Expressions, Filters, & Built-In Directives

Separation of Concerns, review

+ Controllers hold *what* data should be displayed.

+ Views determine *how* data should be displayed.

+ Distinguishing between these concerns is crucial for a well structured app architecture.

+ Expressions, filters, and interpolations control *how data is displayed*.

Built-In Directives

Objectives

+   Chose the right directive to solve common problems

+   Find the Angular UI docs which explain directives.

+   Write `ng-class` directives

Solve things the Angular way!

+ ng-click: handle a button click

+ ng-if: conditionally display an object

+ ng-cloak: Hide a part of the DOM until angular executes

+ ng-submit: submit a form

+ https://docs.angularjs.org/api/ng/directive

ng-class

+ Conditionally use a class on an element based on a condition.

+ ng-class docs:
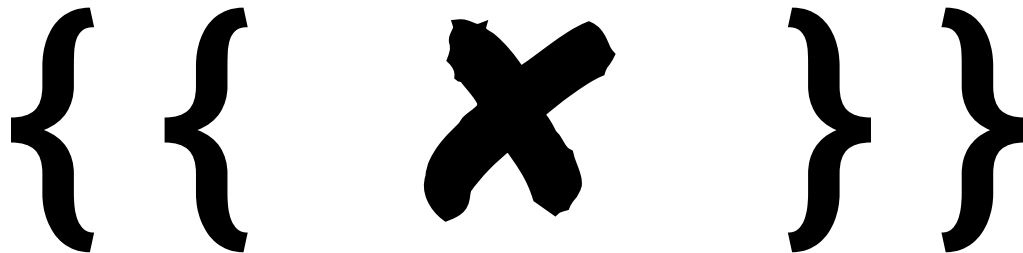https://docs.angularjs.org/api/ng/directive/ngClass

```
ng-class="{highlight:
aircraft.testFlightYear < 2017}"
```

Think of it as {*className: condition when that class should be applied*}

Expressions & Interpolation

Objectives

+ Explain interpolations

+ Explain expressions

+ Describe the difference between interpolations and expressions

+ Write expressions and interpolations in {{ … }}

{{ ✗ }}

Interpolations substitute variables into strings that are displayed in the DOM. In interpolation, there are **no further modifications** to the variables. ✗ is your variable. Expressions can modify output.

Interpolations: Use Case

+   Use interpolations to populate your templates and DOM with data.

+   Moving data from controller onto the DOM efficiently and conveniently is essential functionality.

+   Interpolations keep it simple: just show values on the DOM, compute things outside the view.

Expressions: Use case

+ Expressions perform calculations and data manipulations *in the view*.

+ The view can control *how* data is displayed.

+ They are limited, and this is good for your design. Separation of concerns.

Filters

Filters: Objectives

+ Apply filters to values to format them for display

+ Apply filters to sort elements.

+ Apply filters to arrays to filter (!) what elements are displayed (exercise for reader...)

Filter syntax, single values

+ To format a currency:
  ```
  {{ 123456789.12 | currency }}
  $123,456,789.12
  ```

+ To format a date (*milliseconds* since The Epoch)
  ```
  {{ 1483123306000 | date }}
  ```
  Dec 30, 2016

+ I18n, l10n is possible. Write custom filters, etc.

Filters, multiple values

+   Work on arrays of values to reorder, sort, etc.

+   orderBy example syntax: filter parameters
    `$ctrl.stuff | orderBy:'keyName'`

+   Fun to write custom filters!

+   Look up the filter filter

Demo Time

Objectives

+ Subject: Civilian Supersonic Transport (SST) aircraft since the 1960s (there aren't that many)

+ Demonstrate ng-class, ng-repeat, filter, binding properties.

+ Make a table from an array to display data