Essential Knockout and JavaScript Tips

Round 8: Performance

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Performance

When One Binding Reevaluates, They All Do

When Good Bindings Update

```
<select data-bind="options: colors,
        value: selectedColor,
        visible: showColors"></select>
```

On first binding

"init" executes for each binding

"update" executes for each binding

When dependencies are updated, "update" executes for each binding
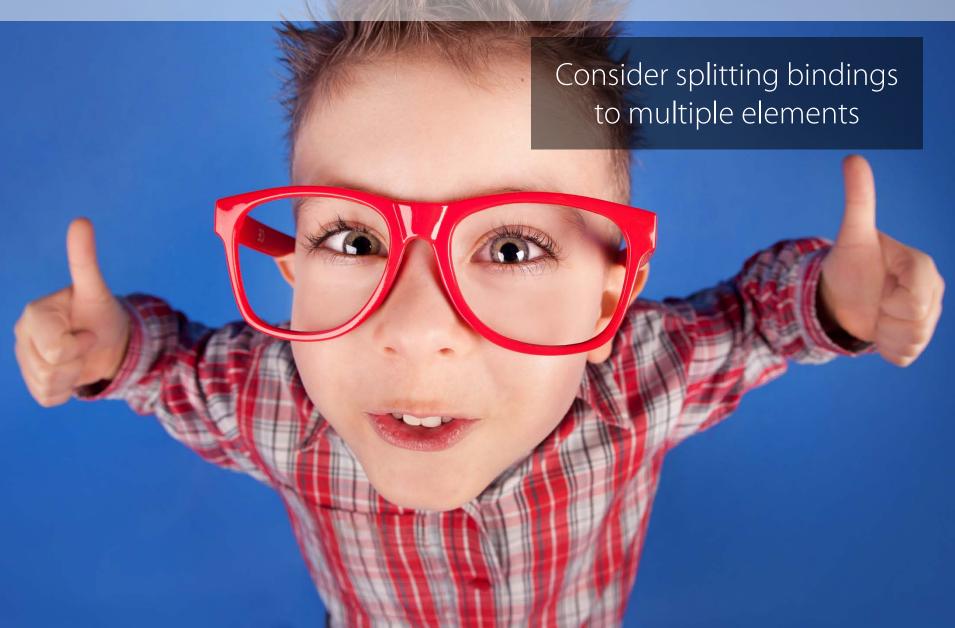
When Good Bindings Update

```
<select data-bind="options: colors,
        value: selectedColor,
        visible: showColors"></select>
```

When "value" updates,
options also updates

Usually non issue, unless
loading options is expensive

1 remedy is to load options
from simple list

Rules of Thumb

Consider splitting bindings to multiple elements

Separating Bindings

```
<div data-bind="visible: showColors">
    <select data-bind="options: colors,
        value: selectedColor"></select>
</div>
```

Split into multiple elements

Avoid Excessive Firing of Notifications

Each Update Fires Notification

```
var addPeople = function (namesArray) {
    namesArray.foreach(function (name) {
        people.push(new Person(name));
    });
};
```

Each push will cause a notification

Smarter Loading

```javascript
var addPeople = function (namesArray) {
    var underlyingArray = people();
    namesArray.foreach(function(name) {
        underlyingArray.push(new Person(name));
    });
    people.valueHasMutated();
};
```
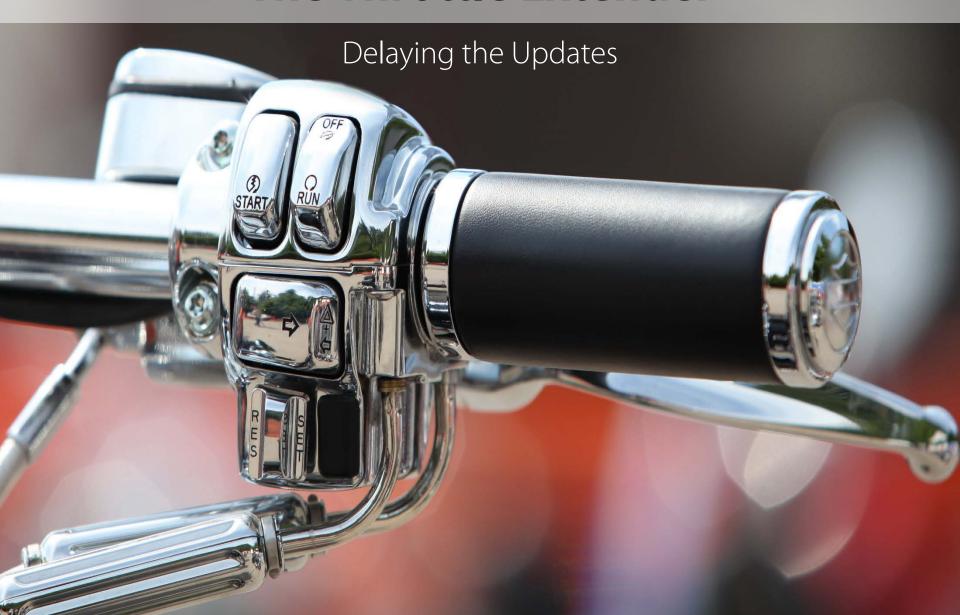
1 notification

Want Speed?

Load the underlying array,
not the observableArray

Tell the observableArray it has mutated

The Throttle Extender

Delaying the Updates

Throttling Observables

```
var nameFilter = ko.observable() .extend({ throttle: 1000 });
```

1 second delay until observable is updated

Throttling a Computed

```javascript
var total = ko.computed(function(){
    return price() * quantity();
).extend({ throttle: 1000 });
```

Computed will wait 1 second before re-evaluating

Throttling and Performance

Improve performance

Ideal for filters

Debugging and Performance

Performance Tips

Throttling

Subscriptions

Underlying array

Understanding binding
update strategies