Collections

- LEVEL 5 -

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

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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);
```

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Bulk Population

reset

```javascript
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

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Fetching Data from the Server

URL to get JSON data from

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

populate collection from server

```javascript
todoList.fetch();
```
GET /todos

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

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

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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!**

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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);
```

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Special Events on Collection

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

Built-in Events

add	*When a model is added*
remove	*When a model is removed*
reset	*When reset or fetched*

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

todoItem is the model being added

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Model Events

Models in collection

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

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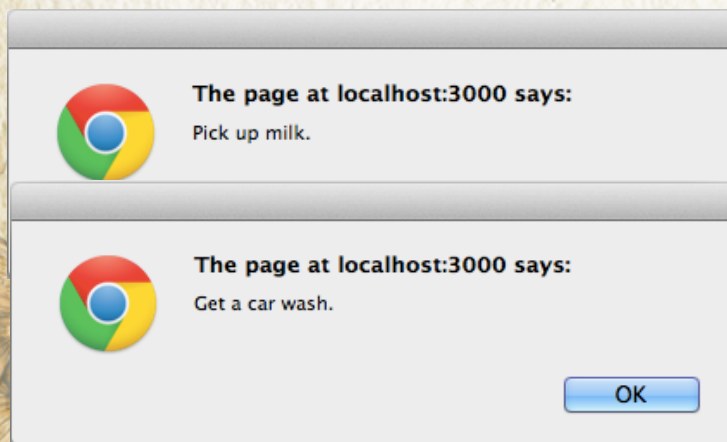
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Iteration

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'));
});
```

The page at localhost:3000 says:

Pick up milk.

The page at localhost:3000 says:

Get a car wash.

OK

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Iteration continued

Build an array of descriptions

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

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

Filter models by some criteria

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

Returns array of items
that are incomplete

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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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