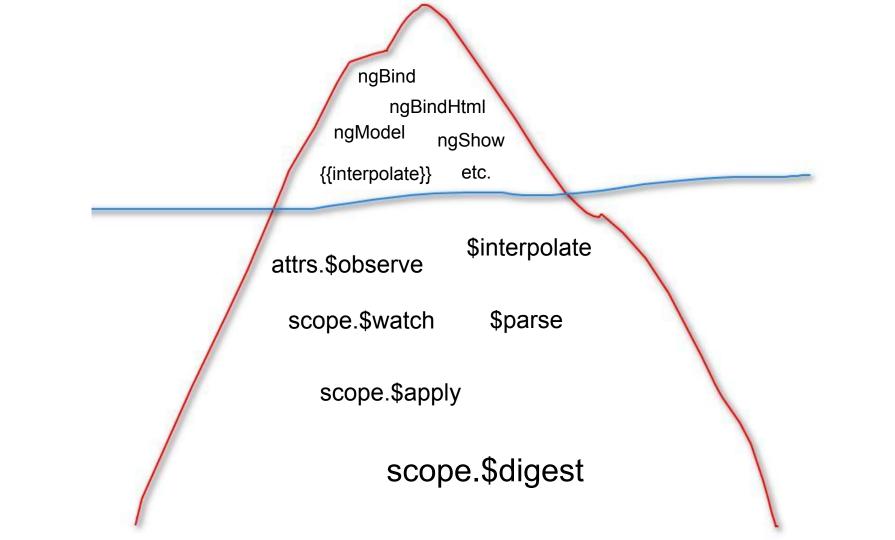
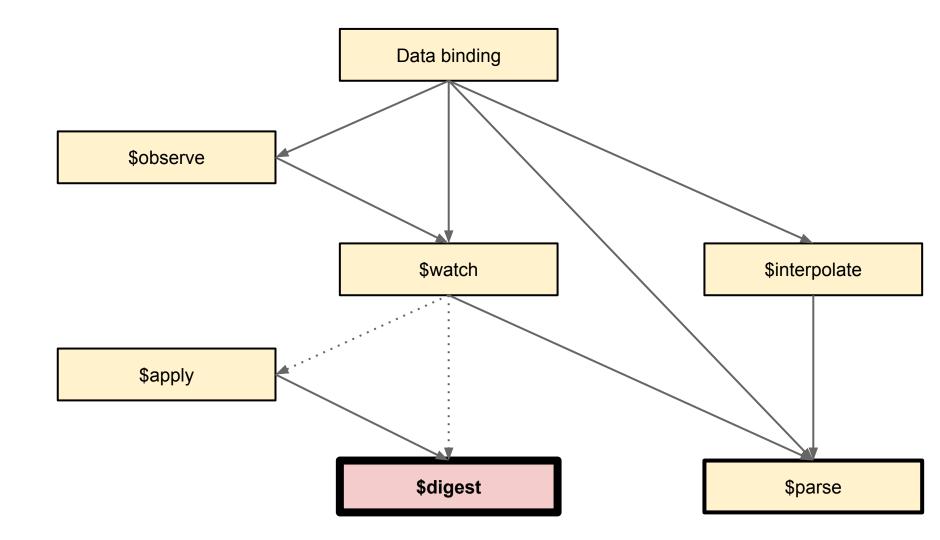
## \$digest

@buunguyen







- Binding by \$watch, \$observe, \$parse, \$interpolate
  - \$interpolate by \$parse
  - \$observe by \$watch
    - \$watch by \$parse, \$apply, \$digest
      - \$apply by \$digest

Demo: a\_bindings.html Demo: b\_bindings.html

Relevant AngularJS source: ngBind.js, input.js, interpolate.js, parse.js, compile.js

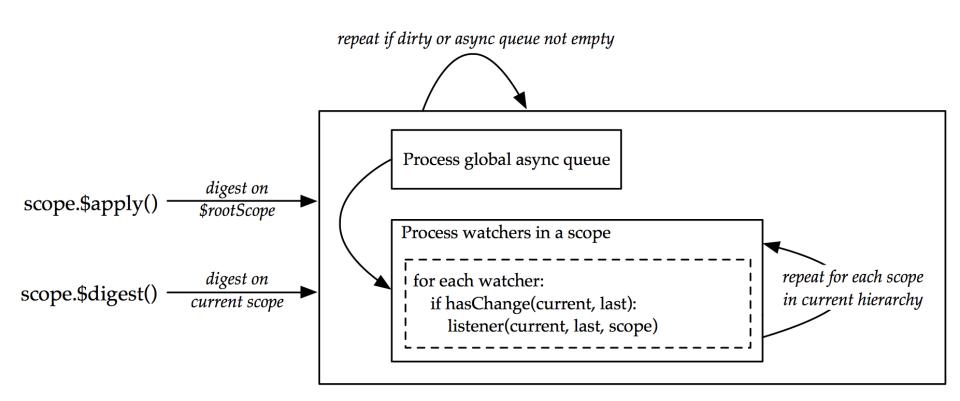
- Binding by \$watch, \$observe, \$parse, \$interpolate
  - \$interpolate by \$parse
  - \$observe by \$watch
    - \$watch by \$parse, \$apply, \$digest
      - \$apply by \$digest

## <!DOCTYPE html>



```
function Scope() {
  this.$$watchers = []
Scope.prototype.$watch = function(exp, listener, deep) {
  this.$$watchers.push({
    getter : $parse(exp),
    last : undefined,
    fn : listener,
    deep : deep
(vastly simplified)
```

Relevant AngularJS source: rootScope.js



```
if ($rootScope.$$phase)
     throw new Error($rootScope.$$phase + ' already in progress')
    $rootScope.$$phase = phase
  Scope.prototype.$apply = function() {
    beginPhase('$apply')
   try {
     return this.$eval(expr) // => $parse(expr)(this)
    } finally {
     clearPhase()
     $rootScope.$digest() // run on $rootScope
  Scope.prototype.$digest = function() {
    beginPhase('$digest')
   try {
     // DIGEST LOOP FOR CURRENT SCOPE
   } finally {
     clearPhase()
Demo: c apply safeapply.html
```

Relevant AngularJS source: rootScope.js

Demo: d digest vs apply.html

function beginPhase(phase) {

s source: rootScope.js

## \$digest keeps iterating until models stabilize

Demo: e\_model\_stabilizes.html

Relevant AngularJS source: rootScope.js

## What we've learned

- 2-way binding under the hood
- Inner working of digest loop
- Performance pitfalls and bugs

Thanks! Find me @buunguyen