

# FE Architecture of Weex

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Virtual DOM

Data-binding

Diff Algorithm

Transformer

Domain Specific Language

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ES2015

Webpack

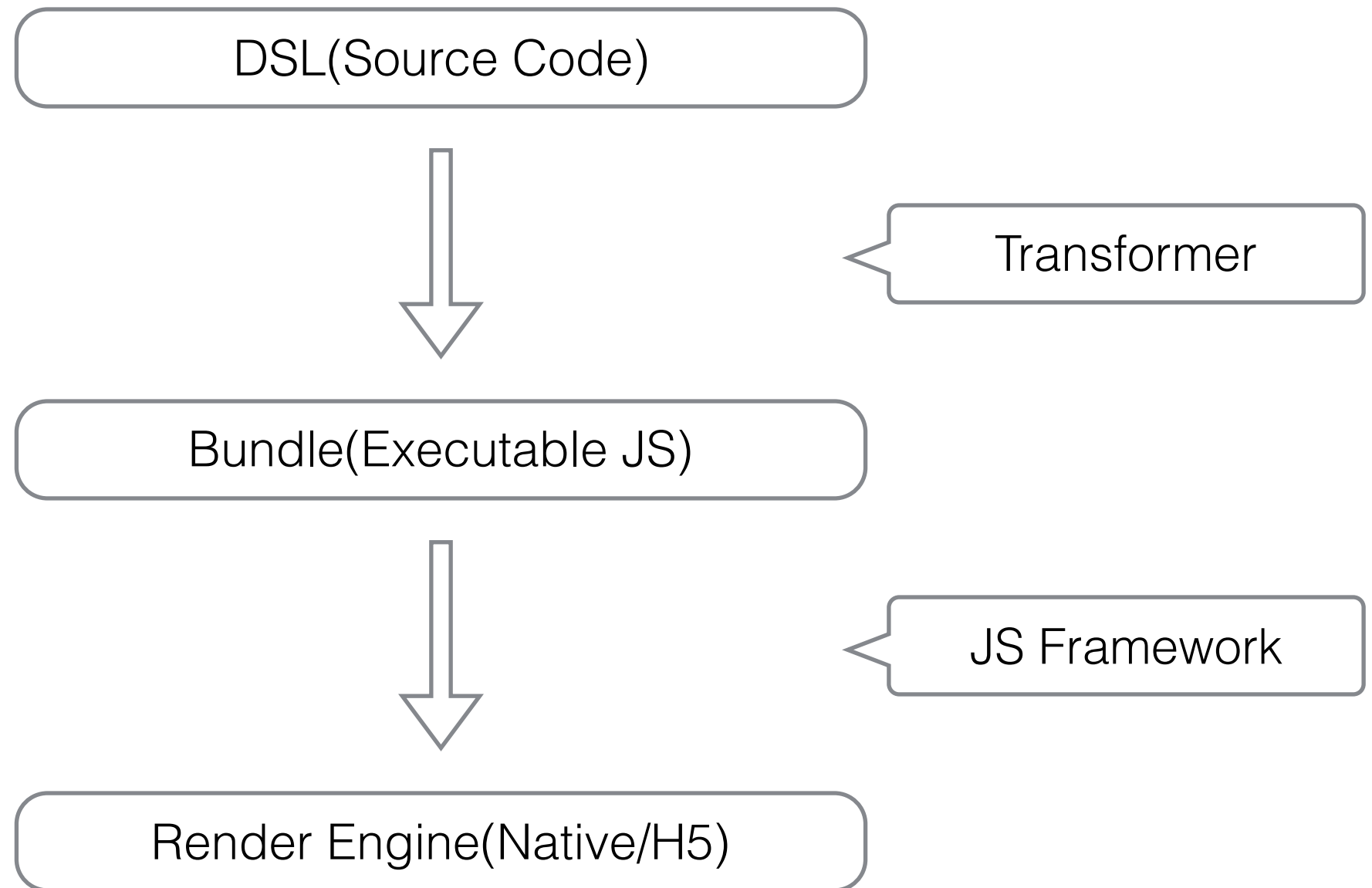
E2E Test

Istanbul

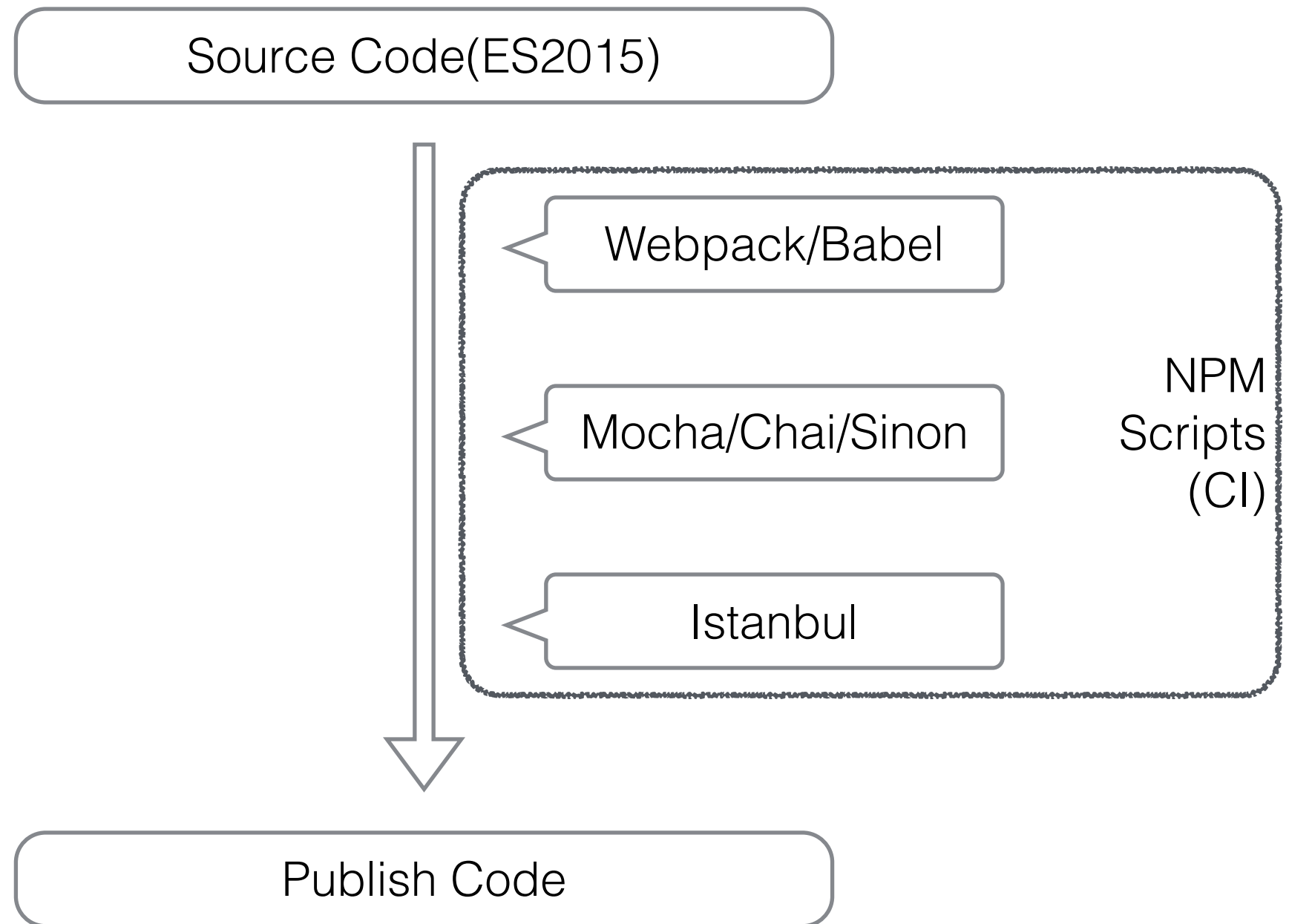
OpenSource

NPM Scripts

# Programing

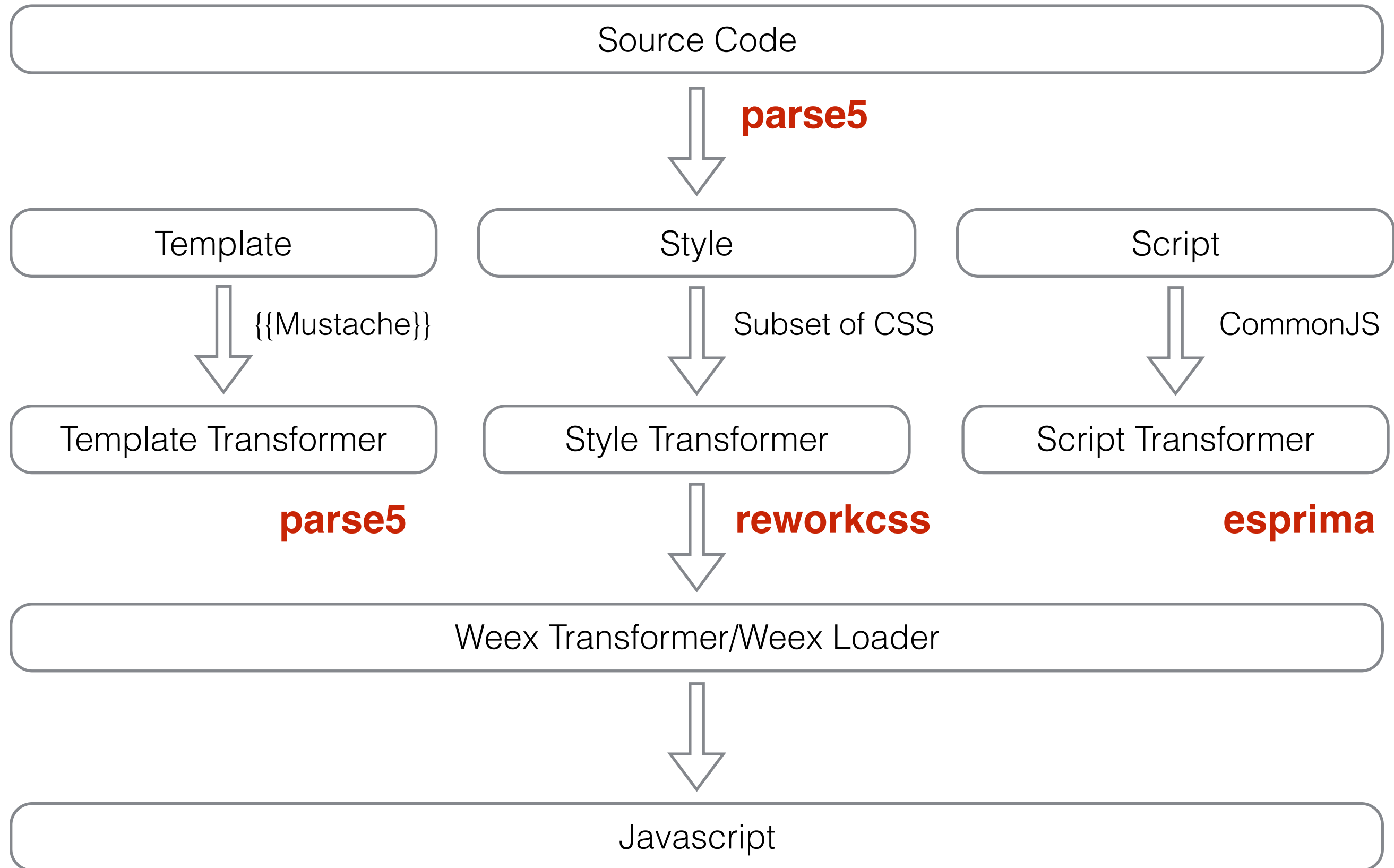


# Engineering





# DSL Spec





# Data-binding

Object.defineProperty

MutationObserver

```
get() {  
  /*Observe Code*/  
  return someValue  
}
```

```
set(v) {  
  /*Observe Code*/  
  someValue = v  
}
```

# Logic in Data-binding

```
get() {  
  if (observe) {  
    record-dep  
  }  
  return someValue  
}
```

```
set(v) {  
  if (observe) {  
    notify-dep  
  }  
  someValue = v  
}
```

```
watch() {  
  observe = true  
  var v = getter()  
  parse-dep  
  observe = false  
  return v  
}
```



# Logic in Data-binding

```
fullName:get() {  
  deps.push(fullName)  
  this.firstName + this.lastName  
}
```

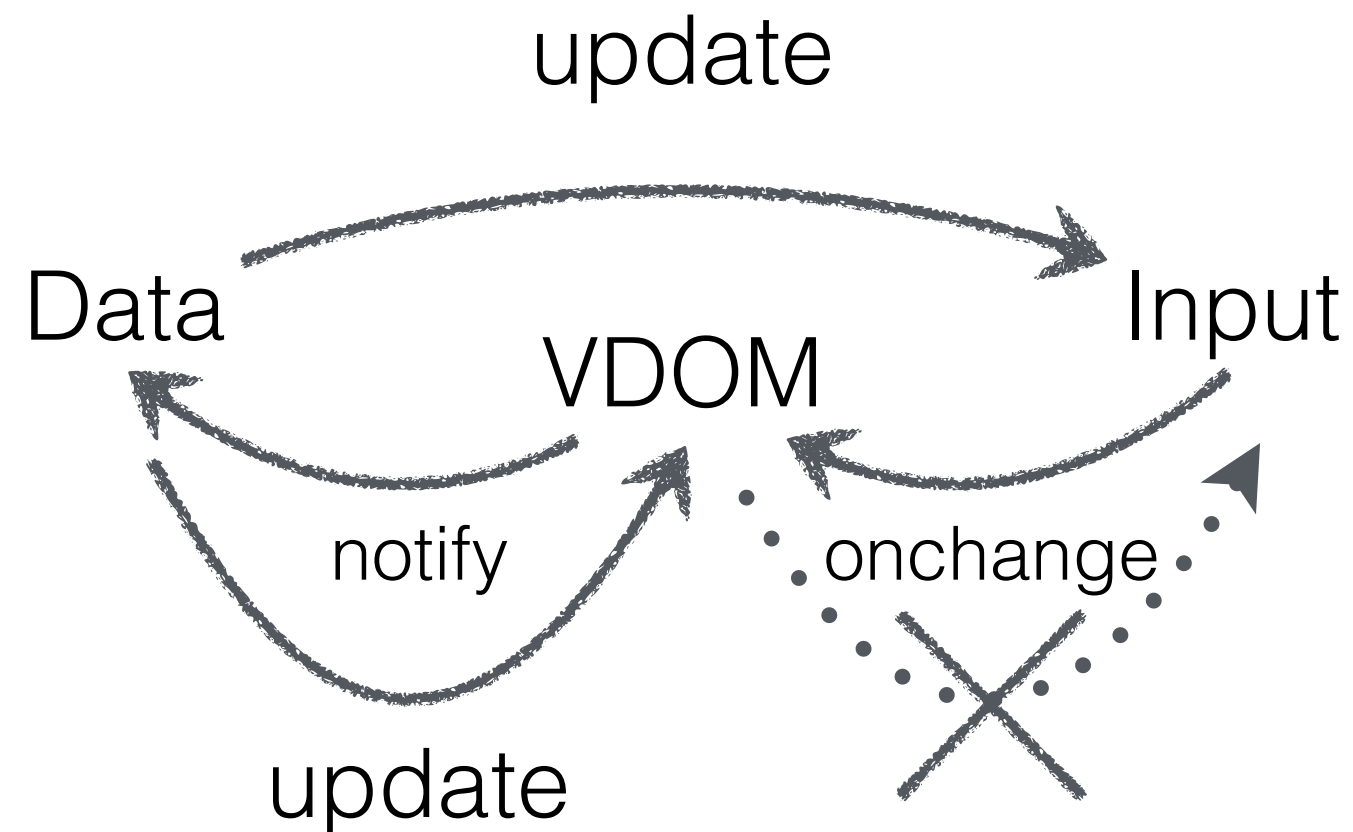
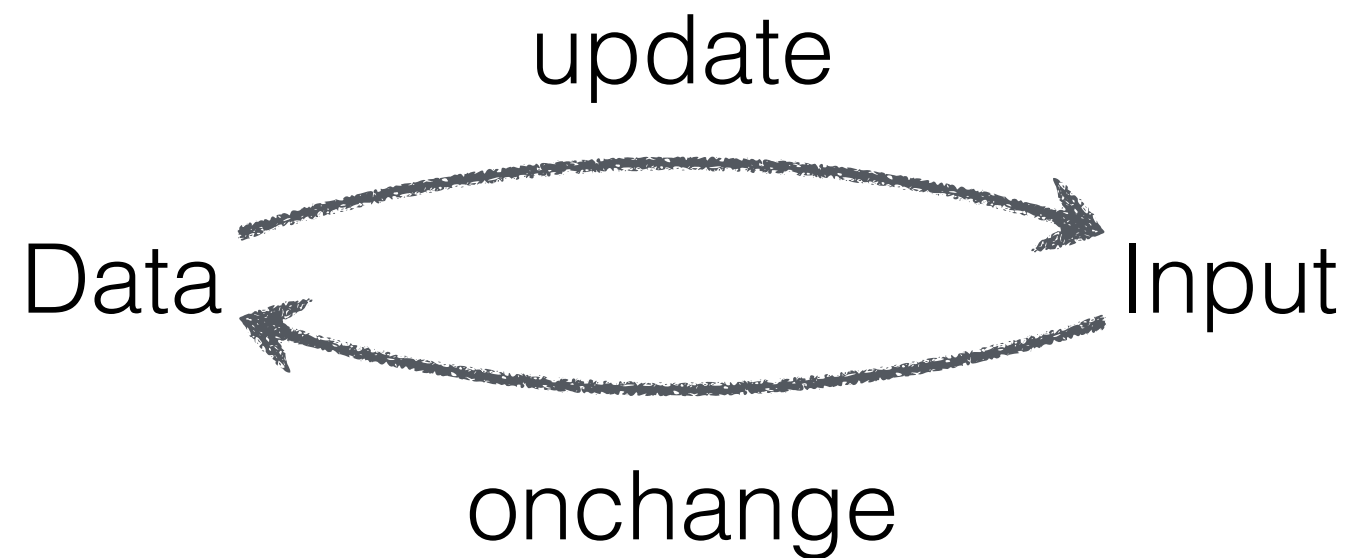


```
firstName:get() {  
  deps.push(firstName)  
}
```

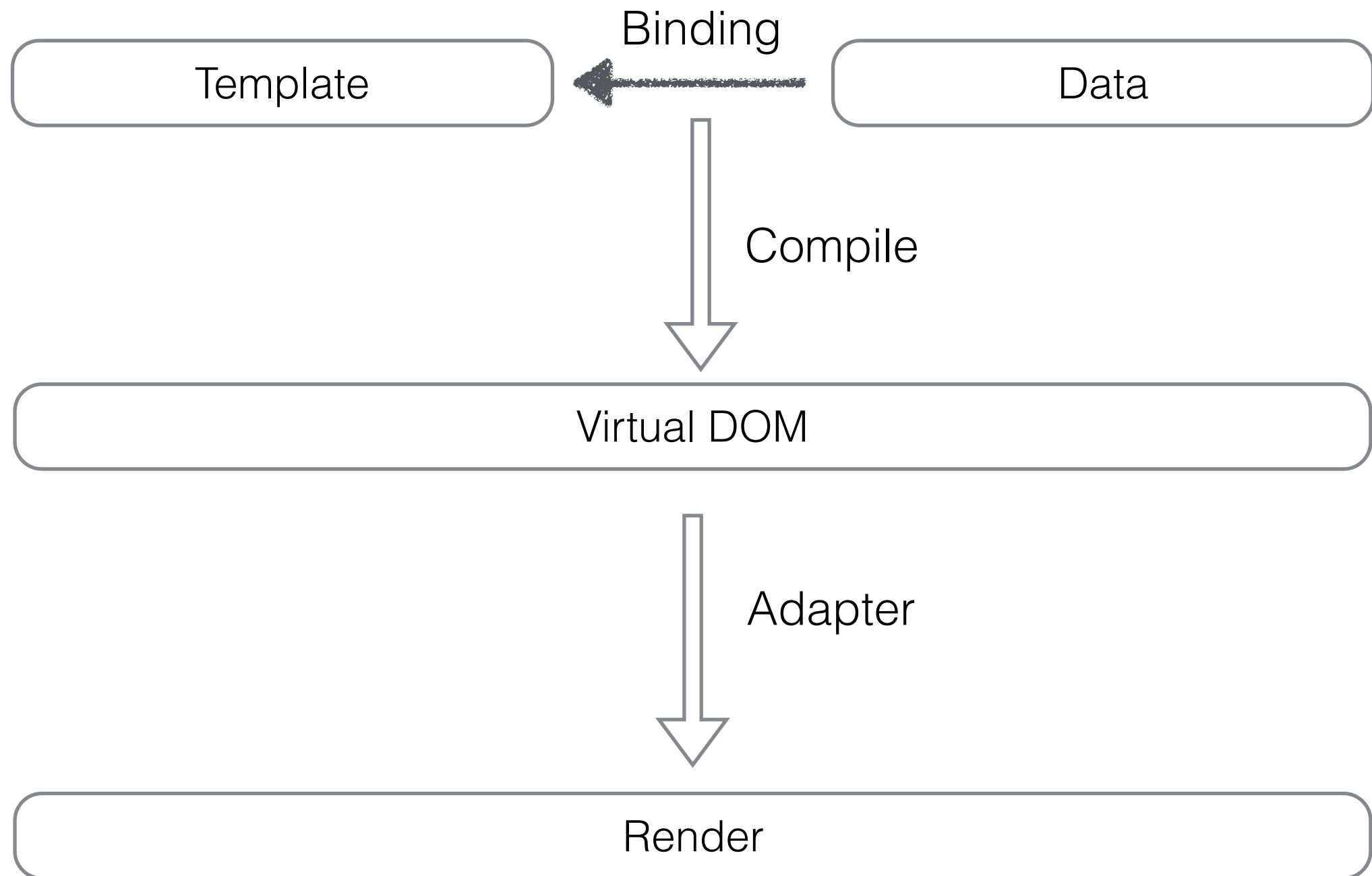
```
firstName:set(v) {  
  deps.notify()  
}
```



# One-Way Data-binding

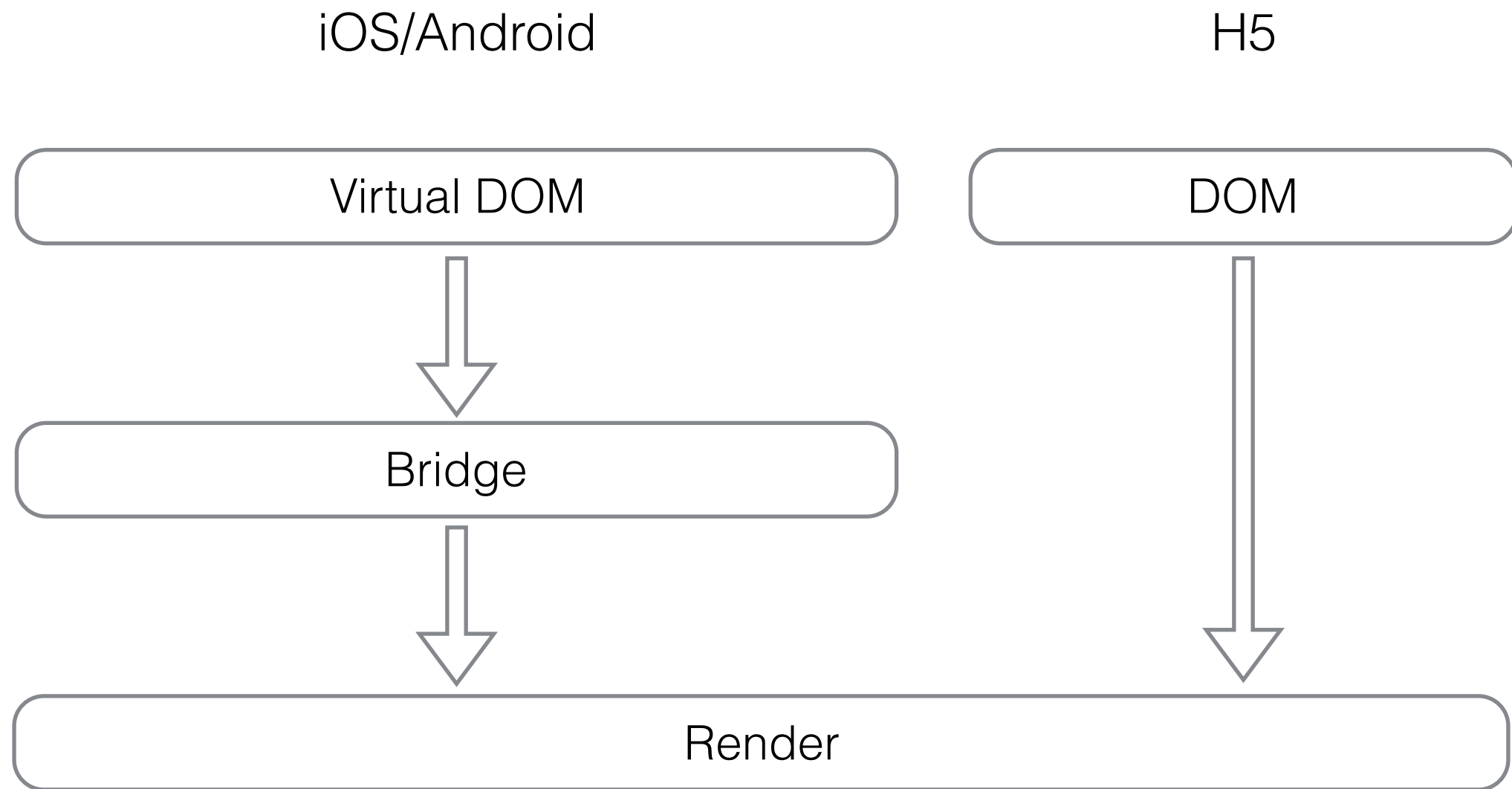


# Virtual DOM





# Virtual DOM



# Diff Algorithm

Watcher



Notify

$O(n \cdot \log n)$

Virtual DOM



optimize

$O(n)$

Render

# Diff Algorithm

```
var a = 1  
a = 2
```

set a       $O(1)$



# Diff Algorithm

```
var list = ['a', 'b', 'c']  
list = ['c', 'a', 'b']
```

Remove 'c'  
Remove 'b'  
Remove 'a'  
add 'c'  
add 'a'  
add 'b'

move 'c' to 0  
move 'a' to 1  
move 'b' to 2

$O(n^2)$    $O(n)$

# Diff Algorithm

```
var a = 1  
var b = 1  
var c = a + b  
a = 2
```

```
set a  
notify c
```

$O(\log n)$

# Diff Algorithm

$$\text{Max}(O(1), O(n)) * O(\log n) = O(n \log n)$$





# Diff Algorithm

if(false)



Block

Remove



Discard

setAttribute

addEvent

appendChild

moveElement

removeChild

# Why ES2015

| ES6 Compatibility |                                |                             |       |      |                       |
|-------------------|--------------------------------|-----------------------------|-------|------|-----------------------|
| 100%              | 74%                            | 98%                         | 99%   | 100% | 93%                   |
| Current browser   | Babel + core-js <sup>[1]</sup> | CH 52, OP 39 <sup>[0]</sup> | SF TP | WK   | Node 6 <sup>[5]</sup> |

<https://kangax.github.io/compat-table/es6/>

# Why NPM Scripts

```
{  
  "name": "gulp-babel",  
  "version": "6.1.2",  
  "dependencies": {  
    "babel-core": "^6.0.2"  
  }  
}
```

```
{  
  "name": "babel-core",  
  "version": "6.9.0"  
}
```

# Why NPM Scripts

myFavoriteModule

gulp-noSuchModule

# Why NPM Scripts

> gulp less

Oops! The css is not working!

# Why NPM Scripts

```
gulp.task('a', () => {...})
```

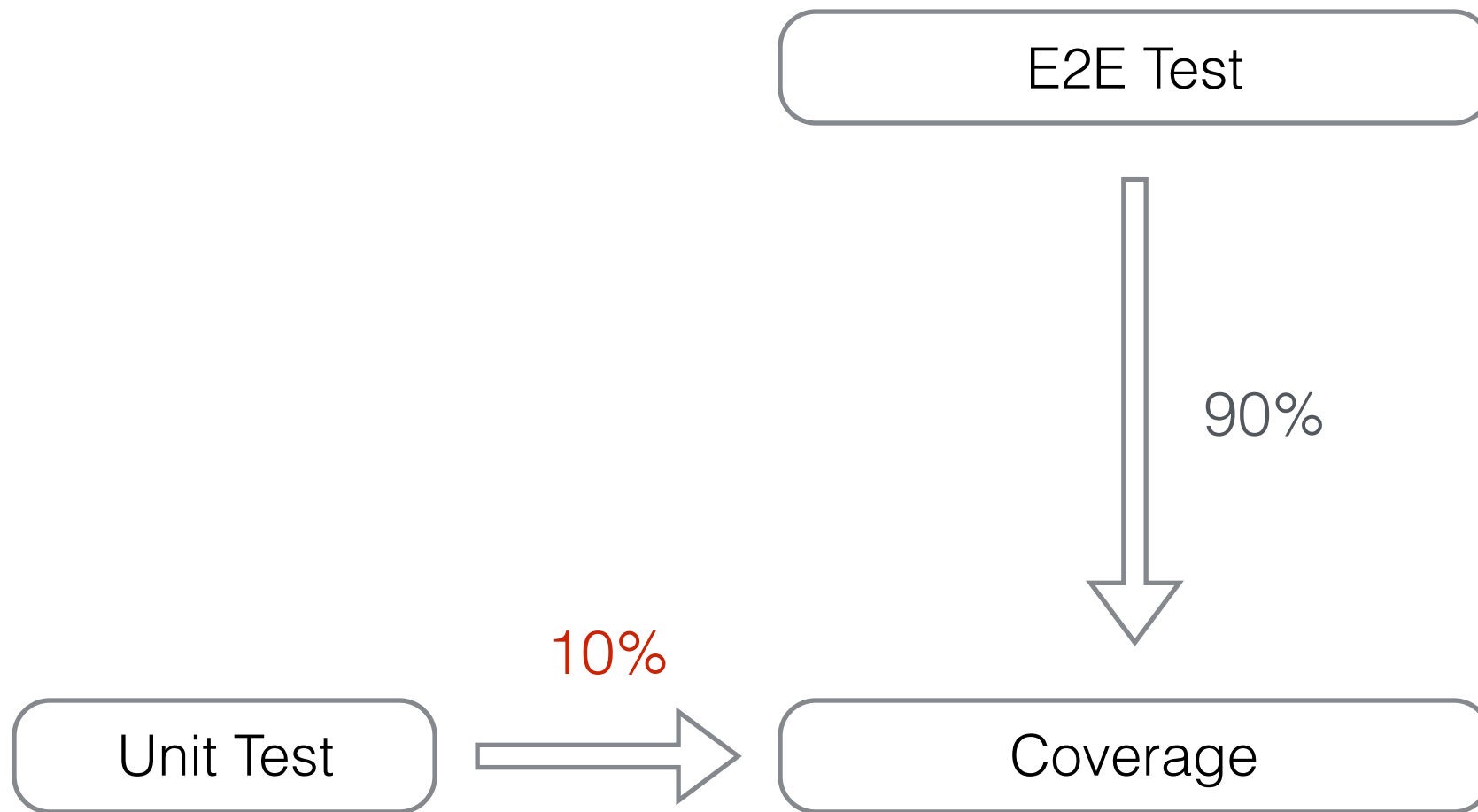
```
gulp.task('b', () => {...})
```

```
gulp.task('c', ['a', 'b'], () => {...})
```

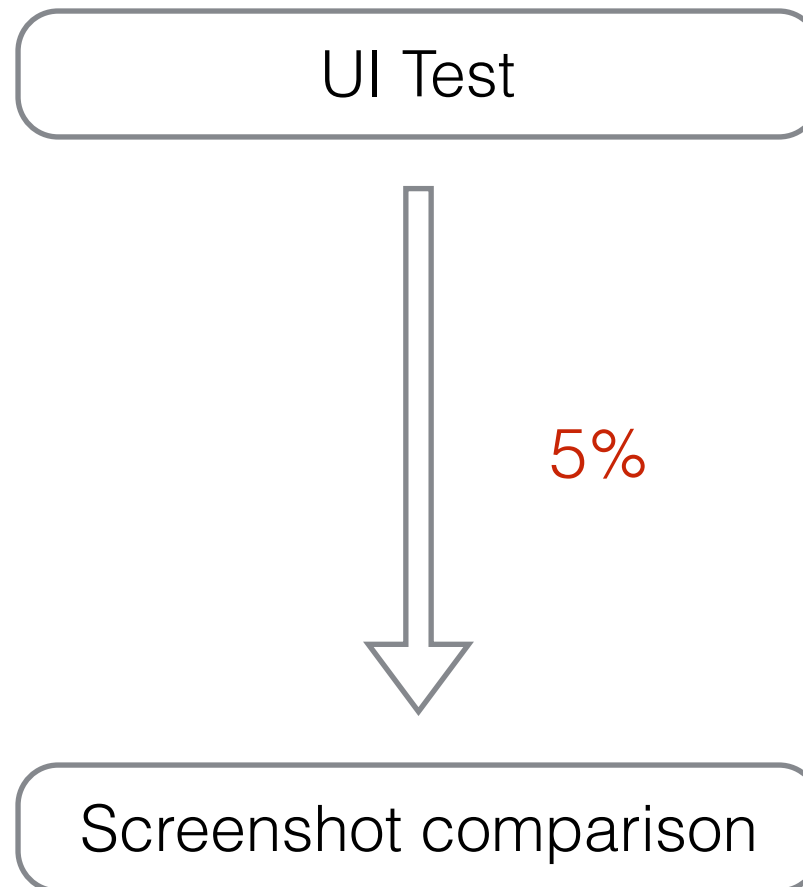
```
gulp.task('b', ['a'], () => {...})
```

```
{  
  "scripts": {  
    "a": "...",  
    "b": "...",  
    "c": "a && b"  
  }  
}
```

# How to Test



# How to Test





# Why OpenSource

“Contribution”

“Q & A”

“Thanks”

<http://alibaba.github.io/weex>