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Weex
移动端高性能动态化方案

@鬼道 @勾股

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weex Docs Showcase Download AliBaichuan Apply for access

weex

A framework for building Mobile cross-platform UI

截止今天中午

申请内测用户突破 1400+

Lightweight

low footprint , simple syntax , and easy to use

Extendable

abundant build-in components , extendable apis , various events

High Performance

load fast , render fast , better experience

移动端开发的未来

https://www.pexels.com/photo/fashion-person-woman-hand-4970/

性能与动态性兼得

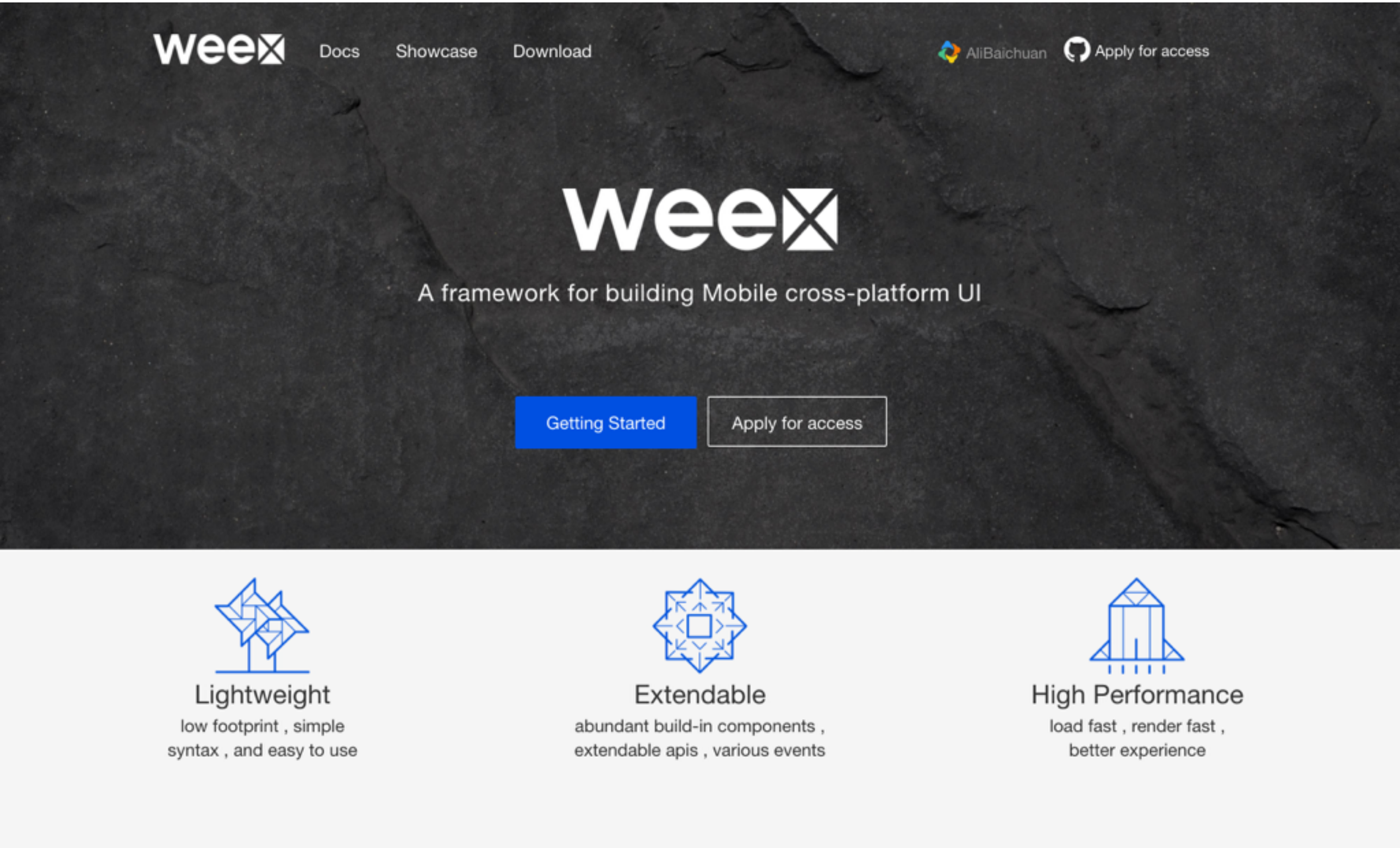
http://www.slideshare.net/appcelerator/appcelerator-html5-prezfinal

开放互联

1. 基于更加大众化的技术体系
2. 没有平台之间的隔阂
3. 简单、直接、易用

https://www.flickr.com/photos/kbaranowski/12891634553/

基于这些设想.....


weex
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weex
A framework for building Mobile cross-platform UI
Getting Started
Apply for access
Lightweight
low footprint , simple syntax , and easy to use
Extendable
abundant build-in components , extendable apis , various events
High Performance
load fast , render fast , better experience

alibaba.github.io/weex/demo.html

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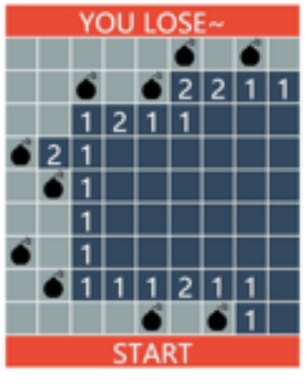
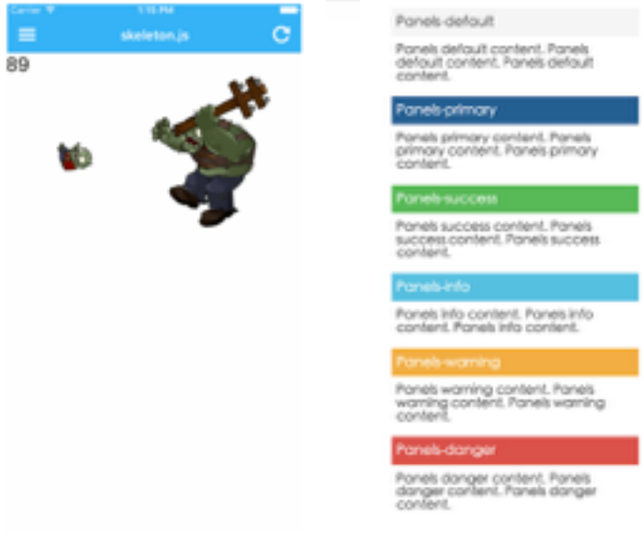
Showcase

Our Showcase are a good starting point for exploring Weex capabilities.

不只是双十一主会场...

http://alibaba.github.io/weex/demo.html

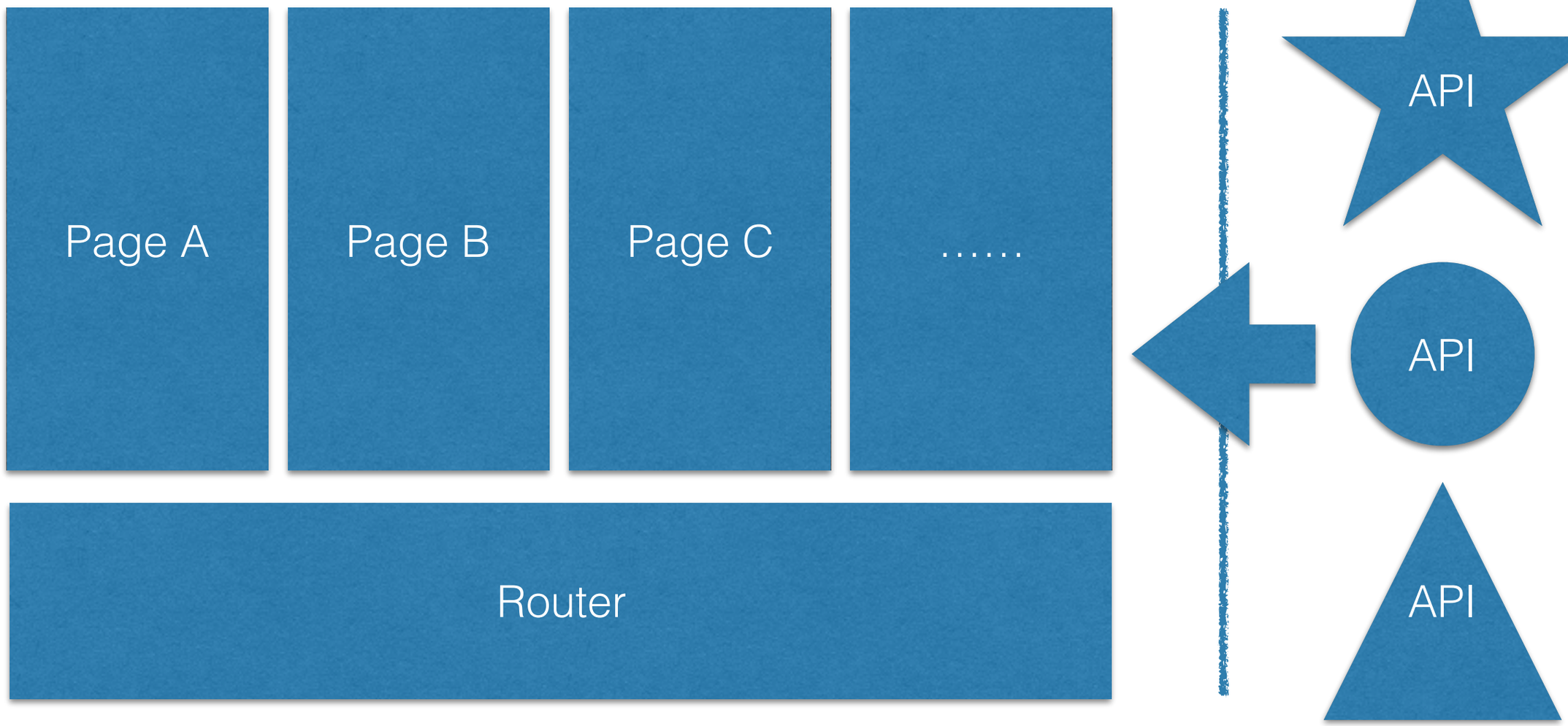




回到移动端开发模型

https://www.pexels.com/photo/fashion-person-woman-hand-4970/

Weex 移动端研发模型
pages + router + features



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Weex Page

通过撰写 HTML/CSS/JavaScript 渲染出 Native 级别的页面

inspired from:

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Twitter, Inc. [US] https://twitter.com/zhaojinjiang/status/723085832299520000

Jinjiang
@zhaojinjiang

We are very proud to introduce Weex - build
oss-native UI with @vuejs like syntax
baba.github.io/weex

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@vuejs like syntax alibaba.github.io/weex pic.twitte

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Enrico Cerroni @enricocerroni · 9h
@zhaojinjiang @vuejs Finally Vue Native! :) Kudos to

Jérém and 11 others followed you

Zahir Gudiño @zgudino · 12h
Freakin' awesome! 😃

> **Jinjiang** @zhaojinjiang
> We are very proud to introduce Weex - build cross
> @vuejs like syntax alibaba.github.io/weex

kazuya kawaguchi added you to list **kazu_pon/ge**

Anish Dcruz @anishdcruz1 · 16h
@zhaojinjiang @vuejs can't wait to try!

RETWEETS 22 LIKES 46

2:47 AM - 21 Apr 2016

Live Demo

https://www.flickr.com/photos/eugeniaofthewasps/6712475025/

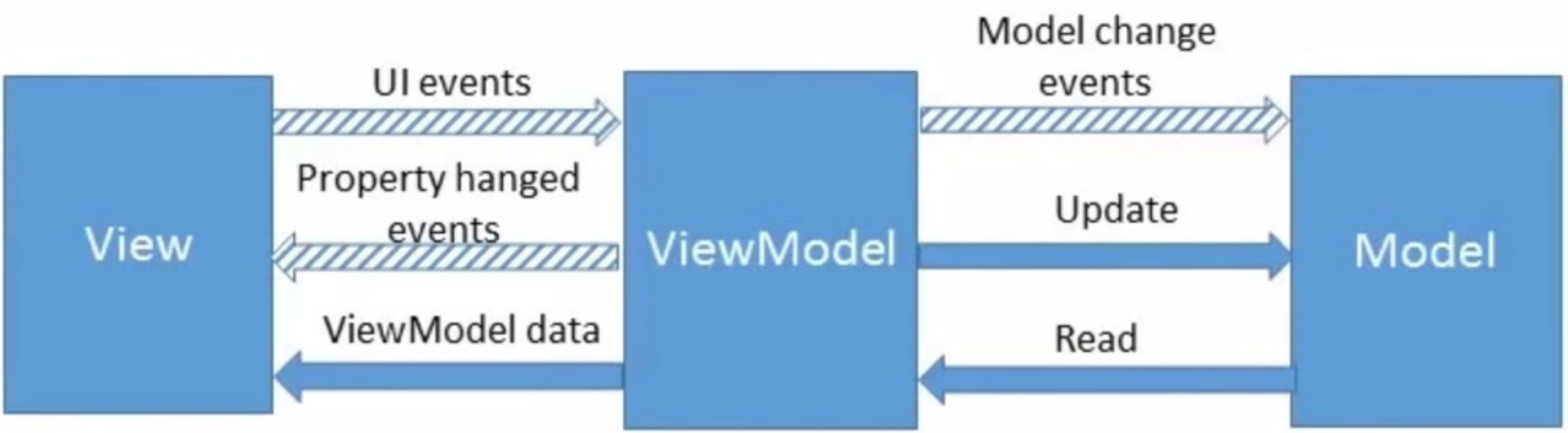
基本概念回顾

如何撰写一个组件

1. 一段 <template>
2. 一段 <style>
3. 一段 <script>

他们分别表示

1. 一段 <template>：界面结构
2. 一段 <style>：样式细节
3. 一段 <script>：行为定义



https://habrahabr.ru/company/dataart/blog/272737/

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如何组织页面代码

1. 从整体进行组件化分离
2. 定义每个组件
3. 把组件有机组合起来

https://www.flickr.com/photos/tareqworx/16047593308/

关键语法简述

<template> 视图结构

```
<template>
  <div class="wrapper" onclick="update">
    <text style="font-size: 48px;">Hello {{who}}!</text>
  </div>
</template>
```

1. Virtual DOM tree
2. tag name, attributes, children
    1. style="..."
    2. class="..."
    3. event="..."
3. data binding

<style> 视图样式整理

```
<style>
   .wrapper {align-items: center;}
</style>
```

1. single-class selector only：解析性能较高

2. scoped：当前组件内有效

特殊的 attributes： if/repeat

```
<template>
  <div>
    <text repeat="{{list}}" if="{{value % 2}}">
      {{value}}
    </text>
  </div>
</template>
```

展示三段文本：1、3、5

```
<script>
  module.exports = {
    data: function () {
      return {
        list: [
          {value: 1},
          {value: 2},
          {value: 3},
          {value: 4},
          {value: 5}
        ]
      }
    }
  }
</script>
```

特殊的 attributes： append

```
<template>
  <div>
    <image ...></image>
    <text>...</text>
  </div>
  <div append="tree">
    <image ...></image>
    <text>...</text>
  </div>
  <div append="node">
    <image ...></image>
    <text>...</text>
  </div>
</template>
```

append="tree|node" 控制渲染节奏

- node：最小化结点逐个渲染
- tree：整颗树一起渲染

特殊的 attributes： id

```
<template>
  <scroller>
    <text id="top" style="margin-bottom: 2000;">Hello, World!</text>
    <text onclick="gotoTop">Goto top</text>
  </scroller>
</template>

<script>
  var dom = require('@weex-module/dom')
  module.exports = {
    methods: {
      gotoTop: function () {
        var top = this.$el('top')
        dom.scrollToElement(top, {offset: 0})
      }
    }
  }
</script>
```

可以通过 this.$el(id)
找到相应的 DOM 结点
(scoped in component)

已经支持的组件

1.
2. <scroller>
3. <list> & <cell>
4. <text>
5. <image>
6. <slider>
7. <input> (experimental)

业务方可在上层横向扩展

已经支持的样式

1. 布局： box model & flexbox

2. 布局： position: relative | absolute | fixed | sticky

3. 通用样式： opacity & background-color & ……

4. 针对不同类型组件有各自的样式设计

已经支持的事件

1. click
2. appear
3. disappear
4. change

针对不同类型组件有各自的特殊事件

<script> 组件行为定义

```
<script>
  module.exports = {
    data: function () {
      return {x: 1, y: 2, ...}
    },
    methods: {
      foo: function () {return this.x + this.y},
      bar: function (a, b, c) {...},
      ...
    }
  }
</script>
```

- 一系列 ViewModel options
- 最终赋值给 module.exports

生命周期

1. init - at beginning of the constructor
2. created - data observed
3. ready - virtual dom compiled

原生 API

```
<template>
  <scroller>
    <text onclick="sayHello">Say Hello!</text>
  </scroller>
</template>
```

```
<script>
  var modal = require('@weex-module/modal')
  module.exports = {
    methods: {
      toast: function () {
        var message = 'Hello Weex!'
        modal.toast({message: message, duration: 2})
      }
    }
  }
</script>
```

组件化搭建复杂页面

1.组件之间依赖

2.组件数据传递

3.组件通信

组件依赖和嵌套：

自动在同目录下寻找同名文件

数据传递：

通过给子组件设置attributes

```
<!-- foo.we -->
<template>
  ...
</template>
<script>
  module.exports = {
    data: function () {
      return {a, b, ...}
    }
  }
</script>
```

```
<!-- main.we -->
<template>
  <foo a="1" b="{{x}}"></foo>
</template>
<script>
  module.exports = {
    data: function () {
      return {x, y, ...}
    }
  }
</script>
```

组件通信

组件通信 - 监听

1. this.$on(type, handler)

2. this.$off(type, handler)

组件通信 - 触发

1. this.$emit(type, detail)

2. this.$dispatch(type, detail)

3. this.$broadcast(type, detail)

Future to Ship

1. Key Features: Form, Animation, Gesture, …
2. More Resources
3. More Tools
4. Better Dev Experience

More docs/samples/playground-app：

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

How it works

https://www.pexels.com/photo/watch-gears-technic-technical-8180/

DSL
（HTML/JS/CSS）

↓

Virtual DOM

↓

iOS RenderEngine	Android RenderEngine	H5 RenderEngine
iOS UI	Android UI	H5 UI

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Server

Weex File

transformer

JS Bundle

deploy

Server

JS

JS Framework

JSCore / V8

JS-Native Bridge

callJs callNative

iOS RenderEngine

Android RenderEngine

H5 RenderEngine

Client

```
<template>
  <div class="hello" onclick="clickHandler">
    <text>{{message0}}</text>
    <text>{{message1}}</text>
  </div>
</template>

<style>
  .hello {
    flex-direction: row;
  }
</style>

<script>
  module.exports = {
    data: {
      message0: 'Hello',
      message1: ' World.'
    },
    methods: {
      clickHandler: function() {}
    }
  }
</script>
```

DSL

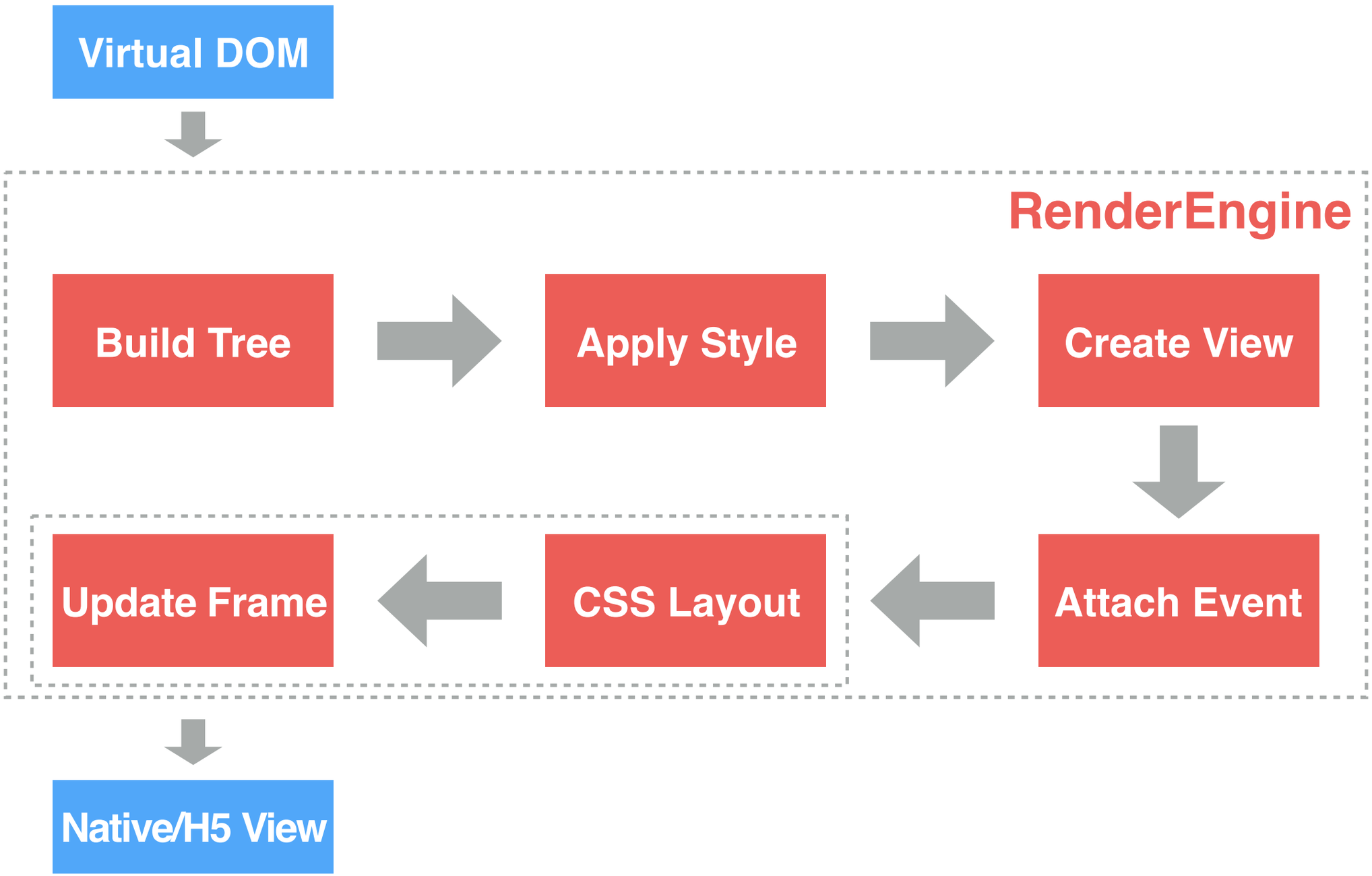
```
module.exports.template = {
  "type": "div",
  "classList": [
    "hello"
  ],
  "events": {
    "click": "clickHandler"
  },
  "children": [
    {"type": "text"...},
    {"type": "text"...}
  ]
};

module.exports.style = {
  "hello": {
    "flexDirection": "row"
  }
};

module.exports = {
  data: function() {
    return {
      message0: 'Hello',
      message1: ' World.'
    }
  },
  methods: {
    clickHandler: function() {}
  }
};
```

JS-Bundle

RenderEngine



Architecture

1. **Performance**
2. **Compatibility**
3. **Extensibility**
4. **Usability**

Performance

https://www.flickr.com/photos/kitchou/14957050761/

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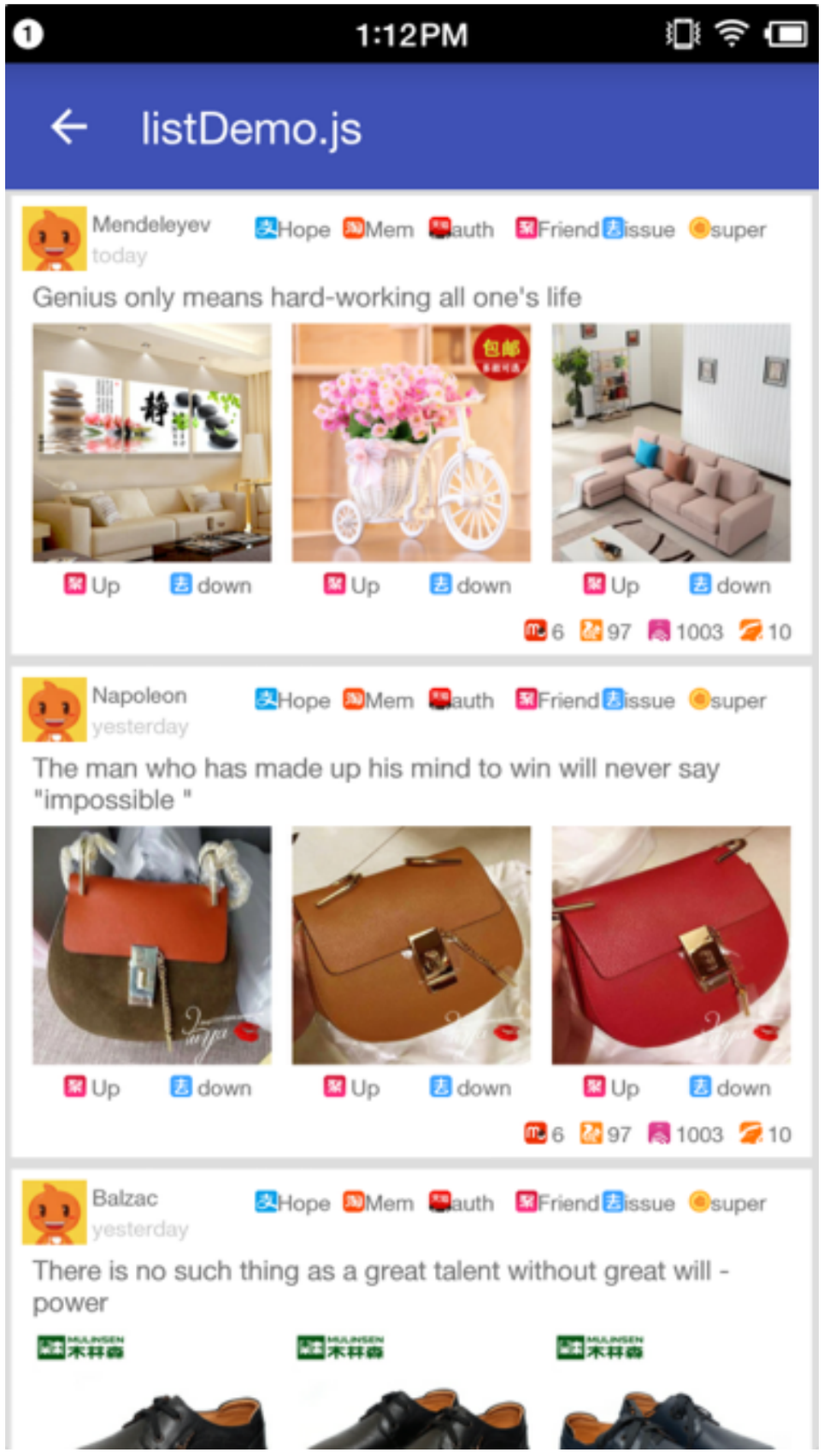
Benchmark



3000 nodes

10 screens

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Performance

		Weex (List)	RN (List)	Weex (Scroller)	RN (Scroller)
Gradually Render	Load	1325ms	1656ms	1381ms	1833ms
	FPS	55.45	56.55	59.09	59.06
RecycleView	Memory	99.78M	108.43M	93.45M	106.83M
Ondemand Call	CPU (backend)	0%	6%	0%	7%
	CPU (max)	26%	34%	25%	36%

in Nexus 5

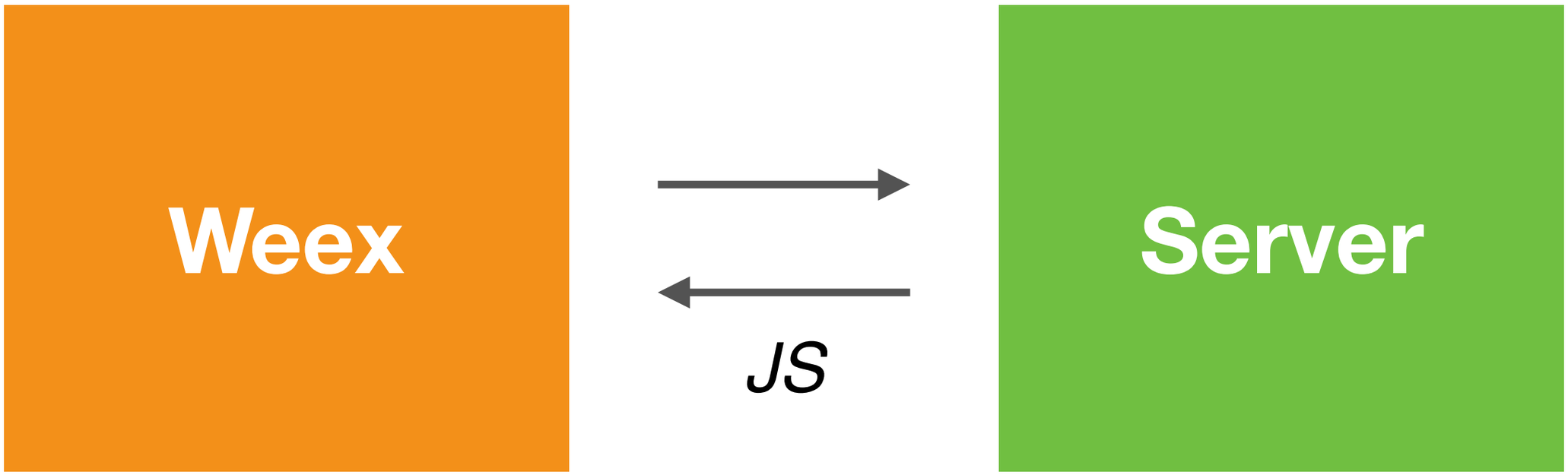
FPS

CPU / 内存 / FPS

平台	机型	CPU	CPU 静默	内存	内存静默	FPS
Android	小米 2s	峰值 < 50%	< 1%	增长 6M，增长率 33%	20M 稳定	平均 > 55
H5	三星 S5	峰值 < 50%	< 1%	增长 6M，增长率 9%	20M 稳定	平均 40

An activity in 2016.03

Network



Network

Compatibility

https://www.flickr.com/photos/connorlucock/6684367139/

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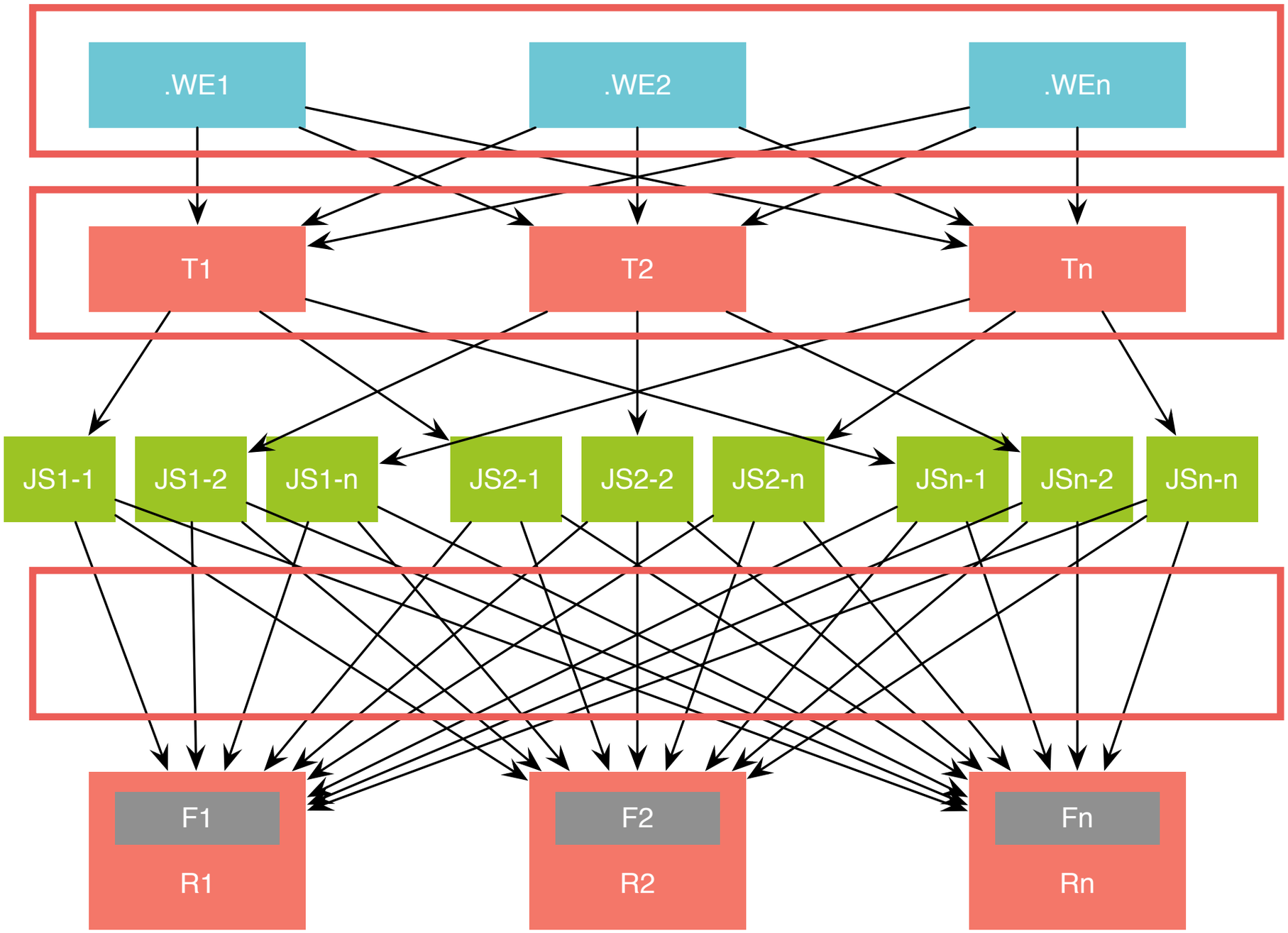
Nightmare



n^3

Solution

1. **Unit Test**
    1. JSFM Unit Test env: node -> JSCore/V8
    2. Native Unit
2. **UI Automation**
    1. Snapshots comparing
    2. Layout results

Extensibility

https://www.flickr.com/photos/qurishu/9344877580/

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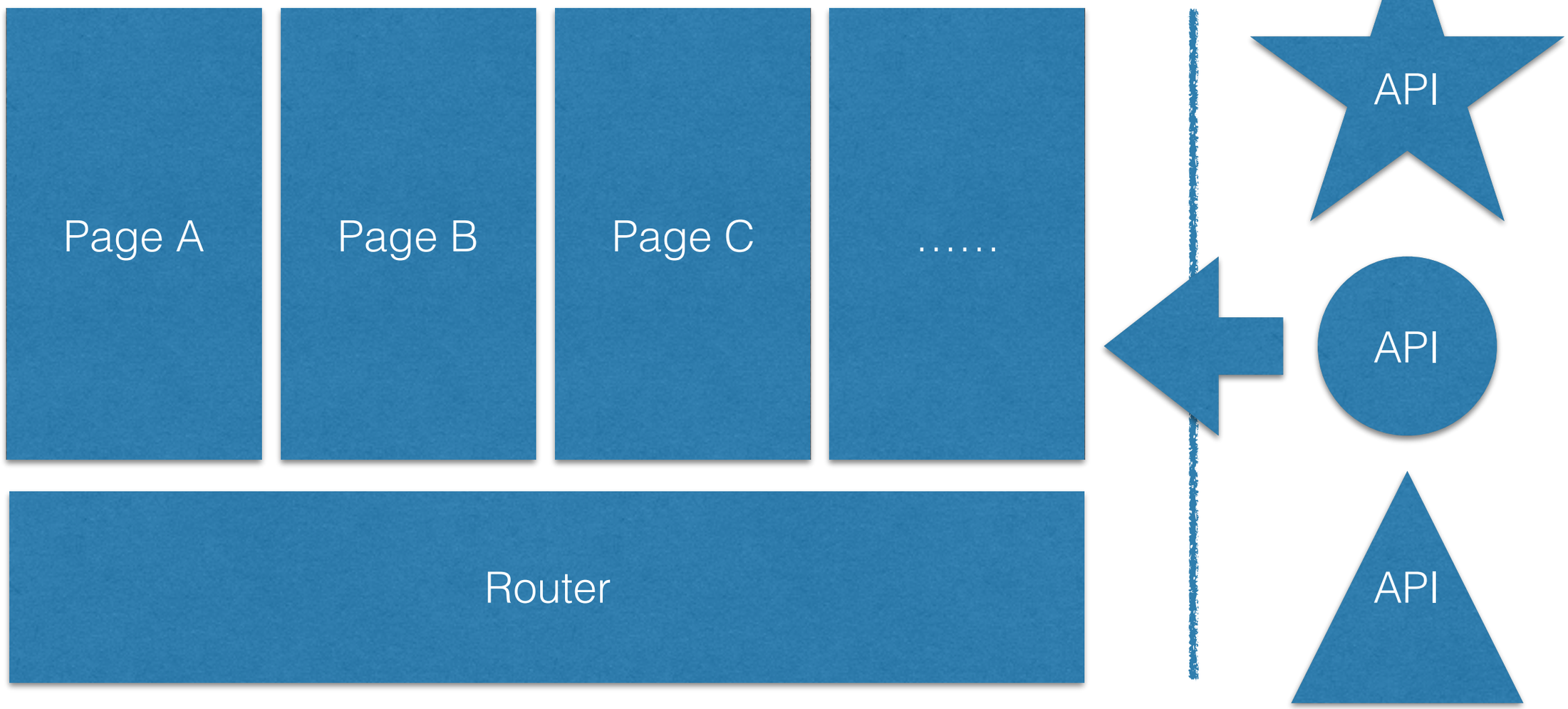
Extensibility

pages + router + features



Component

```
public class MyViewComponent extends WXComponent{
public MyViewComponent(WXSDKInstance instance, WXDomObject dom,
                    WXVContainer parent, String instanceId, boolean isLazy)
 {
 public MyViewComponent(WXSDKInstance instance, WXDomObject dom,
   WXVContainer parent, String instanceId, boolean isLazy) {
  super(instance, dom, parent, instanceId, isLazy);
 }

 @Override
 protected void initView() {
    mHost = new TextView(mContext);
 }
 @WXComponentProp(name=WXDomPropConstant.WX_ATTR_VALUE)
 public void setMyViewValue(String value) {
    ((TextView)mHost).setText(value);
 }
}
```

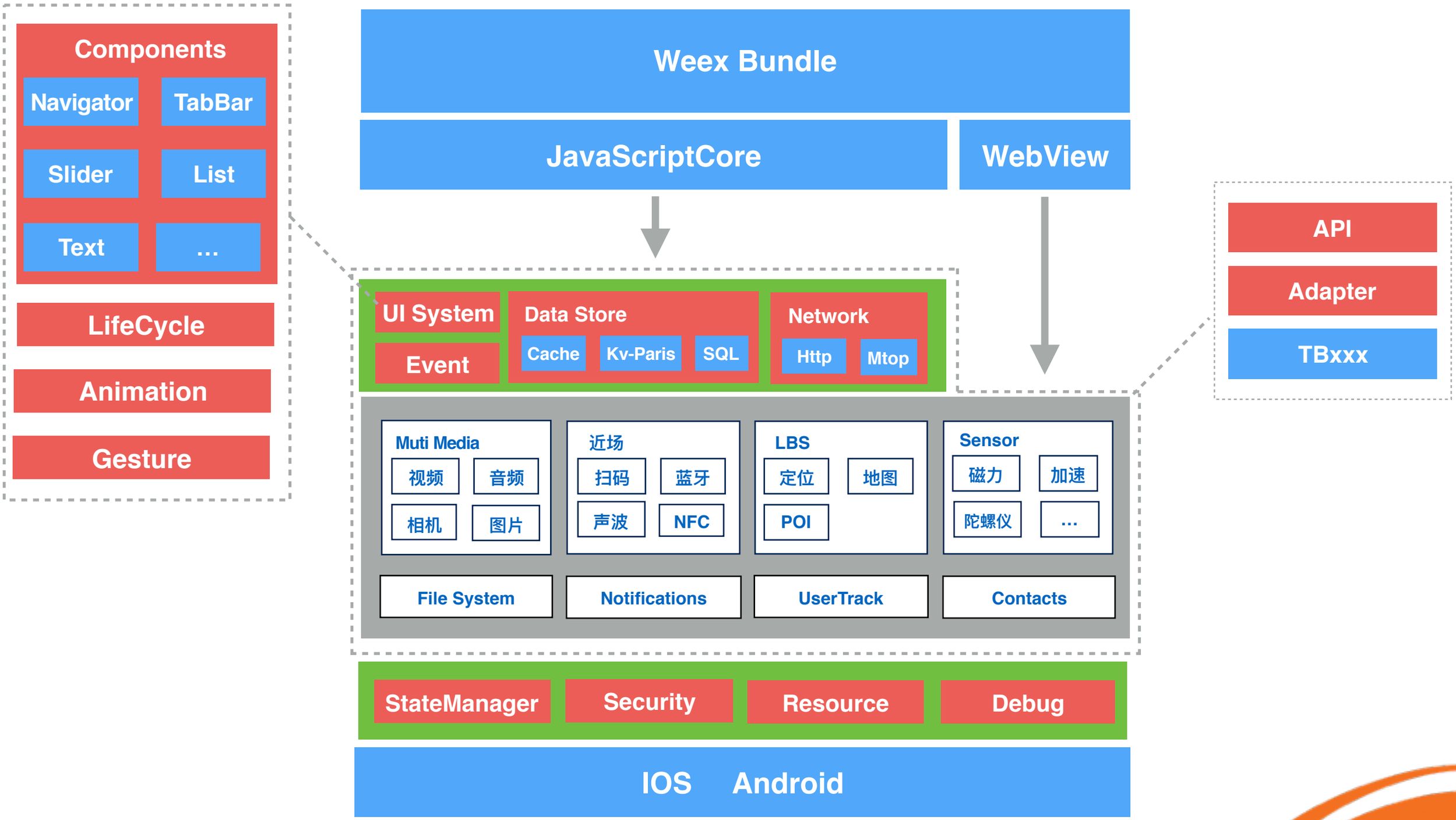
Module

```
public class WXEventModule extends WXModule{


private static final String WEEX_CATEGORY="com.taobao.android.intent.category.WEEX";


@WXModuleAnno
public void openURL(String url){
    if (TextUtils.isEmpty(url)) {
        return;
    }
    StringBuilder builder=new StringBuilder("http:");
    builder.append(url);
    Uri uri = Uri.parse(builder.toString());
    Intent intent = new Intent(Intent.ACTION_VIEW, uri);
    intent.addCategory(WEEX_CATEGORY);
    mWXSDKInstance.getContext().startActivity(intent);
   }
}
```

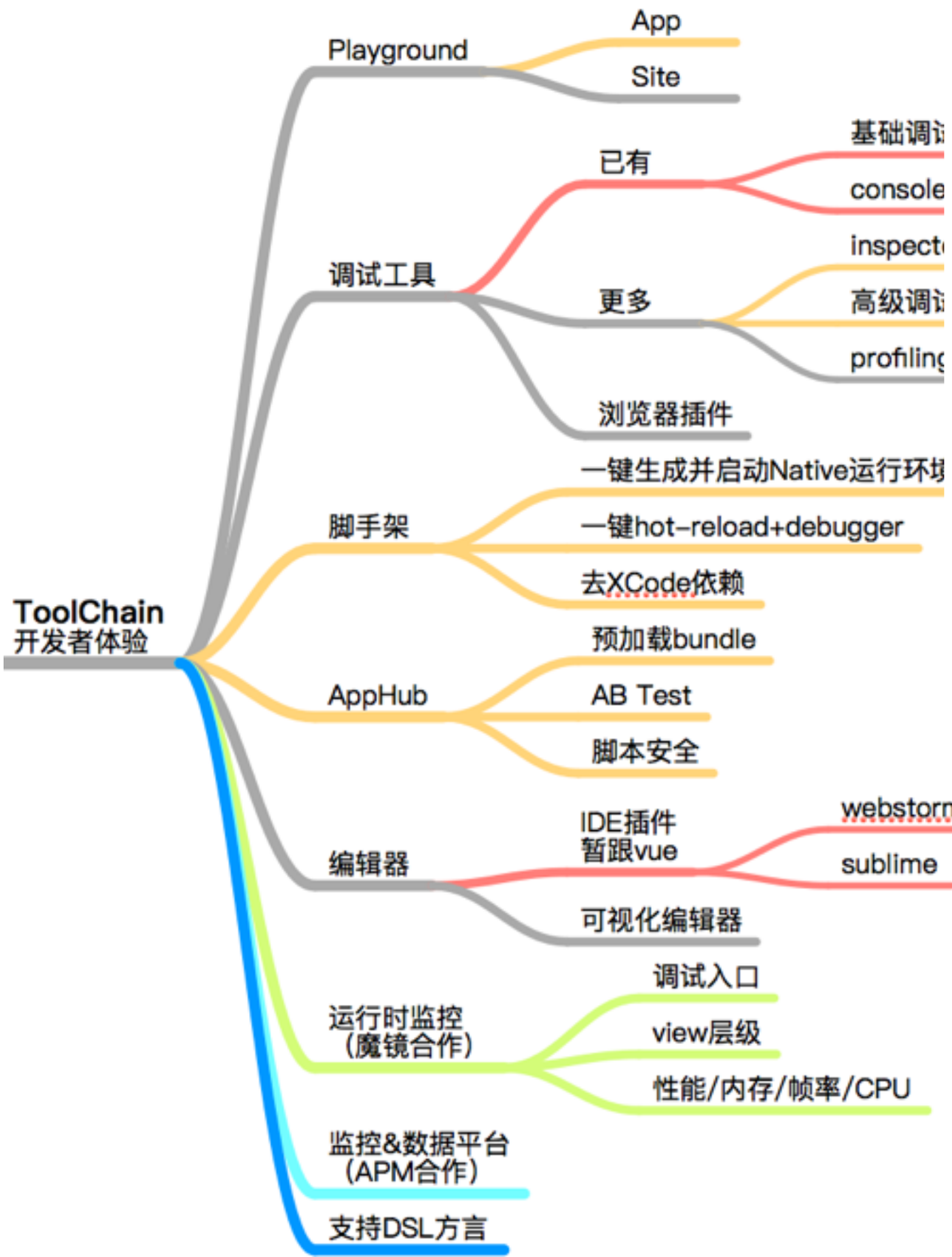
App Framework



Usability

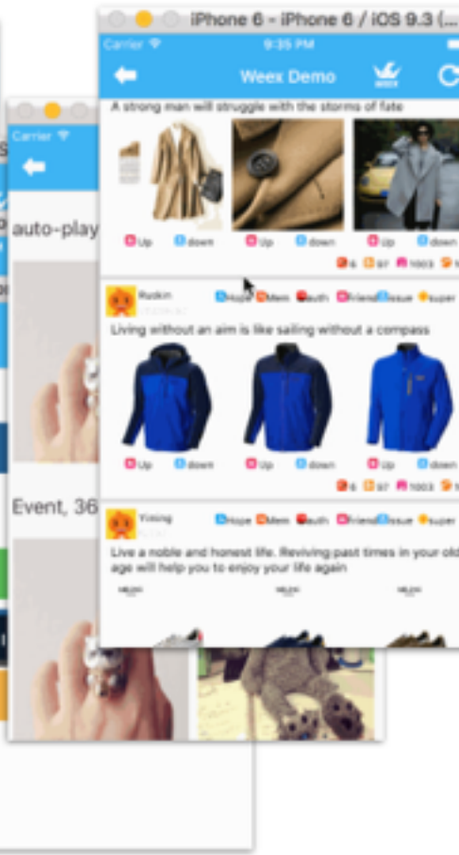
https://www.pexels.com/photo/macbook-pro-macbook-computer-programming-60626/

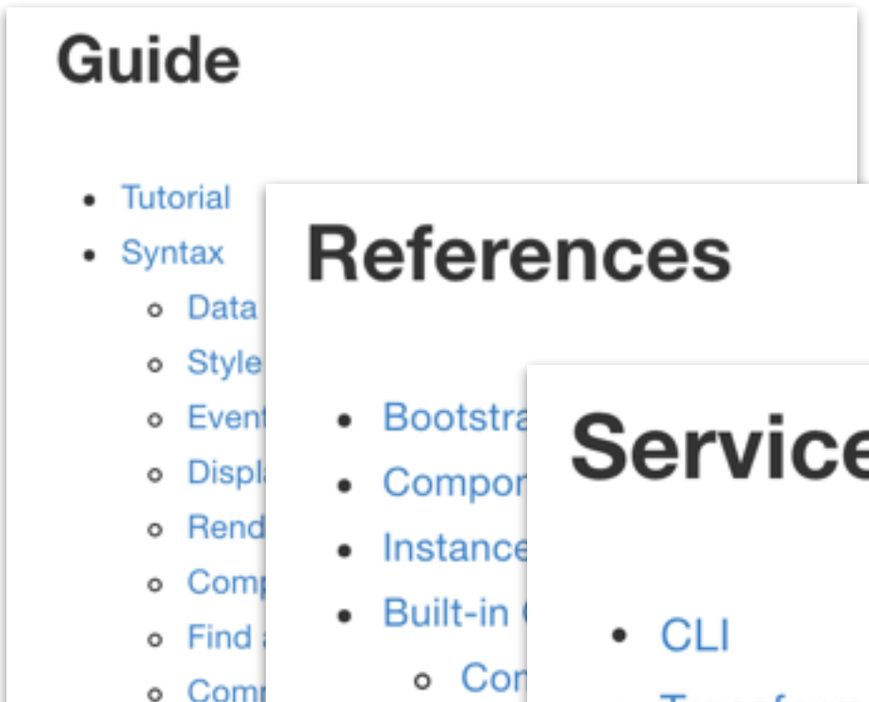
Usability


ToolChain
开发者体验
Playground
App
Site
调试工具
已有
基础调试
console
更多
inspect
高级调试
profiling
浏览器插件
脚手架
一键生成并启动Native运行环境
一键hot-reload+debugger
去XCode依赖
AppHub
预加载bundle
AB Test
脚本安全
编辑器
IDE插件
暂跟vue
webstorm
sublime
可视化编辑器
运行时监控
（魔镜合作）
调试入口
view层级
性能/内存/帧率/CPU
监控&数据平台
（APM合作）
支持DSL方言


iPhone 6 - iPhone 6 / iOS 9.3 (...
Weex Demo
Buttons
default
primary
success
info
warning
danger
link
Disabled
Enabled
Panels


iPhone 6 - iPhone 6 / iOS 9.3 (...
Weex Demo
Buttons
List
Toast
Dialog
Alert
Prompt
Others


iPhone 6 - iPhone 6 / iOS 9.3 (...
Weex Demo
auto-play
Event, 36


Guide
Tutorial
Syntax
References
Service & Tools
CLI
Transformer

Modes

https://www.flickr.com/photos/teresaromano/6875006004/

Modes

1. Full Page

- Use weex to build a full page, like RN

2. Native Component

- Use weex in partial native ui, like ImageView

3. H5 Component (soon)

- Use weex in html5

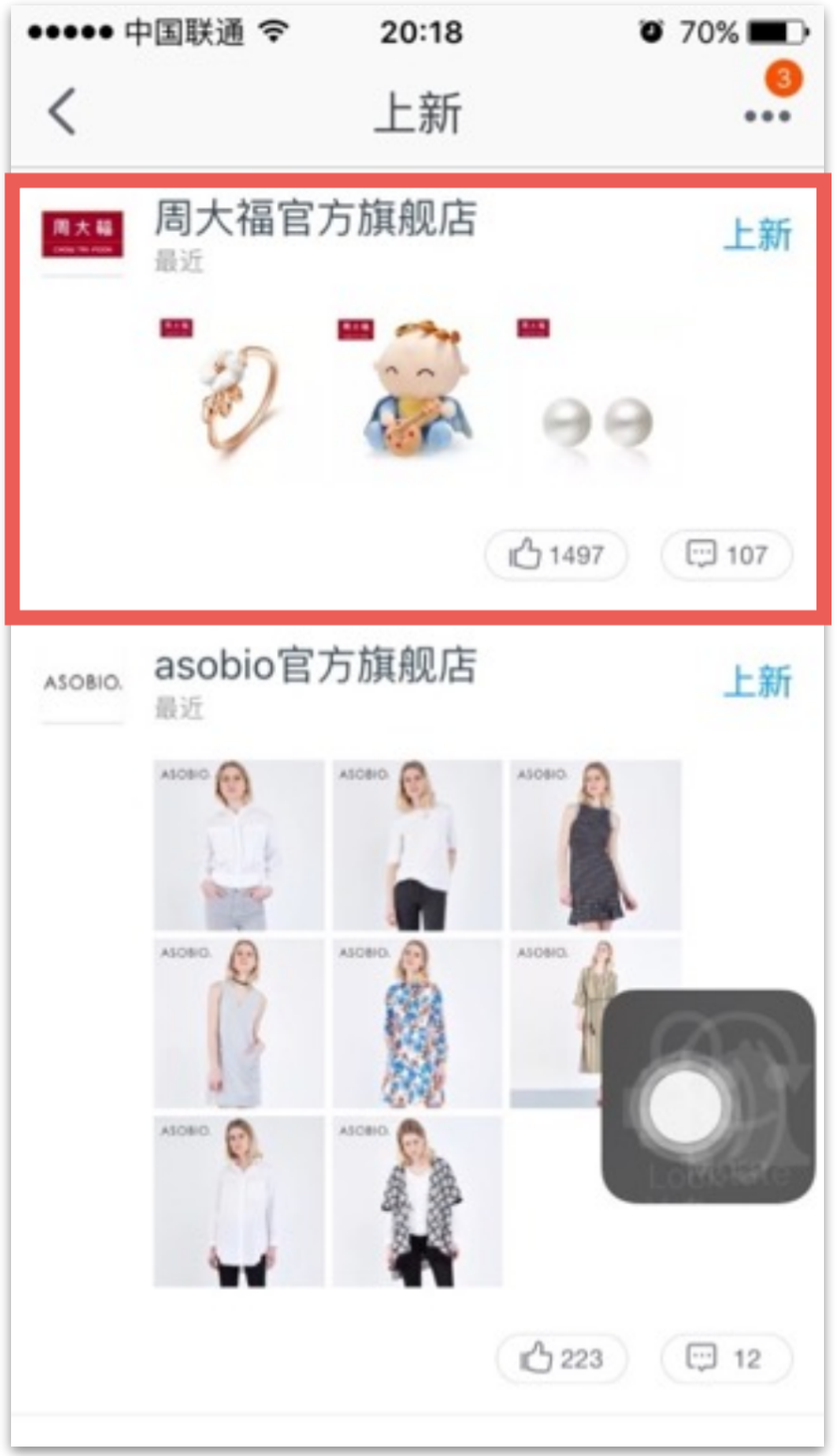
4. Single App (soon)

Full Page

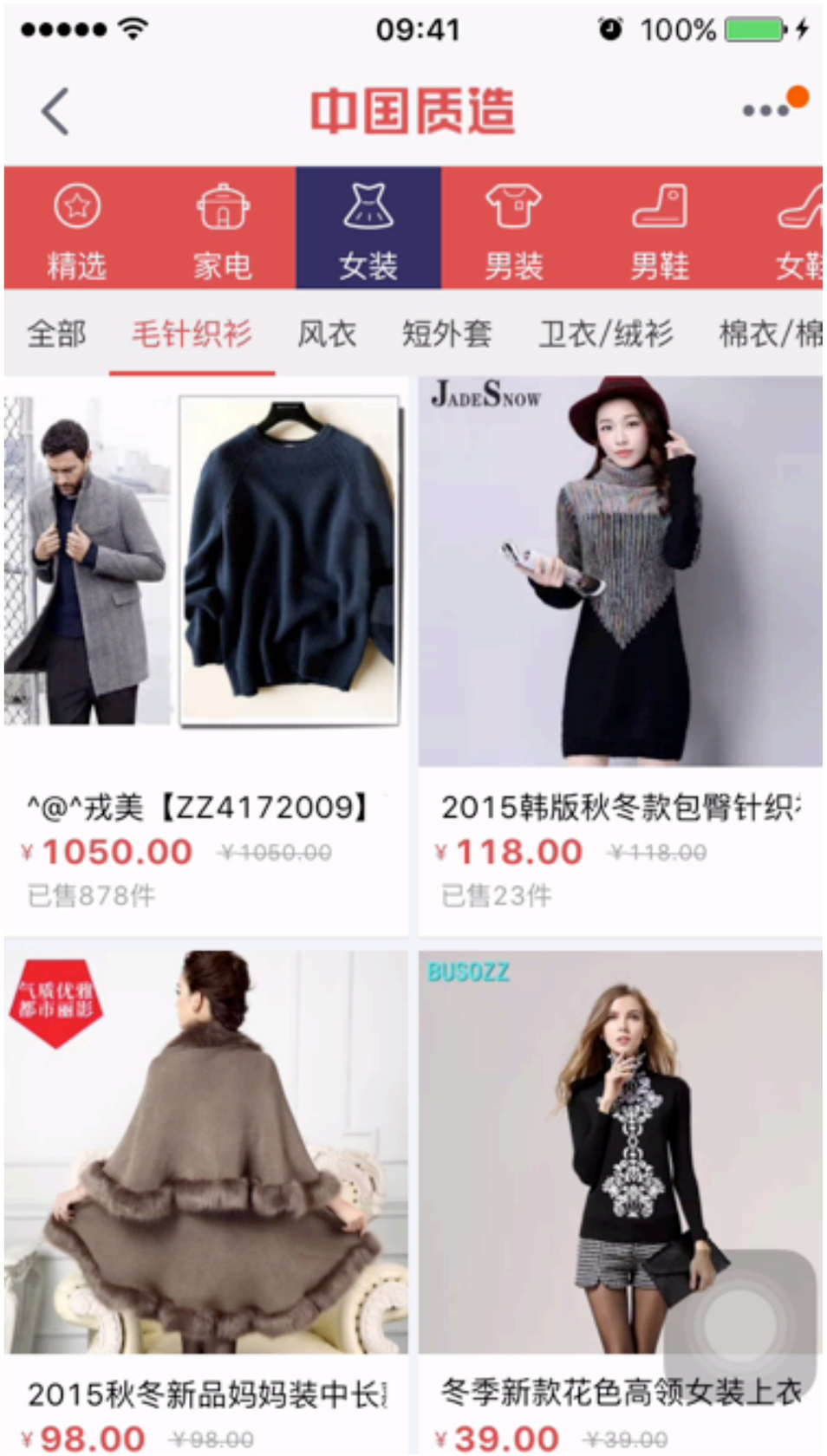

中国联通 22:03 35%
搜索新风尚好货
天猫新风尚
NEW SEASON/百万新品 春夏换新
阿里小蜜
03.25-03.28
3.22-3.24
大额购物券秒杀
3.25
超级新品秒杀
3.25-3.28
新品尖货秒杀
0.01元秒
100元优惠券
1元秒
100元优惠券
0.01元秒
100元优惠券
超级新品
主会场
分会场
必抢
风尚搭配
我的新风尚


搜索双11好货
距双11结束 00天 01小时07分19秒
双11全球狂欢节
攻略
规则
不只是
5折
倒计2小时!
最后一批好货
最
凑单必备专场
后
最后1批好货
疯
必抢超爆款
抢
限时买买买
家纺最后爆款
99元抢被子
非抢不可
59元抢路由器
最后囤货机会
妈咪必抢爆款
双11热卖榜单 十万人疯抢
最后2小时低价进行中
抢>
KanS
韩束
郭采洁晚会推荐
COSTCO
WHOLESALE
全场58折起

Native Component



H5 Component (soon)



How it works


WebView
Native(TableView)
Native(Image/Text)
WindVane Components
WindVane Components
click me, I'm html!
click me, I'm html!
Header test
三体/刘慈欣作品
¥20.5
时间移民、2018
¥18.7
三体/刘慈欣作品
¥20.5
时间移民、2018
¥18.7
三体/刘慈欣作品
¥20.5
时间移民、2018
¥18.7

List Memory

H5
80 - 200MB

iOS
80 - 100MB

图 - 300坑位内存表现

Development

1. **2015, Prototype in “双十一/双十二”**
2. **Standalone SDK, Style**
3. **More components**
4. **More tools, Open Source (private)**
5. **Open Source (public)**
6. **App framework**

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开源内测

@weex-team

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