up milk.', 'Get a car wash']

Filter models by some criteria

```
todoList.filter(function(todoItem){  
  return todoItem.get('status') === "incomplete";  
});
```

**Returns array of items
that are incomplete**

Other Iteration functions

forEach	reduce	reduceRight
find	filter	reject
every	all	some
include	invoke	max
min	sortBy	groupBy
sortedIndex	shuffle	toArray
size	first	initial
rest	last	without
indexOf	lastIndexOf	isEmpty
chain		

<http://documentcloud.github.com/backbone/#Collection-Underscore-Methods>

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Collections & Views

- LEVEL 6 -



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Todo list!

	todo list!
<input type="checkbox"/>	Pick up milk and cookies. 
<input type="checkbox"/>	Fill prescription. 
<input type="checkbox"/>	Learn backbone 

Collection + View == Collection View!

Review our Model View

```
var TodoView = Backbone.View.extend({
  render: function(){
    this.$el.html(this.template(this.model.toJSON()));
    return this;
  }
  ...
});
var todoItem = new TodoItem();
var todoView = new TodoView({model: todoItem});
console.log(todoView.render().el);
```

```
<div>
  <h3>Pick up milk</h3>
</div>
```



Model

1 to 1

View

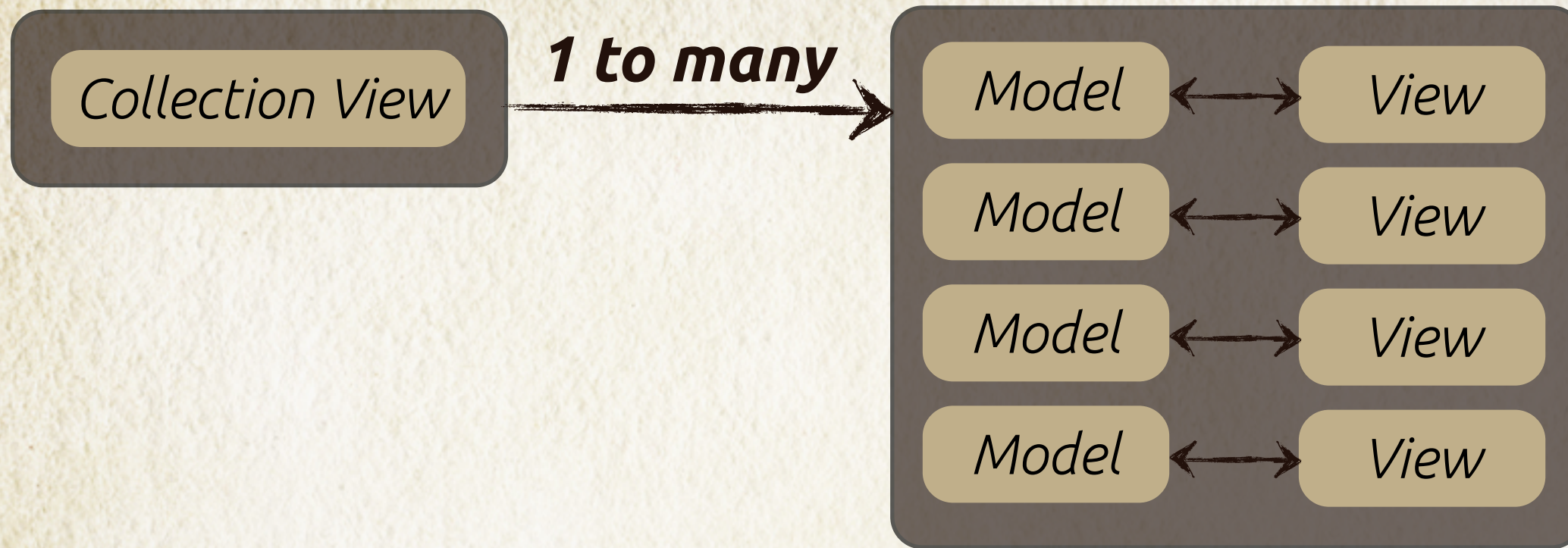


Collections & Views

Backbone.js



Collection Views



A Collection View doesn't render any of its own HTML. It delegates that responsibility to the model views.

Define and Render

```
var ListView = Backbone.View.extend({});  
var listView = new ListView({collection: todoList});
```

first crack at render

```
render: function(){  
  this.collection.forEach(function(todoItem){  
    var itemView = new ItemView({model: todoItem});  
    this.$el.append(itemView.render().el);  
  });  
}
```

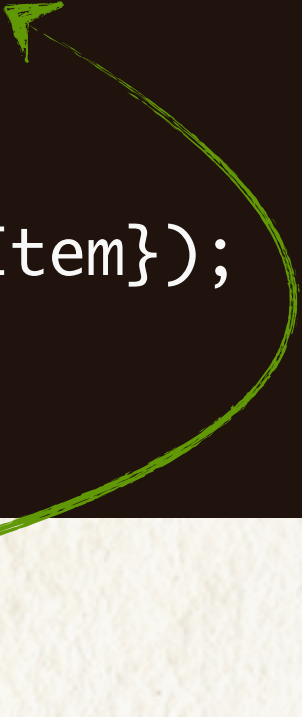


forEach changes context

Rendering

addOne


```
render: function(){  
  this.collection.forEach(this.addOne, this);  
}  
addOne: function(todoItem){  
  var todoView = new TodoView({model: todoItem});  
  this.$el.append(todoView.render().el);  
}
```



 **forEach saves context**

Render continued

```
var todoListView = new TodoListView({collection: todoList});  
todoListView.render();  
console.log(todoListView.el);
```



```
<div>  
  <h3 class="incomplete">  
    <input type=checkbox />  
    Pick up milk.  
  </h3>  
  
  <h3 class="complete">  
    <input type=checkbox checked/>  
    Learn backbone.  
  </h3>  
</div>
```


Adding new Models

```
var TodoListView = Backbone.View.extend({
  addOne: function(todoItem){
    var todoView = new TodoView({model: todoItem});
    this.$el.append(todoView.render().el);
  },
  render: function(){
    this.collection.forEach(this.addOne, this);
  }
});
```

```
var newTodoItem = new TodoItem({
  description: 'Take out trash.',
  status: 'incomplete'
});
todoList.add(newTodoItem);
```

✘ newTodoItem not in DOM

Collections & Views



Listen to the add Event

```
var TodoListView = Backbone.View.extend({
  initialize: function(){
    this.collection.on('add', this.addOne, this);
  },
  addOne: function(todoItem){
    var todoView = new TodoView({model: todoItem});
    this.$el.append(todoView.render().el);
  },
  render: function(){
    this.collection.forEach(this.addOne, this);
  }
});
```

```
var newTodoItem = new TodoItem({
  description: 'Take out trash.',
  status: 'incomplete'
});
todoList.add(newTodoItem);
```



Add Event in Action

	todo list!
<input type="checkbox"/>	Pick up milk.
<input checked="" type="checkbox"/>	Get a car wash
<input type="checkbox"/>	Learn Backbone

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```
> newTodoItem = new TodoItem({description:
  'Learn Rails', status: 'incomplete'})
  child
> |
```


Reset Event

```
var ListView = Backbone.View.extend({
  initialize: function() {
    this.collection.on('add', this.addOne, this);
  },
  addOne: function(todoItem) {
    var itemView = new TodoView({model: todoItem});
    this.$el.append(itemView.render().el);
  },
  render: function() {
    this.collection.forEach(this.addOne, this);
  }
});
```

```
var todoList = new TodoList();
var listView = new ListView({
  collection: todoList
});
todoList.fetch();
```

todoList

reset

Reset Event

```
var ListView = Backbone.View.extend({
  initialize: function() {
    this.collection.on('add', this.addOne, this);
    this.collection.on('reset', this.addAll, this);
  },
  addOne: function(todoItem) {
    var itemView = new TodoView({model: todoItem});
    this.$el.append(itemView.render().el);
  },
  addAll: function() {
    this.collection.forEach(this.addOne, this);
  },
  render: function() {
    this.addAll();
  }
});
```

```
todoList.fetch();
```



Reset Event in Action

todo list!



removing from collection

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>



fixing remove with Custom Events

```
todoList.remove(todoItem);
```

todoList

remove

TodoList Collection

```
initialize: function(){  
  this.on('remove', this.hideModel);  
},  
hideModel: function(model){  
  model.trigger('hide');  
}
```

todoItem

hide

TodoItem View

```
initialize: function(){  
  this.model.on('hide', this.remove, this);  
}
```


Bringing it all together

todo list!

- Pick up milk and cookies.
- Fill prescription.
- Learn backbone

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>

Collections & Views



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Donec a turpis in



Donec a
sed sed orci.
urpis in erat




Router and History

- LEVEL 7 -



Sed sed orci. Nullam a lac
Donec a turpis in erat cur
fringit. Sed sed orci. Nullam

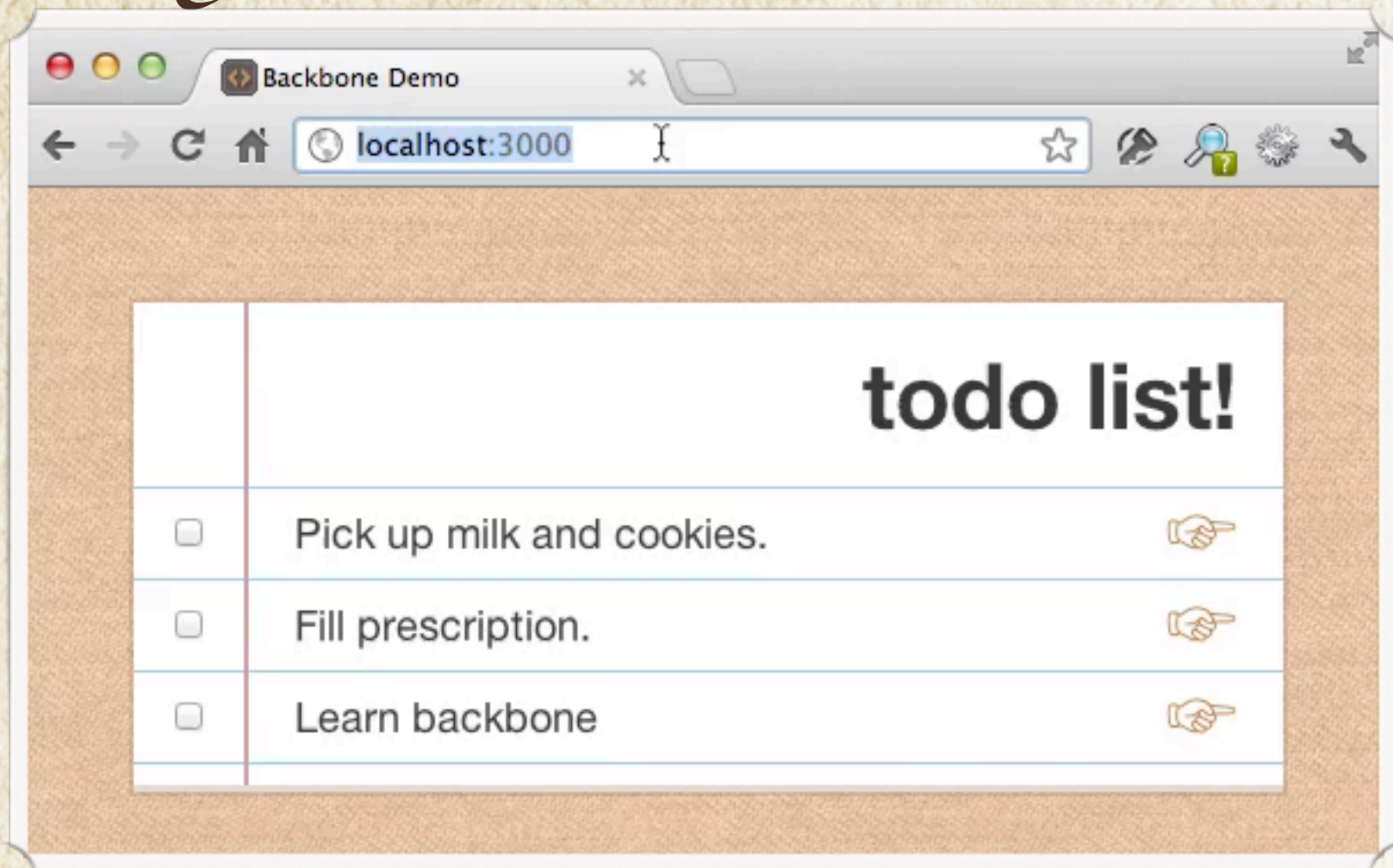
The Problem

todo list!		
<input type="checkbox"/>	Pick up milk and cookies.	
<input type="checkbox"/>	Fill prescription.	
<input type="checkbox"/>	Learn backbone	

```
<a href='#' class='todo'></a>
```

```
$('.a.todo').click(function(e){  
  e.preventDefault();  
  // show single todo  
})
```


The Problem



Router & History to the rescue!

The Router

Router's map URLs to actions

```
var router = new Backbone.Router({
  routes: { "todos": 'index' },
  index: function(){
    ...
  }
});
```

when the url path is

/todos or #todos




```
index: function(){ ... }
```


The Router

Routes match parameter parts

```
var router = new Backbone.Router({  
  routes: { "todos/:id": 'show' }  
  show: function(id){ ... }  
})
```



Matches

URL	params
/todos/1	<i>id = 1</i>
/todos/2	<i>id = 2</i>
/todos/hello	<i>id = 'hello'</i>
/todos/foo-bar	<i>id = 'foo-bar'</i>

More Route Matchers

matcher	URL	params
search/:query	search/ruby	<i>query = 'ruby'</i>
search/:query/p:page	search/ruby/p2	<i>query = 'ruby', page = 2</i>
folder/:name-:mode	folder/foo-r	<i>name = 'foo', mode = 'r'</i>
file/*path	file/hello/world.txt	<i>path = 'hello/world.txt'</i>



*** Wildcard matches everything after file/**

Triggering Routes

Using navigate

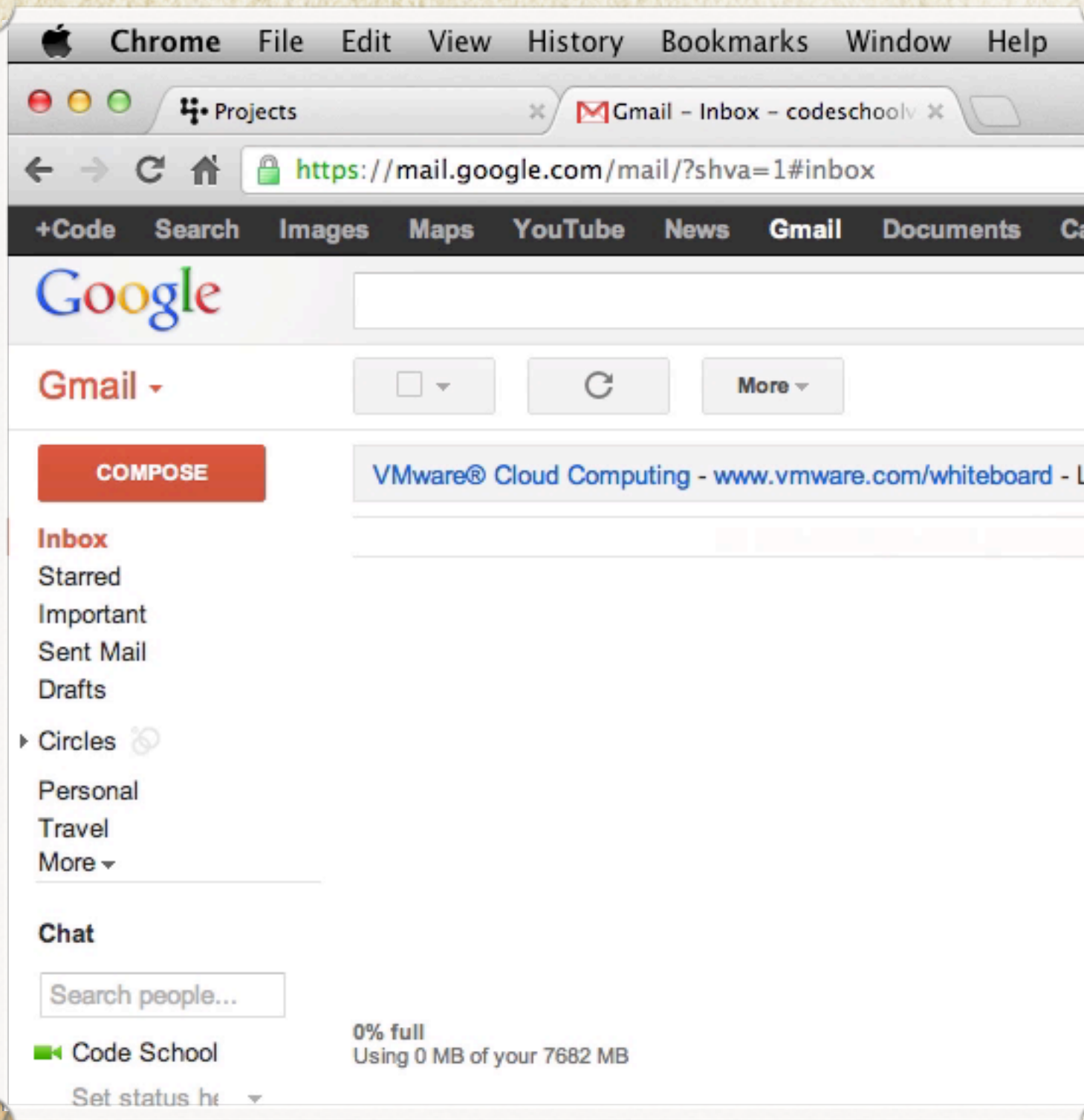
```
router.navigate("todos/1", {  
  trigger: true  
});
```

Using links

```
<a href='#todos/1' >  </a>
```

! These won't work yet

History



Hashbangs (#)



HTML5 pushState

Router & History

Backbone.js

Backbone.history

pushState off

```
Backbone.history.start();
```



```
router.navigate("todos/1")
```

---> #todos/1



pushState on

```
Backbone.history.start({pushState: true});
```



```
router.navigate("todos/1")
```

---> /todos/1



Show Action

Define router class

```
var TodoRouter = Backbone.Router.extend({
  routes: { "todos/:id": "show" },
  show: function(id){
    this.todoList.focusOnTodoItem(id);
  },
  initialize: function(options){
    this.todoList = options.todoList;
  }
});
```

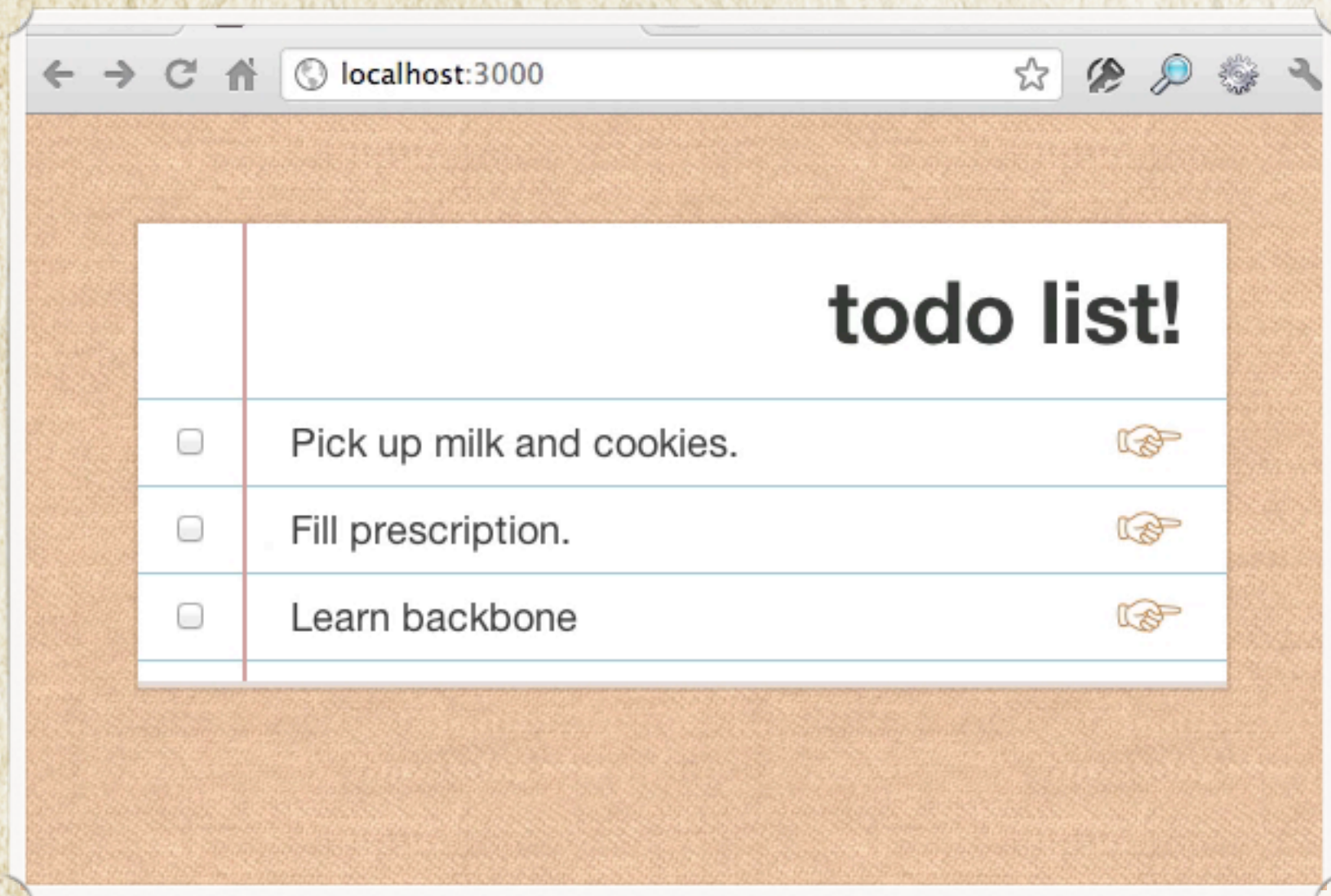
Instantiate router instance

```
var todoList = new TodoList();
var TodoApp = new TodoRouter({todoList: todoList});
```


Index Action

```
var TodoRouter = Backbone.Router.extend({
  routes: {
    "": "index",
    "todos/:id": "show"
  },
  index: function() {
    this.todoList.fetch();
  },
  show: function(id) {
    this.todoList.focusOnTodoItem(id);
  },
  initialize: function(options) {
    this.todoList = options.todoList;
  }
});
```


In Action



App Organization

```
var TodoApp = new (Backbone.Router.extend({
  routes: { "": "index", "todos/:id": "show" },
  initialize: function(){
    this.todoList = new TodoList();
    this.todosView = new TodoListView({collection: this.todoList});
    $('#app').append(this.todosView.el);
  },
  start: function(){
    Backbone.history.start({pushState: true});
  },
  index: function(){
    this.todoList.fetch();
  },
  show: function(id){
    this.todoList.focusOnTodoItem(id);
  }
}));
```

```
$(function(){ TodoApp.start() })
```