

Things you should know about React Native

Neo @ JSConf China 2017

About Me

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- Github: <https://github.com/nihgwu>
- Backend / Frontend / App
- Ionic -> React Native



whosyourdaddy



I'm your father

A Brief History

- Mar 27, 2015 - Initial public release
- Sep 15, 2015 - React Native for Android



16,777 downloads in the last day

111,129 downloads in the last week

477,962 downloads in the last month

1125 open issues on GitHub

254 open pull requests on GitHub

react-native

6,325 downloads in the last day

35,800 downloads in the last week

148,509 downloads in the last month

95 open issues on GitHub

4 open pull requests on GitHub

ionic-native

Props & Cons

- ~~Hot patch / Hot update~~
- Bring modern web techniques to mobile
- Cross platforms

Props & Cons

- ~~Breaking changes (0.26 / 0.29 / 0.40 / 0.47)~~
- Docs
- Navigation

Keep Improving

- Android performance
- Nodes
- FlatList / SectionList
- yoga, metro-bundler
- Road map, Monthly meeting

Native Animation

Animation in real world



Navigation

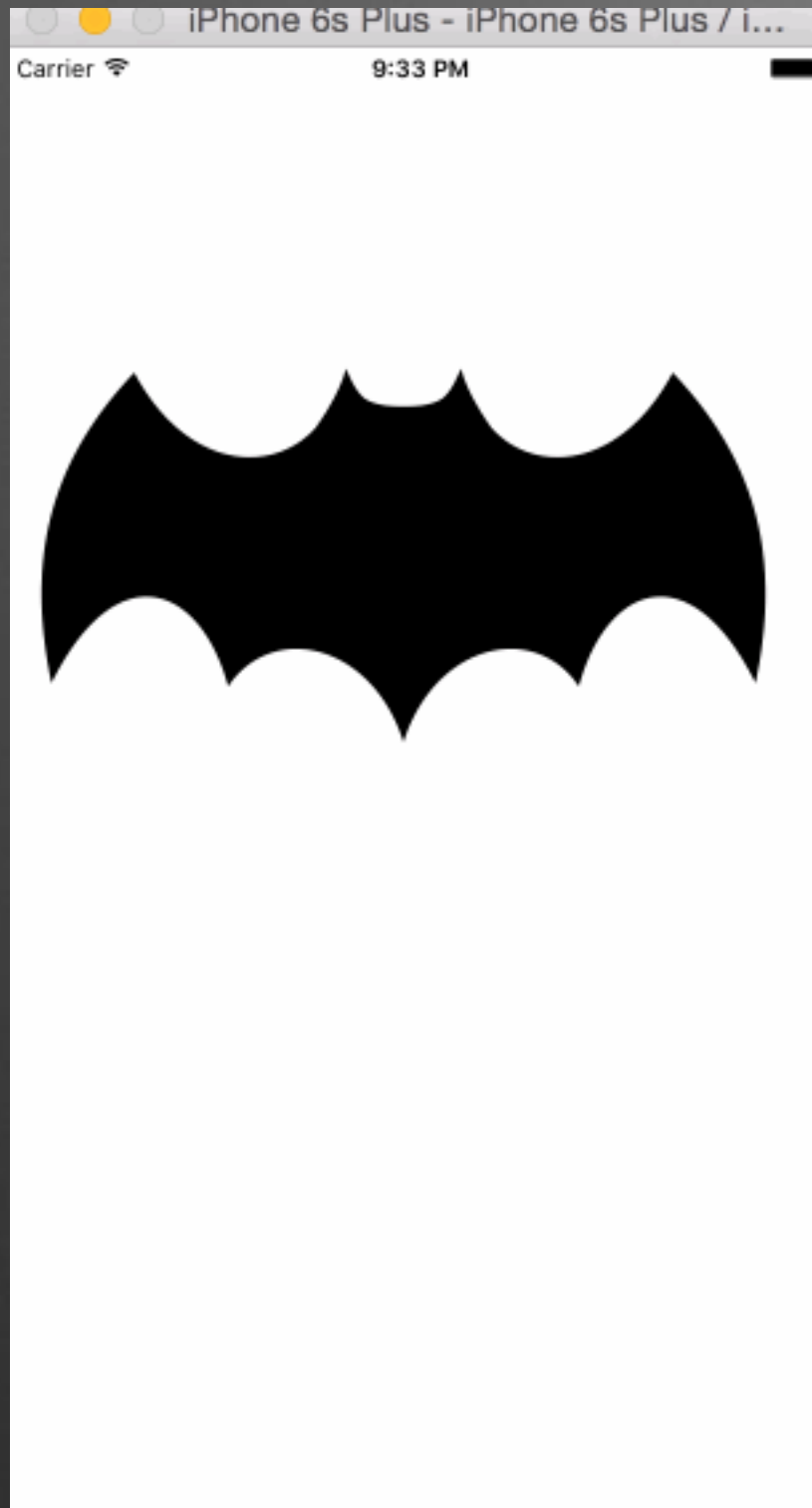


Parallax



Game

requestAnimationFrame + setState

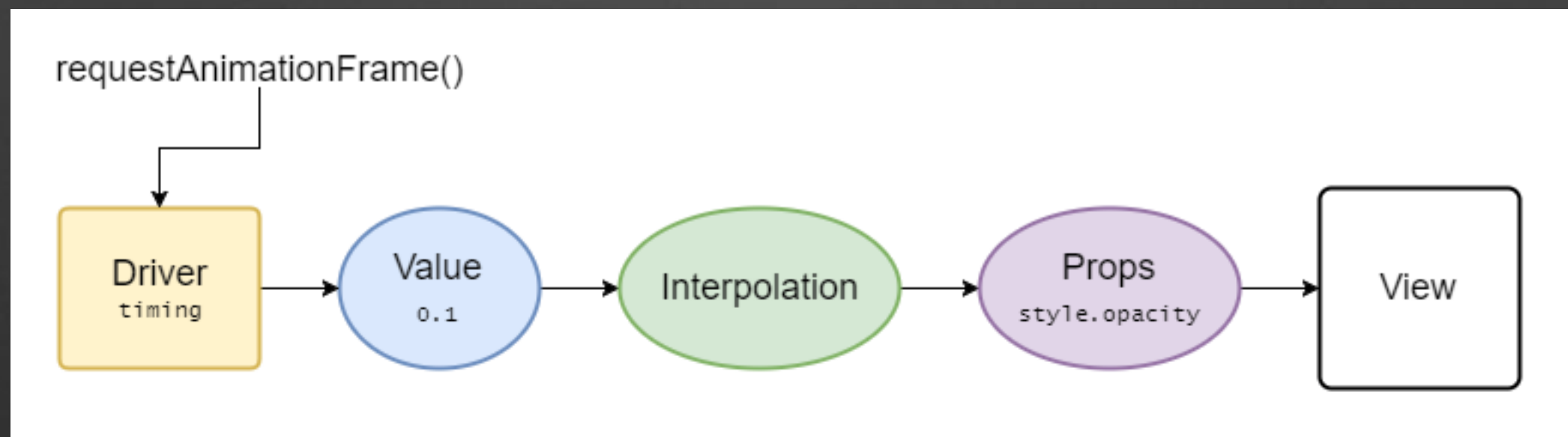


```
1.  componentWillMount: function() {
2.    this._current = 1;
3.  },
4.  componentDidMount: function() {
5.    this.animate(null, this.nextAnimation)
6.  },
7.  nextAnimation: function() {
8.    this._current += 1;
9.    if (this._current >= BatmanLogoPaths.length) return;
10.
11.    this.setState({
12.      transition: Morph.Tween(BatmanLogoPaths[this._current -
13.    1], BatmanLogoPaths[this._current])
14.    }, () => this.animate(null, this.nextAnimation))
15.  },
16.  animate: function(start, cb) {
17.    requestAnimationFrame((timestamp) => {
18.      if (!start) start = timestamp;
19.      var delta = (timestamp - start) / 1000;
20.
21.      if (delta > 1) return cb();
22.
23.      this.state.transition.tween(delta);
24.      this.setState(this.state);
25.      this.animate(start, cb);
26.    })
27.  },
```

Animated

requestAnimationFrame + setNativeProps

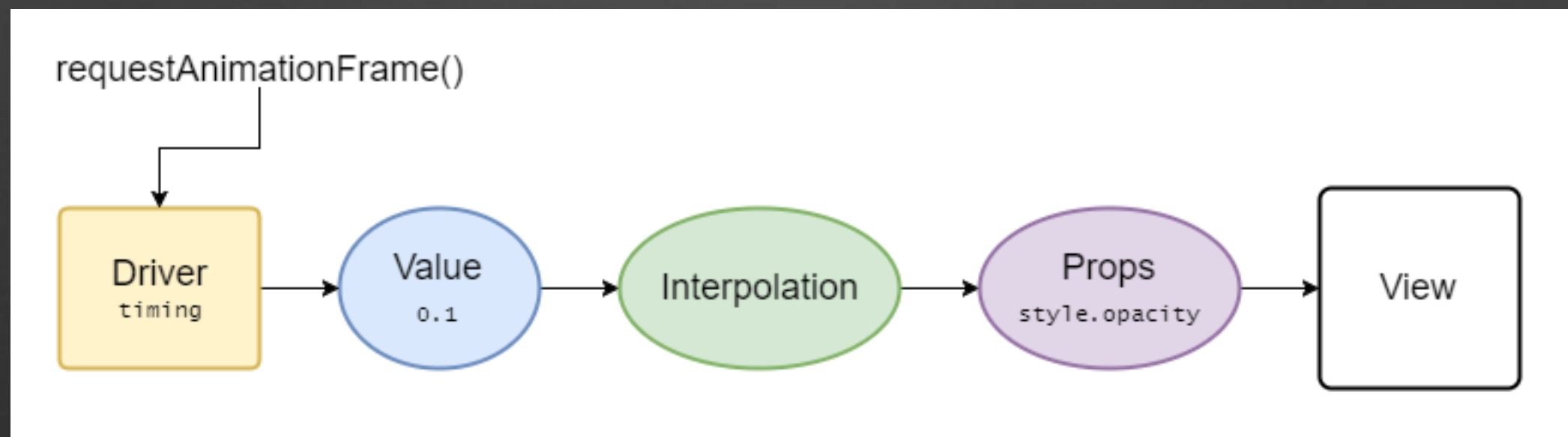
```
this.state.opacity.setValue(0)
Animated.timing(this.state.opacity, {
  toValue,
  duration: 1000,
}).start()
```



Native Animated

~~requestAnimationFrame + setNativeProps~~

```
this.state.opacity.setValue(0)
Animated.timing(this.state.opacity, {
  toValue,
  duration: 1000,
}).start()
```



useNativeDriver: true

```
this.state.opacity.setValue(0)
Animated.timing(this.state.opacity, {
  toValue,
  duration: 1000,
}).start()
```

```
this.state.opacity.setValue(0)
Animated.timing(this.state.opacity, {
  toValue,
  duration: 1000,
  useNativeDriver: true,
}).start()
```

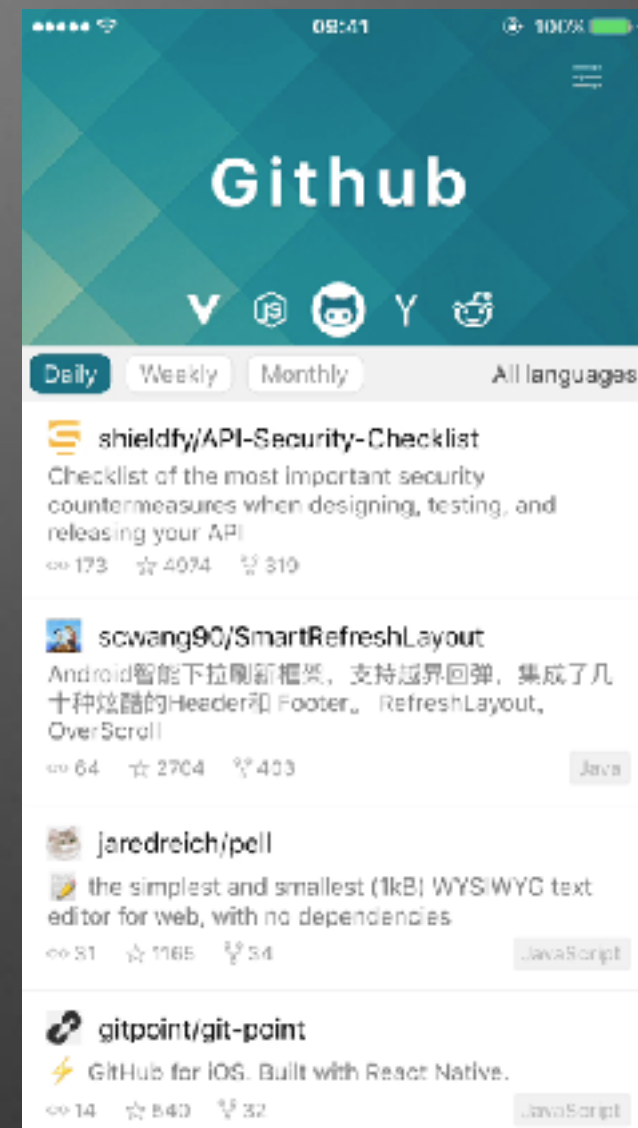
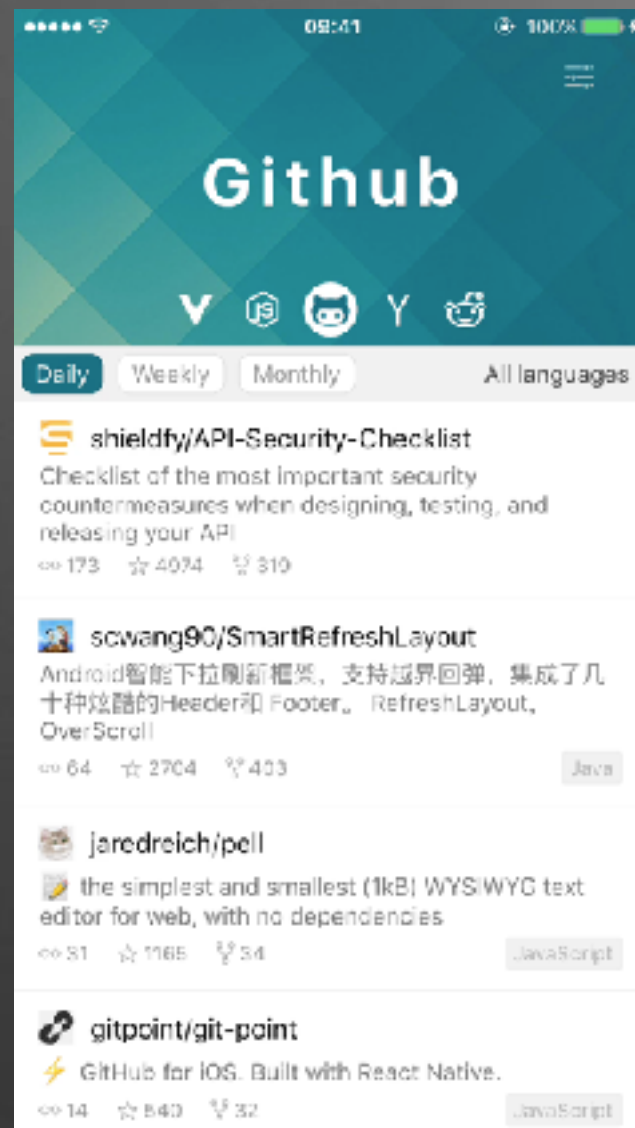


```
onScroll={Animated.event(
  [{ nativeEvent: { contentOffset: { y: this.state.scrollY } } } ]
)}
```

```
onScroll={Animated.event(
  [{ nativeEvent: { contentOffset: { y: this.state.scrollY } } } ],
  { useNativeDriver: true }
)}
```



Any differences?



Limitations

- Only support transform, opacity
- ~~flexbox, position properties~~

Recipes

- layout -> transform
- LayoutAnimation
- ~~runAfterInteractions~~

“Use Native Animated everywhere possible”

Navigation

- Navigator / react-native-custom-components
- NavigationExperimental
- react-navigation (747 issues, 64 prs)
- react-native-flux-router
- native-navigation
- react-native-navigation

Debug

- Chrome Dev Tools
- React Dev Tools
- React Native Debugger

Inspector

Autoselect instances

filter...Commit

v2ex/fetchSuccess+00:00.33

cnode/fetchSuccess+00:00.17

toutico/fetchSuccess+00:00.13

github/updateTab+00:00.15

reddit/fetchSuccess+00:00.01

hackernews/fetchData+00:00.20

app/fetchStart+00:00.00

github/fetchSuccess+00:00.66

hackernews/fetchSuccess+00:00.11

app/fetchEnd+00:00.36

hackernews/fetchSuccess+00:00.02

Action

TreeChartRaw

type (pin): "hackernews/fetchSuccess"

▼ payload (pin)

▶ data (pin): [{...}, {...}, {...}, {...}, ...]

▶ list (pin): [14664104, 14660998, 14659775, 14662892, ...]

page (pin): 1

▶◀1x▼

Pause recording

Lock changes

Dispatcher

Slider

Import

Export

Print

⚙️

☐ Highlight Updates☐ Highlight Search

Connect

▼<Connect(HackerNewsList) key="hackernews" index=5 anim=AnimatedValue{...} refreshControl=null...>

▼<HackerNewsList index=5 anim=AnimatedValue{...} refreshControl=null...>

▼<List ref=ref() title="Hacker News" icon=6 index=5...>

▼<AnimatedComponent ref="listView" showsVerticalScrollIndicator=false automaticallyAdjustContentInsets=false scrollEventThrottles=...

▼<ListView ref=bound _setComponentRef() showsVerticalScrollIndicator=false automaticallyAdjustContentInsets=false scrollEventThrottles=...

▼<ScrollView ref=bound _setScrollComponentRef() showsVerticalScrollIndicator=false automaticallyAdjustContentInsets=false scrollEventThrottles=...

▼<RCTScrollView ref=bound _setScrollViewRef() showsVerticalScrollIndicator=false automaticallyAdjustContentInsets=false scrollEventThrottles=...

▶<RCTScrollContentView ref=bound _setInnerViewRef() onLayout=bound _handleContentOnLayout() style=[null, null] removeClippingSubviews=...

</RCTScrollContentView>

</ScrollView>

</ListView>

</AnimatedComponent>

</List>

</HackerNewsList>

Ref bound _setScrollViewRef()

Props read-only

alwaysBounceVertical: true

automaticallyAdjustContentInsets: true

children: [...]

collapsible: false

contentInset: [...]

data: Array[10]

dataSource: ListViewDataSource

dispatch: fn()

enableEmptySections: true

fetching: false

icon: 6

index: 5

initialListSize: 10

list: Array[36]

AppContainerViewRCTViewViewRCTViewUnknownProviderConnect(Router)RouterNavigationContainerNavigatorUnknown

CardStackTransitionerTransitionerViewRCTViewCardStackViewRCTViewViewRCTViewContainerCardAnimatedComponentView

RCTViewSceneViewNavigationContainerNavigatorUnknownCardStackTransitionerTransitionerViewRCTViewCardStackViewRCTView

Network Inspector

```
if (__DEV__) {  
  global.XMLHttpRequest = global.originalXMLHttpRequest  
    ? global.originalXMLHttpRequest  
    : global.XMLHttpRequest  
  global.FormData = global.originalFormData  
    ? global.originalFormData  
    : global.FormData  
}
```

React Native Debugger - Connected (port 8081)

Elements Console Sources Network Performance Memory Application Security Audits

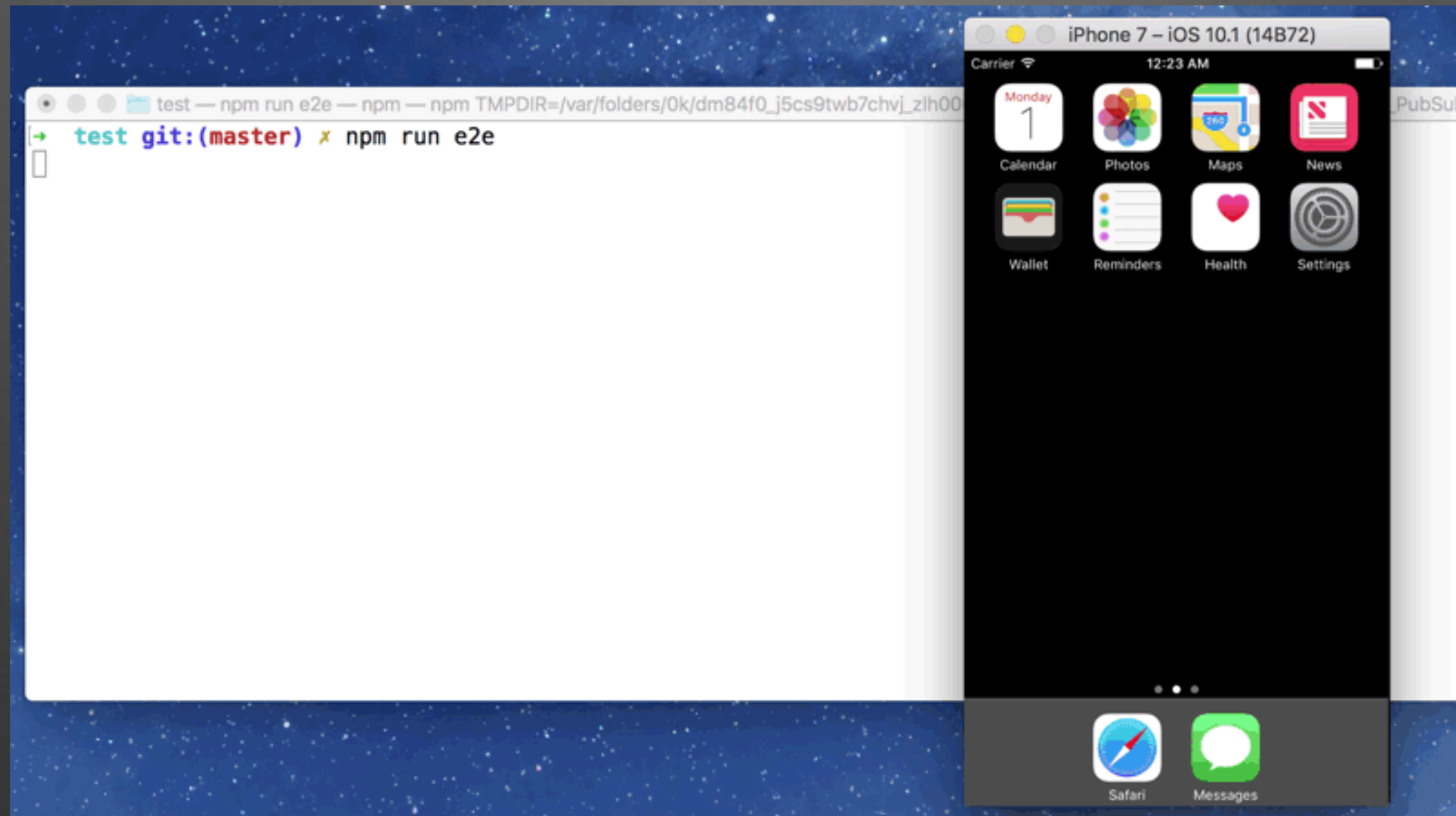
View: [Icons] [] Preserve log [x] Disable cache [] Offline No throttling

Filter [] Regex [] Hide data URIs All [x] HTML JS CSS Img Media Font Doc WS Manifest Other

500ms 1000ms 1600ms 2000ms 2600ms 3000ms 3600ms 4000ms 4600ms

Name	Headers	Preview	Response	Timing
☐ askstories.json				
☒ 14664104.json		<pre>{by: "tixocloud", descendants: 0, id: 14664104, score: 3,...} by: "tixocloud" descendants: 0 id: 14664104 score: 3 text: "Just wanted to learn more about the complexities of being a Airbnb host." time: 1498750450 title: "Ask HN: Who's an Airbnb host?" type: "story"</pre>		
☐ 14660998.json				
☐ 14659775.json				
☐ 14662892.json				
☐ 14652936.json				
☐ 14662993.json				
☐ 14660895.json				
☐ 14653564.json				
☐ 14651665.json				
☐ 14658633.json				

Visual Testing



<https://github.com/wix/detox>

State Management

- Built-in state
- Redux
- Mobx
- Mobx State Tree
- dva

Tips

- Always use the latest version
- Don't use any ui frameworks
- F8app is not for beginners

Open source Apps

- Guoqi <https://github.com/yuche/gouqi>
- Psnine <https://github.com/smallpath/psnine>
- iShiWuPai <https://github.com/ljunb/react-native-iShiWuPai>

Resources

- Official site
- Source code
- JS.Coach
- Awesome list

Thanks