GMTC 全球移动技术大会
GLOBAL MOBILE TECH CONFERENCE

Weex
移动端应用架构设计和实战

@凝砺 （宁栗）

聚焦前沿技术　传递实践经验

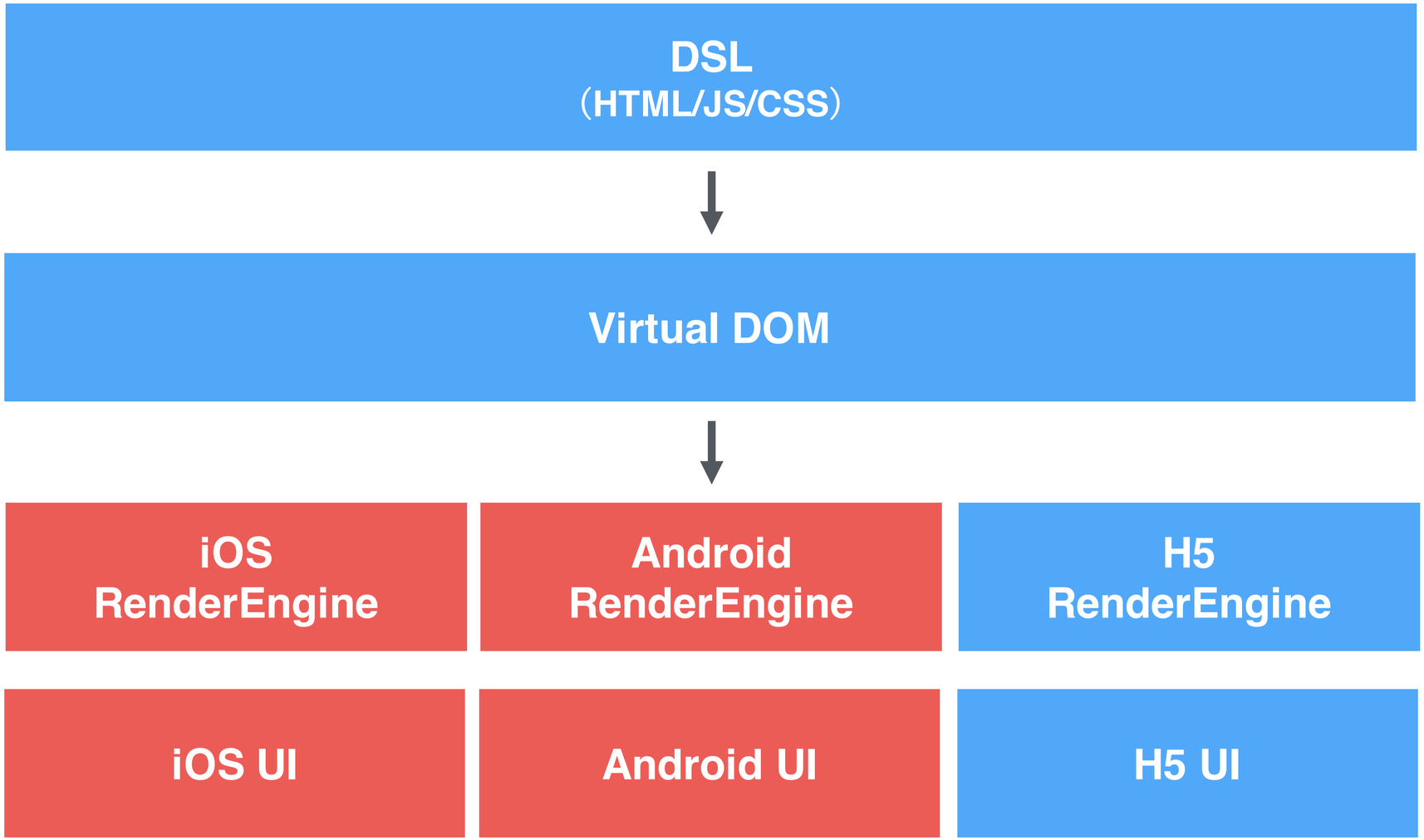
主办方 Geekbang. 极客邦科技　InfoQ

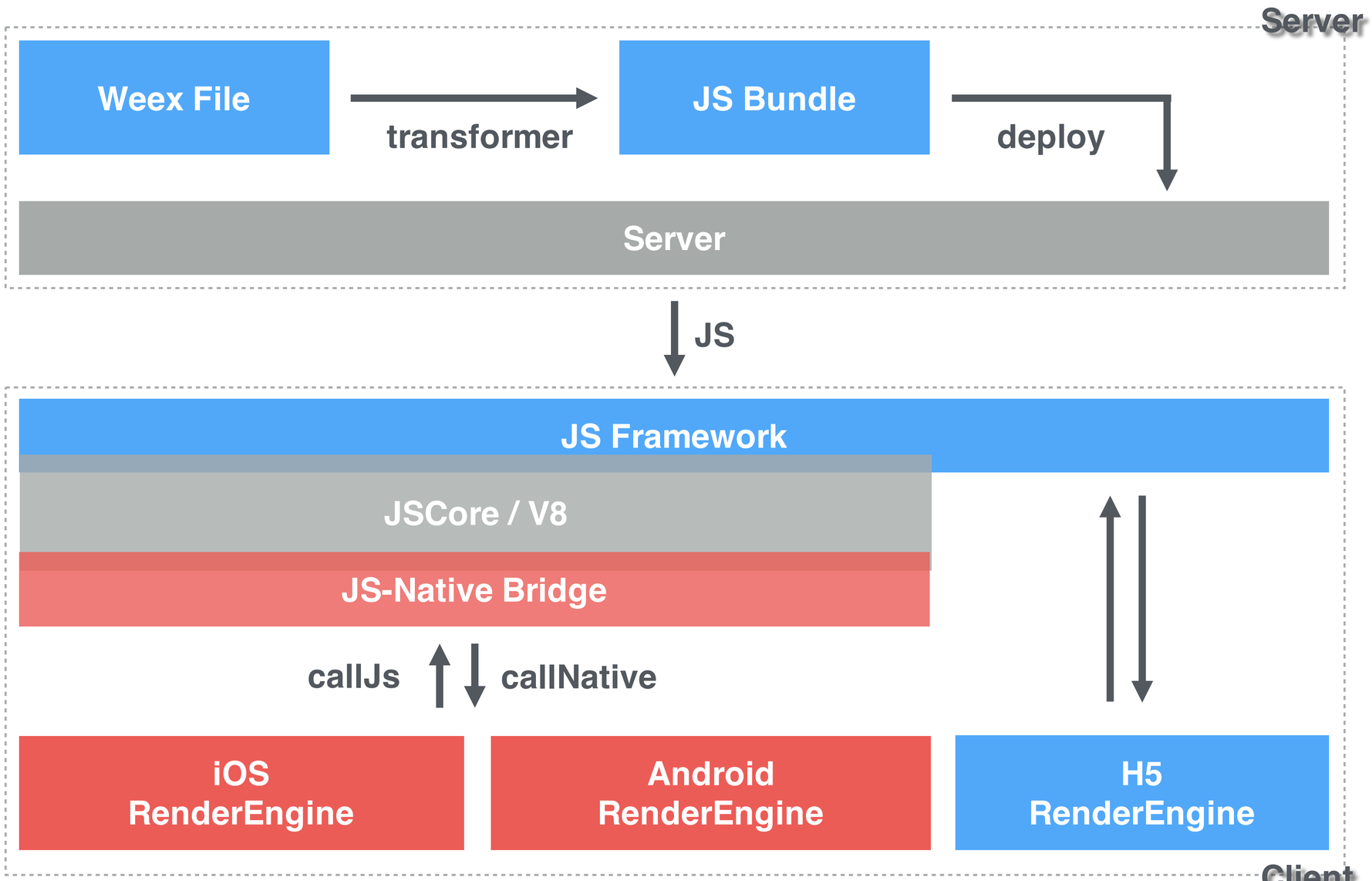
Alibaba Group
阿里巴巴集团

1. What is Weex
2. AppFramework
3. Live demo
4. Q & A

What is Weex

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


DSL
（HTML/JS/CSS）
Virtual DOM
iOS
RenderEngine
Android
RenderEngine
H5
RenderEngine
iOS UI
Android UI
H5 UI


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

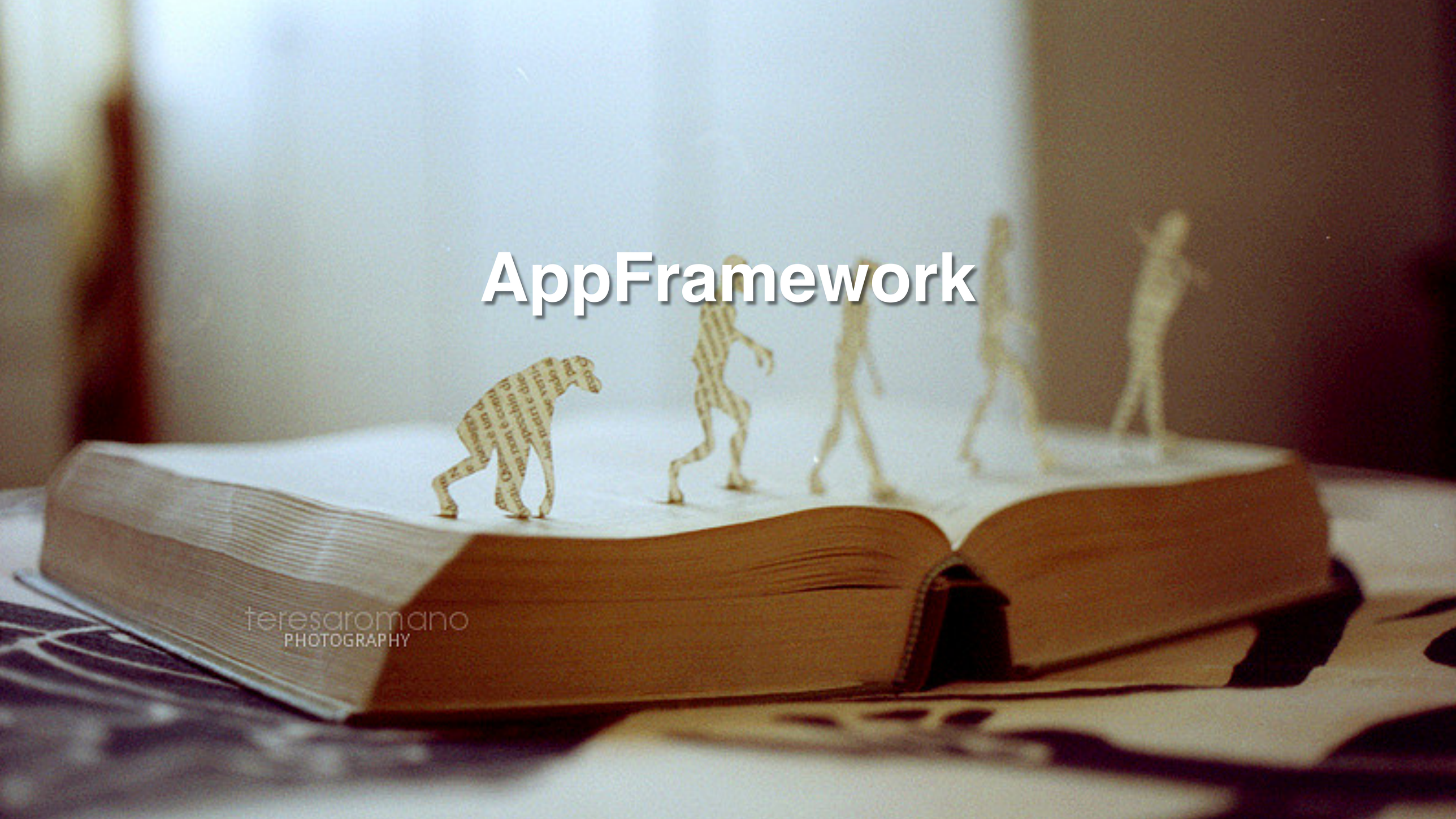
```
<template>
  <div class="hello" onclick="clickHandler">
    <text>{{message0}}</text>
    <text>{{message1}}</text>
  </div>
</template>

<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() {}
  }
};
```

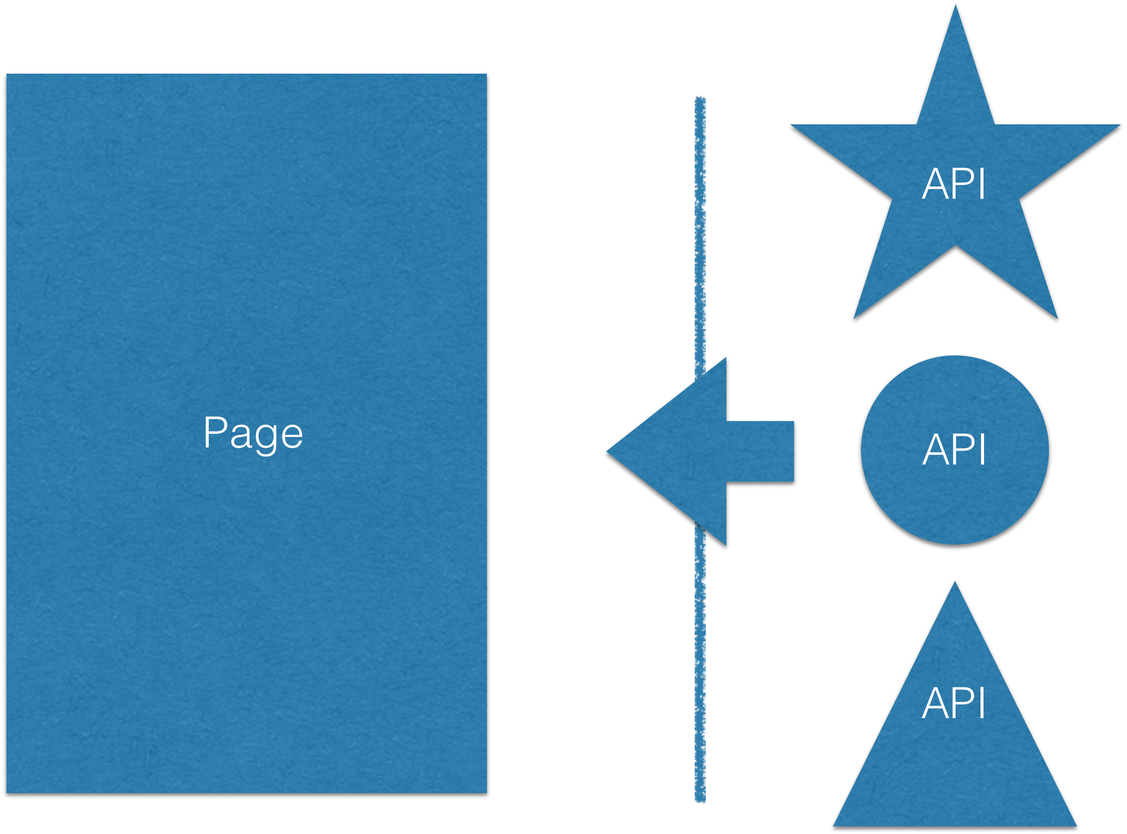
JS-Bundle

AppFramework

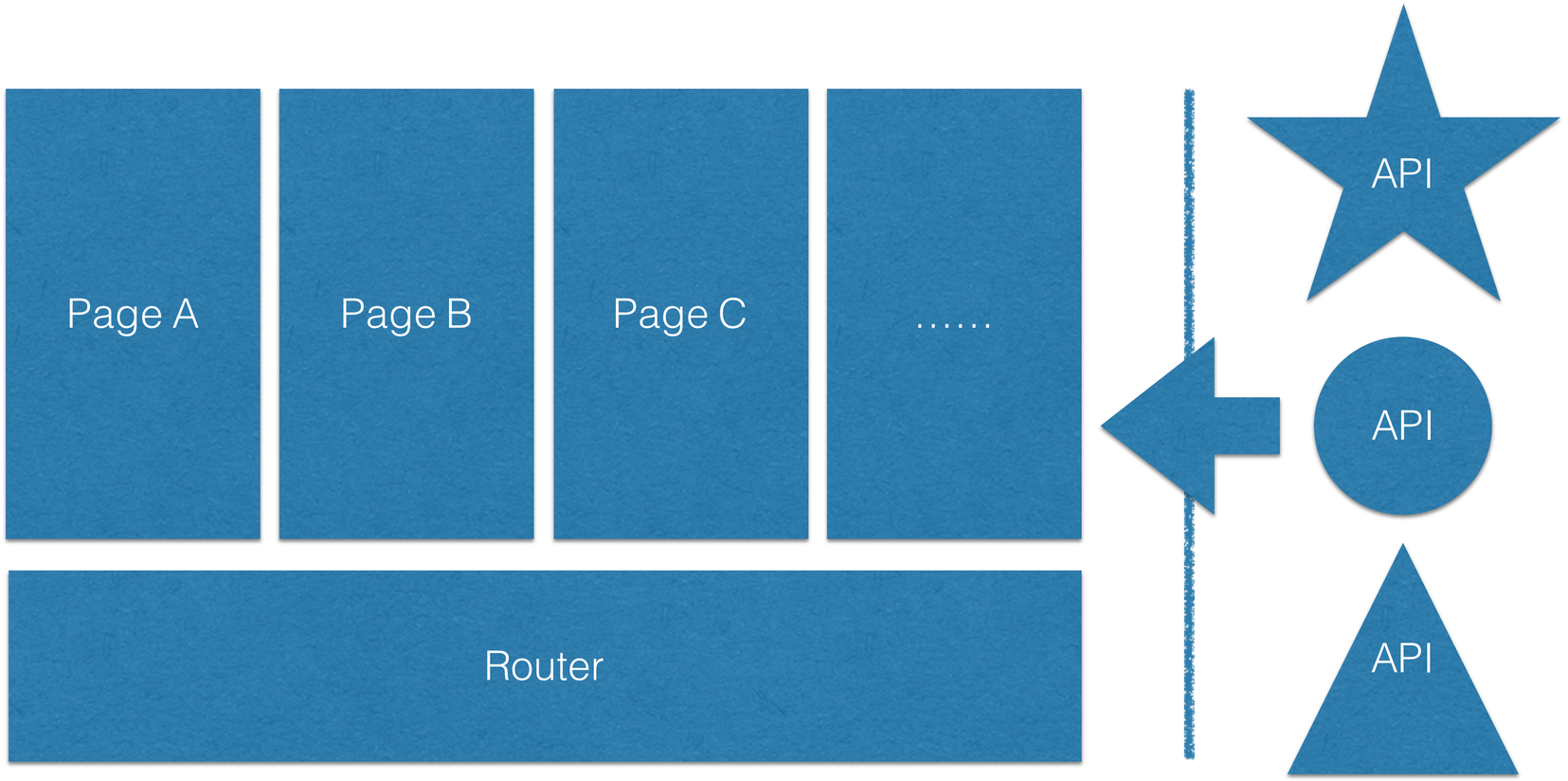


Alibaba Group
阿里巴巴集团

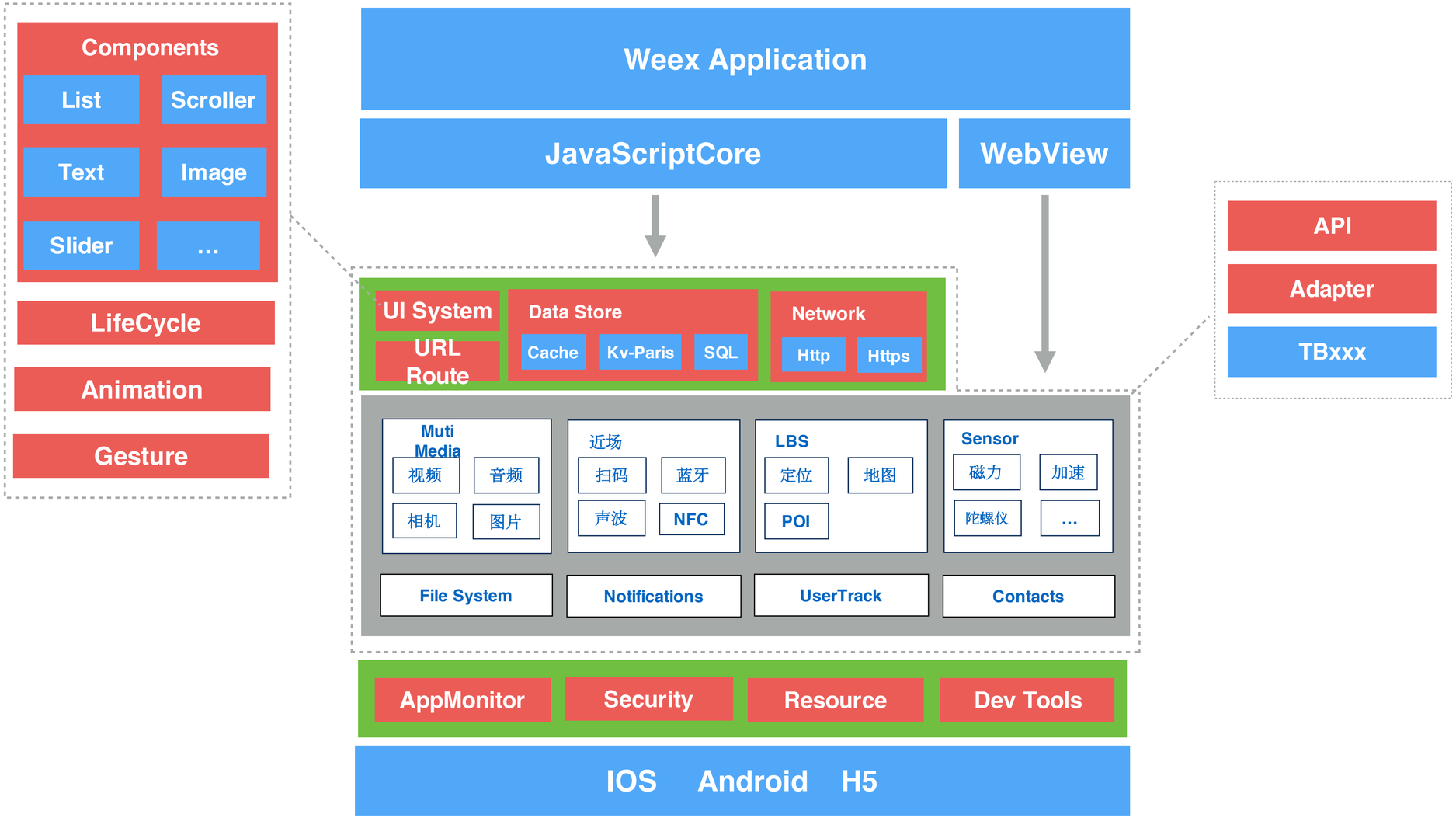
Weex 移动端研发模型（I）
single page + features



Weex 移动端研发模型 (II)
pages + router + features



系统架构框图

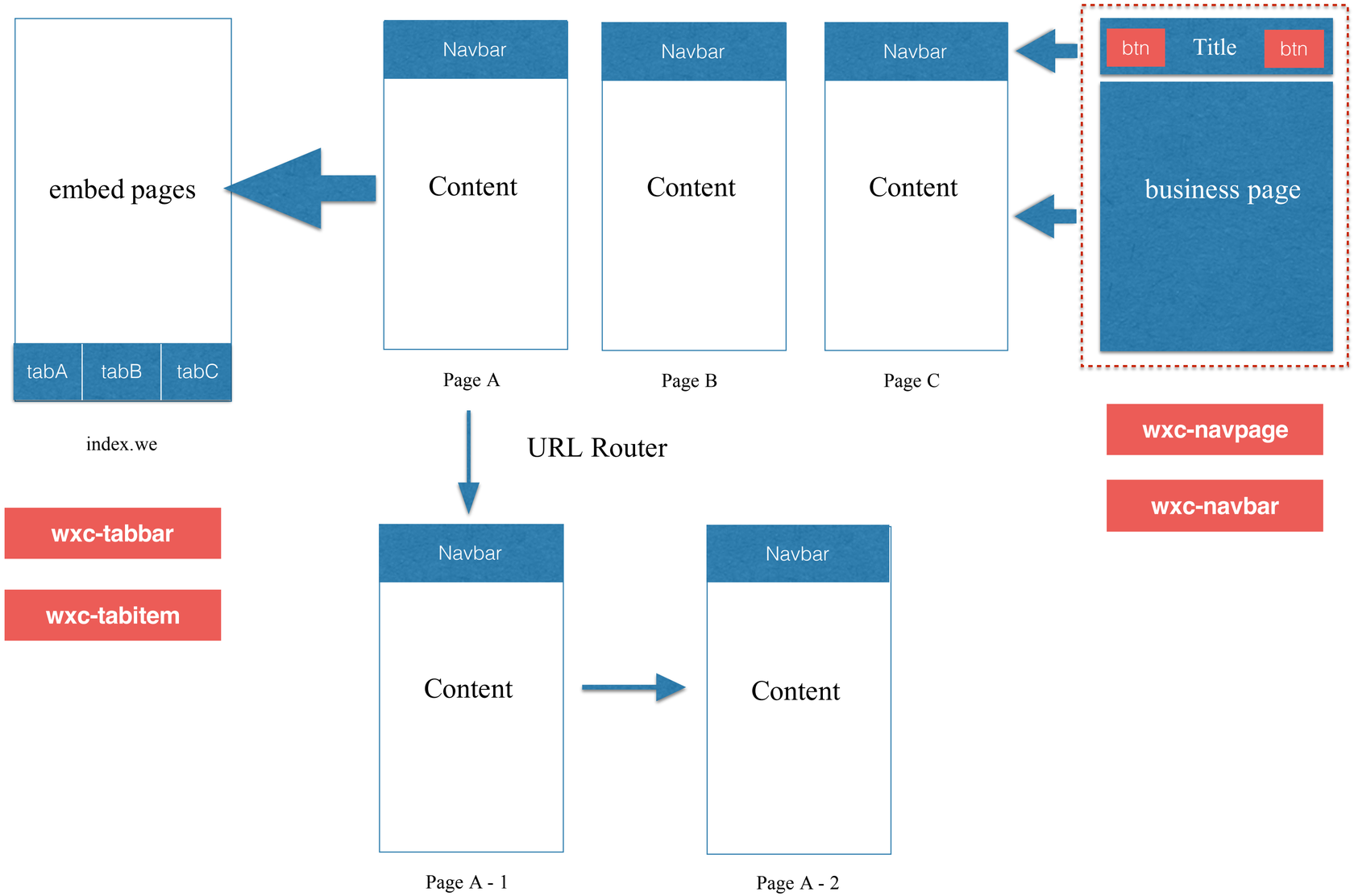

Components
List
Scroller
Text
Image
Slider
...
LifeCycle
Animation
Gesture
Weex Application
JavaScriptCore
WebView
API
Adapter
TBxxx
UI System
URL Route
Data Store
Cache
Kv-Paris
SQL
Network
Http
Https
Muti Media
视频
音频
相机
图片
近场
扫码
蓝牙
声波
NFC
LBS
定位
地图
POI
Sensor
磁力
加速
陀螺仪
...
File System
Notifications
UserTrack
Contacts
AppMonitor
Security
Resource
Dev Tools
IOS
Android
H5

Alibaba Group 阿里巴巴集团

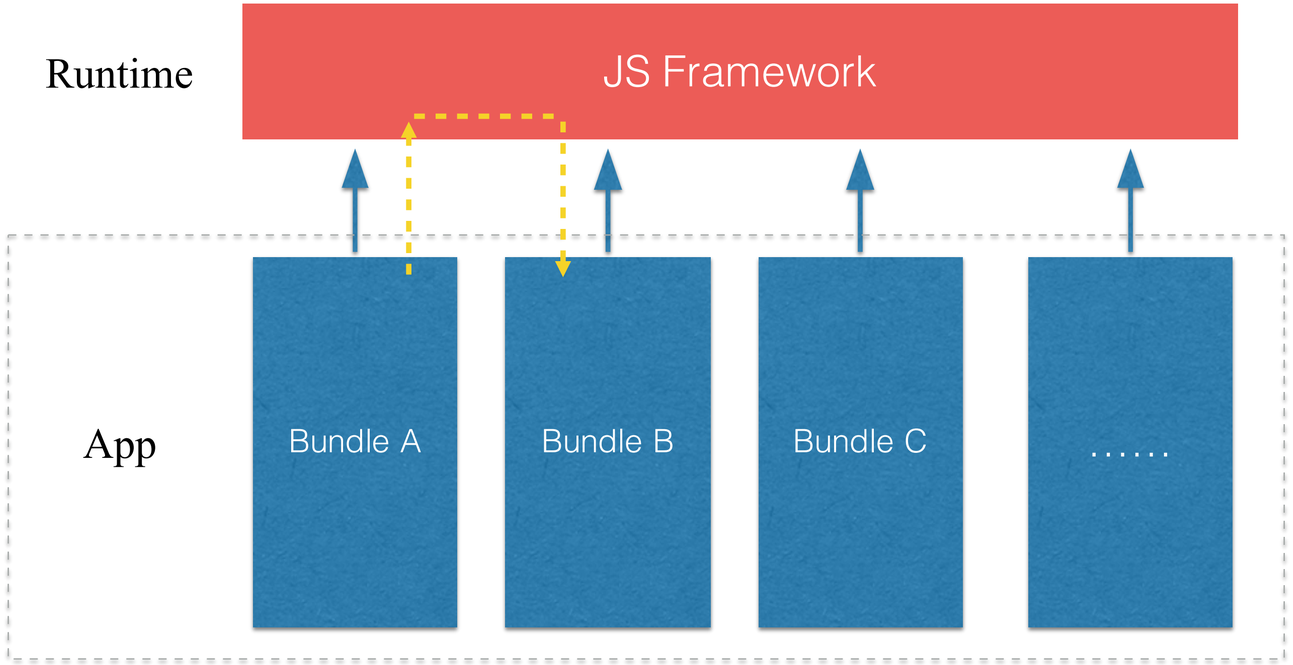
六脉神剑

1. 导航体系： TabBar、Navigator 、URL Router
2. 生命周期： Application、Page
3. 底层基建：Network、Data Store、Events …
4. 扩展性： Component、Module、Adapter
5. 性能监控：Memory、Frame Rate、Render Time
6. 开发调试

页面导航


embed pages
tabA
tabB
tabC
index.we
Navbar
Content
Page A
Navbar
Content
Page B
Navbar
Content
Page C
btn
Title
btn
business page
wxc-navpage
wxc-navbar
URL Router
wxc-tabbar
wxc-tabitem
Navbar
Content
Page A - 1
Navbar
Content
Page A - 2

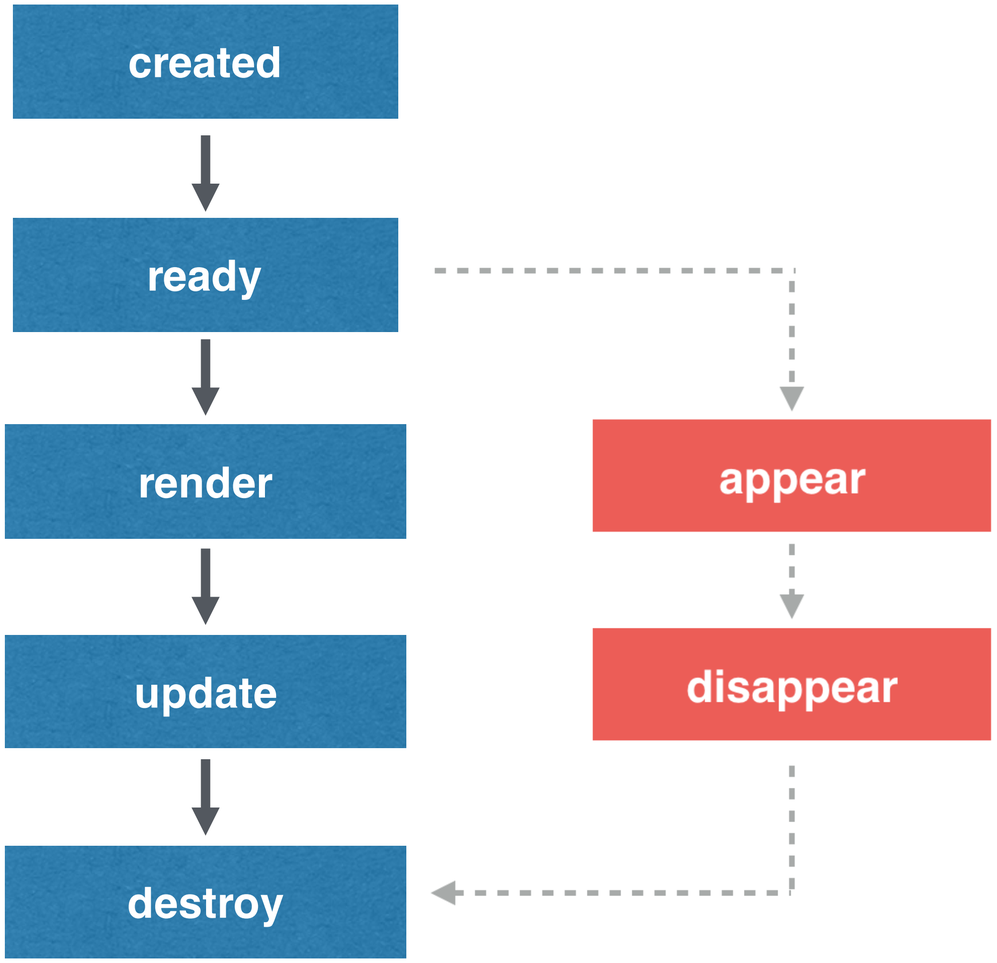
页面管理与多实例



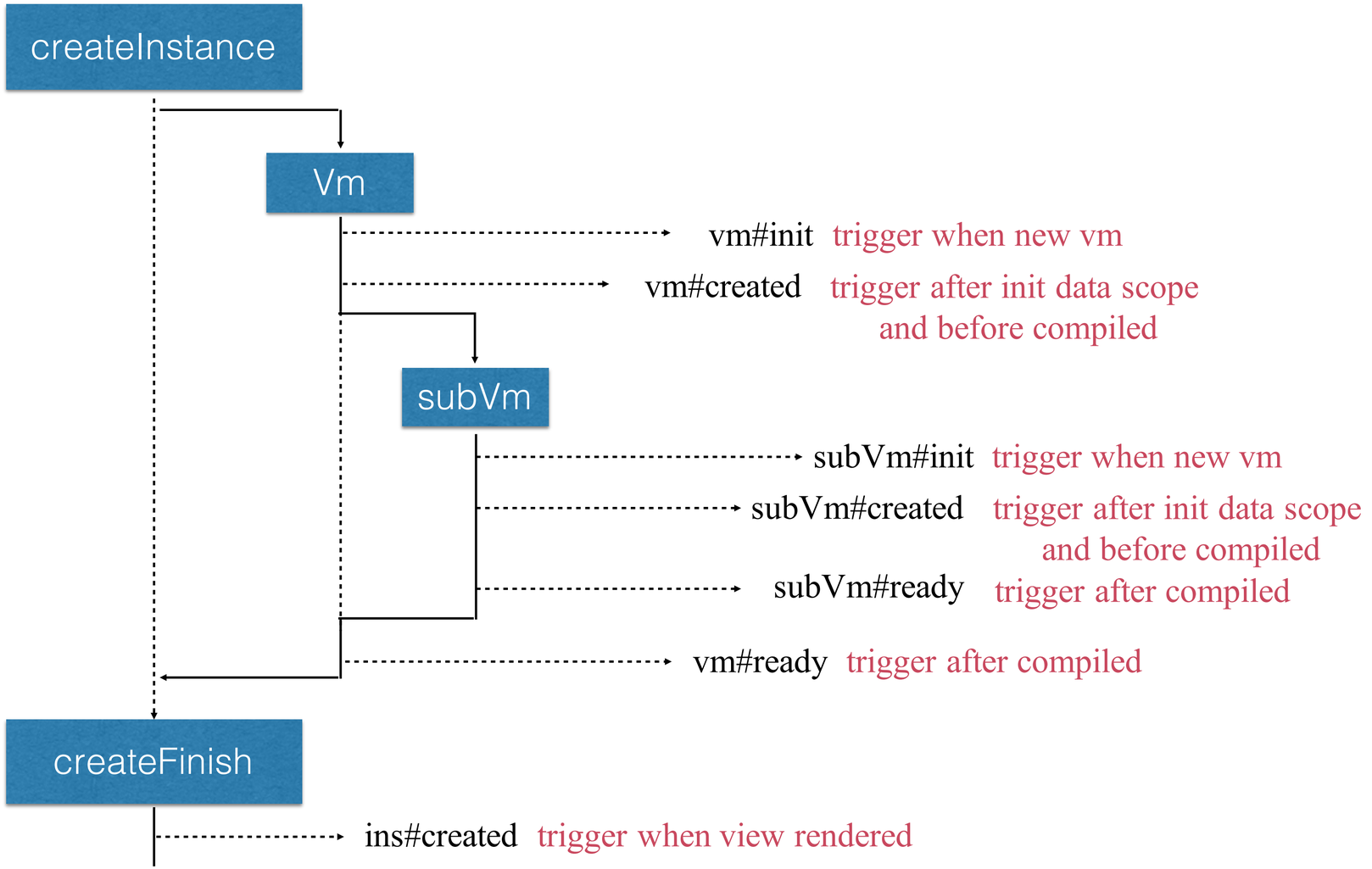
Application = bundles　　bundle = instance

All instances are managed by JS Framework .

生命周期

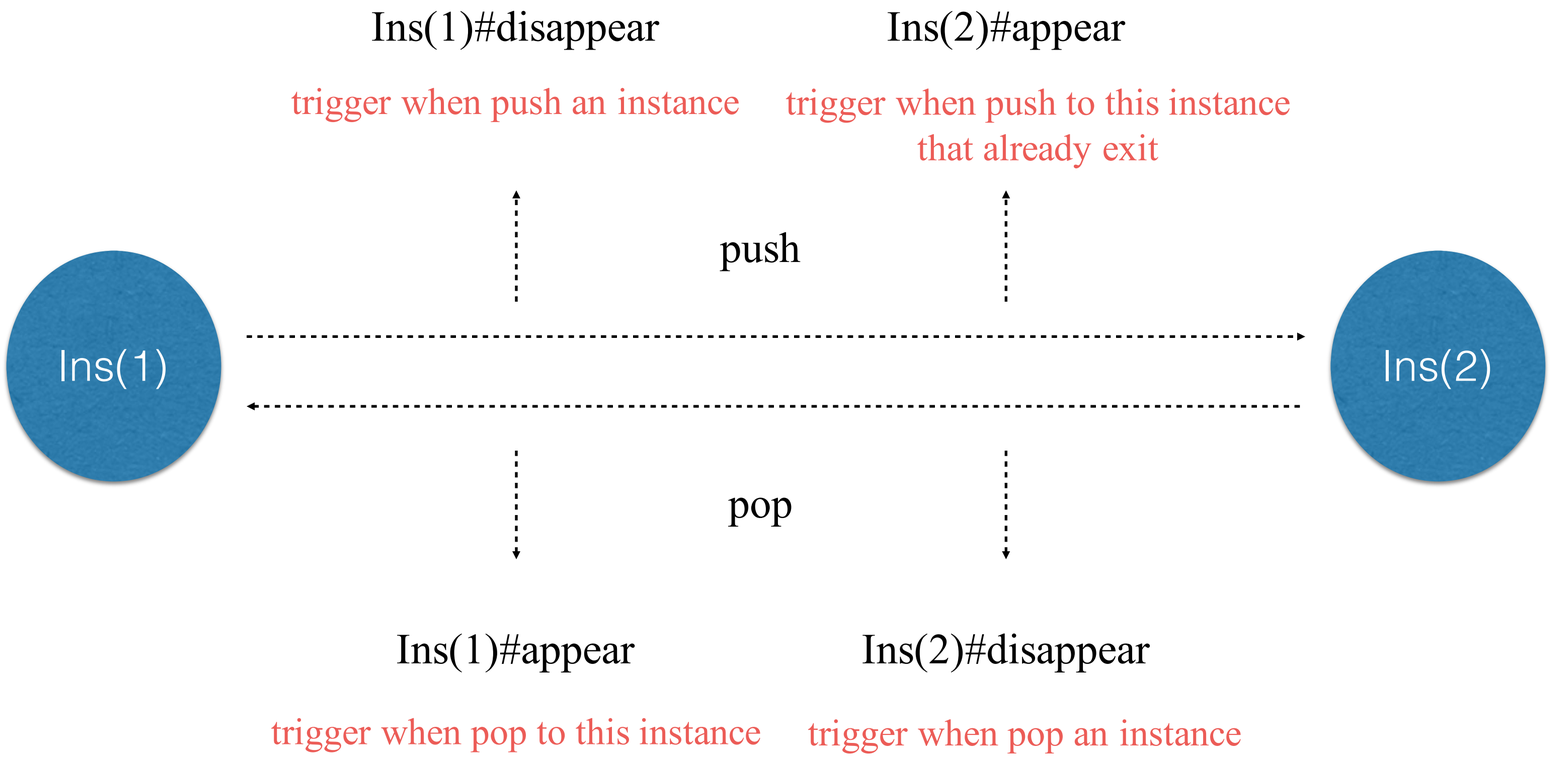


生命周期（实例）



创建实例流程

生命周期（导航）


Ins(1)#disappear
trigger when push an instance
Ins(2)#appear
trigger when push to this instance
that already exit
push
Ins(1)
Ins(2)
pop
Ins(1)#appear
trigger when pop to this instance
Ins(2)#disappear
trigger when pop an instance

Alibaba Group 阿里巴巴集团

扩展性

1. Component
2. 公共组件
3. Module
4. Adapter 适配层

Component

```objc
@implementation WXImageComponent

- (instancetype)initWithRef:(NSString *)ref type:(NSString *)type styles:(NSDictionary *)styles attributes:(NSDictionary *)attributes events:(NSArray *)events
    weexInstance:(WXSDKInstance *)weexInstance
{
    if (self = [super initWithRef:ref type:type styles:styles attributes:attributes events:events weexInstance:weexInstance]) {
        _imageSrc = [WXConvert NSString:attributes[@"src"]];
        _resizeMode = [WXConvert UIViewContentMode:attributes[@"resize"]];
        _imageQuality = [WXConvert WXImageQuality:styles[@"quality"]];
        _imageSharp = [WXConvert WXImageSharp:styles[@"sharpen"]];
    }

    return self;
}

- (UIView *)loadView
{
    return [[WXImageView alloc] init];
}

- (void)viewDidLoad
{
    UIImageView *imageView = (UIImageView *)self.view;
    imageView.contentMode = _resizeMode;
    imageView.userInteractionEnabled = YES;
    imageView.clipsToBounds = YES;
    imageView.exclusiveTouch = YES;
}

- (void)updateStyles:(NSDictionary *)styles
{
    if (styles[@"quality"]) {
        _imageQuality = [WXConvert WXImageQuality:styles[@"quality"]];
    }
}

- (void)updateAttributes:(NSDictionary *)attributes
{
    if (attributes[@"src"]) {
        _imageSrc = [WXConvert NSString:attributes[@"src"]];
    }

    if (attributes[@"resize"]) {
        _resizeMode = [WXConvert UIViewContentMode:attributes[@"resize"]];
        self.view.contentMode = _resizeMode;
    }
}
```

LifeCycle Of Component

loadView: Creates the view that the component manages.

viewDidLoad: Called after the component's view is loaded and set.

updateStyles: Called when component's style are updated.

updateAttributes: Called when component's attributes are updated.

<image style="your-custom-style" src="image-remote-source" resize="contain/cover/stretch"></image>

公共组件

```
//wxc-tabitem.we
<template>
    <div class="container" style="background-color: {{backgroundColor}}"
    onclick="onclickitem">
        <image class="top-line" src = "http://gtms03.alicdn.
        com/tps/i3/TB1mdsiMpXXXXXpXXXXNw4JIXXX-640-4.png"></image>
        <image class="tab-icon" src = {{icon}}></image>
        <text class="tab-text" style="color: {{titleColor}}">{{title}}</text>
    </div>
</template>
```

```
//wxc-tabbar.we
<template>
    <div class="wrapper">
        <embed class="content" style="visibility:{{visibility}}" repeat={{tabItems}}
        src={{src}} type="weex"></embed>
        <div class="tabbar" append = "tree">
            <wxc-tabitem repeat={{tabItems}} index={{index}} icon={{icon}}
            title={{title}} title-color={{titleColor}}></wxc-tabItem>
        </div>
    </div>
</template>
```

Alibaba Group 阿里巴巴集团

公共组件

```
<template>
  <div style="flex-direction: column;">
    <wxc-tabbar tab-items = {{tabItems}}></wxc-tabbar>
  </div>
</template>

<script>
  require('weex-components');
  module.exports = {
    data: {
      dir: 'examples',
      tabItems: [
        {
          index: 0,
          title: 'tab1',
          titleColor: '#000000',
          icon: '',
          image: 'http://gtms01.alicdn.com/tps/i1/TB1qw.hMpXXXXagXXXX9t7RGVXX-46-46.png
          ',
          selectedImage: 'http://gtms04.alicdn.com/tps/i4/TB16jjPMpXXXXazXVXX9t7RGVXX-
          46-46.png',
          src: 'component/tabbar/tabbar-item.js?itemId=tab1',
          visibility: 'visible',
        },
        {
```

Alibaba Group 阿里巴巴集团

如何选择

	Component	公共组件
开发成本	前端+客户端	前端
动态性	依赖客户端升级（iOS,Android）	动态部署
定制型	弱	强
交互性	可支持复杂交互行为	简单交互行为
使用场景	常用基础组件或与业务相关长期稳定的组件	个性化定制组件

Tips：公共组件的可塑性取决于WeexSDK提供的基础能力，包括手势和动画等。

欢迎各位开发者通过github提交
您的作品！！！

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/

Module

```
@implementation WXEventModule

@synthesize weexInstance;

WX_EXPORT_METHOD(@selector(openURL:))

- (void)openURL:(NSString *)url
{
    NSString *newURL = url;
    if ([url hasPrefix:@"//"]) {
        newURL = [NSString stringWithFormat:@"http:%@", url];
    } else if (![url hasPrefix:@"http"]) {
        // relative path
        newURL = [NSURL URLWithString:url relativeToURL:weexInstance.scriptURL].absoluteString;
    }

    UIViewController *controller = [[WXDemoViewController alloc] init];
    ((WXDemoViewController *)controller).url = [NSURL URLWithString:newURL];

    [[weexInstance.viewController navigationController] pushViewController:controller animated:YES];
}

@end
```

Weex后续会陆续提供一些基础性module,如定位服务、调用相册和拍照等，偏重实际业务的module扩展还有赖于开发者自定义。

欢迎各位开发者通过github提交
您的作品！！！

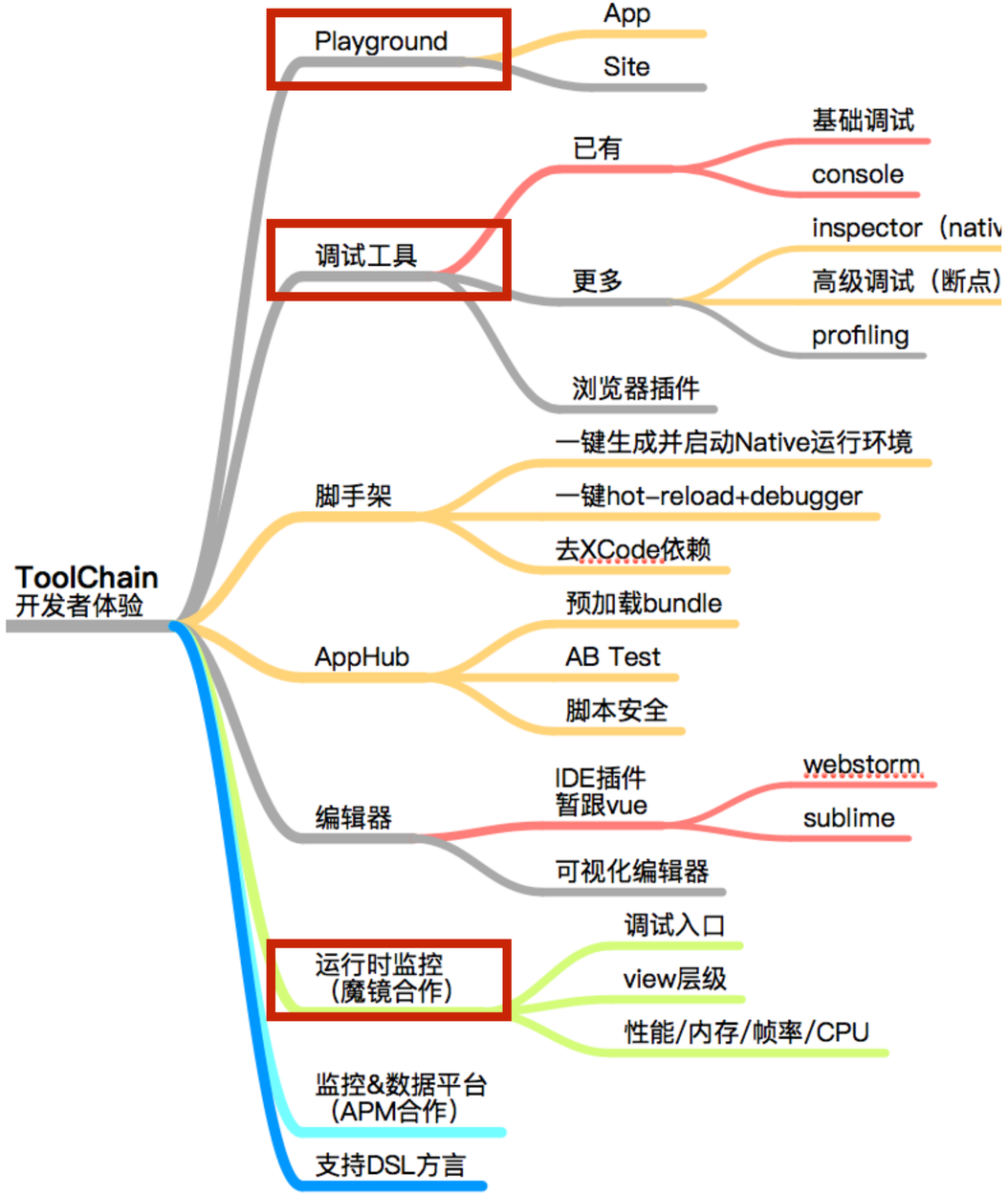
Adapter适配层

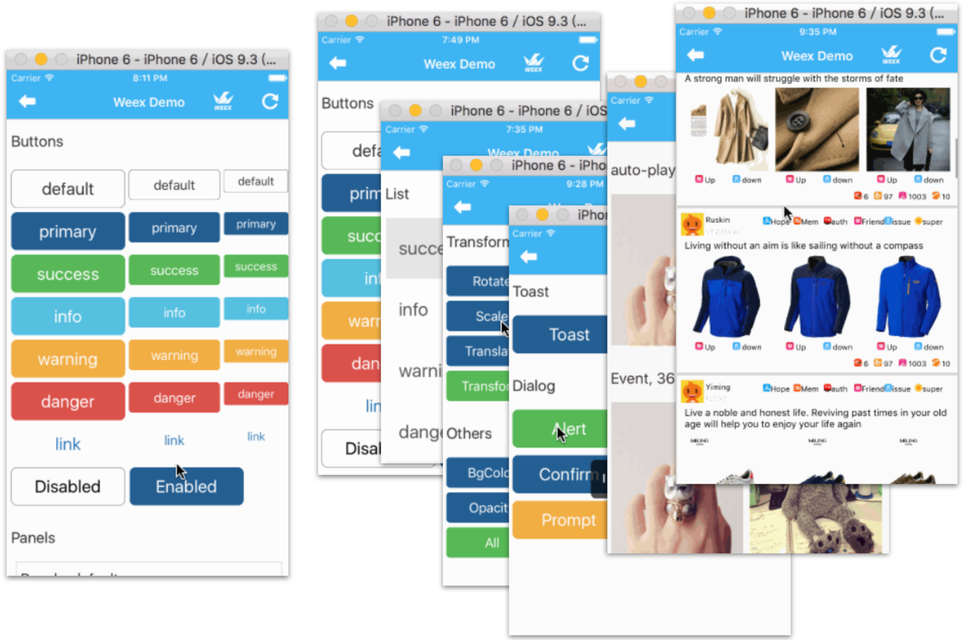
```objc
[WXSDKEngine initSDKEnviroment];

[WXSDKEngine registerHandler:[WXImgLoaderDefaultImpl new] withProtocol:@protocol(WXImgLoaderProtocol)];
[WXSDKEngine registerHandler:[WXEventModule new] withProtocol:@protocol(WXEventModuleProtocol)];
```

```objc
#pragma mark -
#pragma mark WXImgLoaderProtocol

- (id<WXImageOperationProtocol>)downloadImageWithURL:(NSString *)url imageFrame:(CGRect)imageFrame userInfo:
    (NSDictionary *)userInfo completed:(void(^)(UIImage *image,  NSError *error, BOOL finished))completedBlock
{
    if ([url hasPrefix:@"//"]) {
        url = [@"http:" stringByAppendingString:url];
    }
    return (id<WXImageOperationProtocol>)[[SDWebImageManager sharedManager] downloadImageWithURL:[NSURL
        URLWithString:url] options:0 progress:^(NSInteger receivedSize, NSInteger expectedSize) {

    } completed:^(UIImage *image, NSError *error, SDImageCacheType cacheType, BOOL finished, NSURL *imageURL)
        {
        if (completedBlock) {
            completedBlock(image, error, finished);
        }
    }];
}
```

Tips：开发者可依据协议约定，自行实现协议。通过注册机制，新的实现类会动态替换已有的实现。

开发体验





- Tutorial
- Syntax
  - Data
  - Style
  - Event
  - Displ
  - Rend
  - Comp
  - Find
  - Comm
  - Page
- How-tos
  - Mana
  - Maint
  - Requ

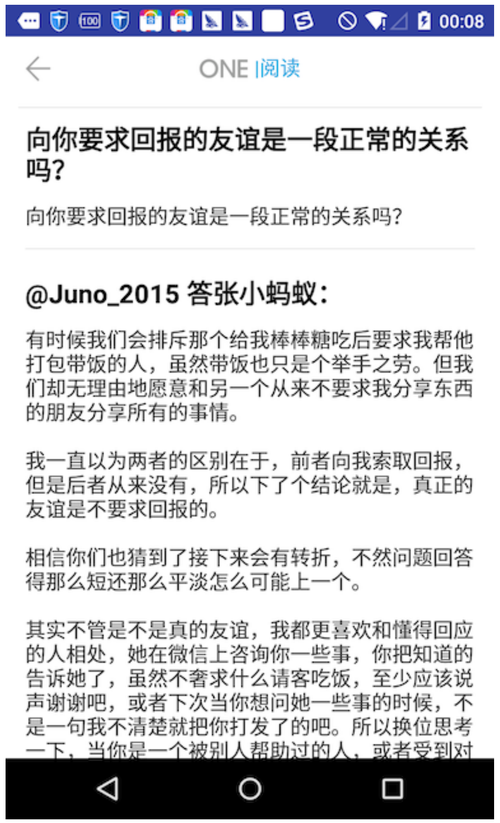
References

- Bootstra
- Compor
- Instance
- Built-in
  - Cor
  - Cor
  - Cor
  - Special Element
  -
  - <scroller>

Service & Tools

- CLI
- Transformer
- Playground App

优秀作品秀



引用于 https://github.com/dodola/WeexOne?utm_source=tuicool&utm_medium=referral

Live Demo

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

Alibaba Group
阿里巴巴集团

Q & A

应用开发分解

“拿来主义”　　稳定高效　　兼容性强　　调试便利

应用示例


●●○○○ 中国电信
11:44
扫码
年中促超值来抢
消息
美妆线上专柜
100%官方直售
美丽速达
立即抢购
积分刮券
充值
闪购全球
聚划算
天猫热点
劲爆年货5折起，满2件5折，最后一波
抢购 5折起+2件再5折
品牌资讯
品牌街
新年大变样
大牌入驻
满减超值购
什么牌子好
大扫除必备
往左划
便捷生活
天猫超市
拜年大钜惠
今日疯抢
爆款1元起
极速达
天猫
关注
范儿
购物车
我


●●○○○ 中国电信
11:45
商品
详情
评价
HLA
海澜之家
12.5下/海澜之家2015秋季热卖男装Y字领纯色打底衫长袖T恤
分享有礼
¥ 98
快递: 0.00
月销0
江苏无锡
商品已经卖光啦~要不要瞧瞧别的~
客服
店铺
收藏
加入购物车
立即购买

一个例子

```
<template>
    <div style="flex-direction: row;" onclick="clickHandler" onappear="appear" ondisappear="disappear">
        <text>{{message}}</text>
    <div>
<template>
<script>
    module.export = {
        data: {
            message: 'This is Page A'
        },
        created: function() {

        },
        methods: {
            ready: function() {

            },
            clickHandler: function(){
                var navigator = require('@weex-module/navigator');
                var params = {
                    'url':  this.baseURL + 'pageB.js'+'?params=XXX',
                    'animated' : 'true',
                }
                navigator.push(params, function () {});
            },
            appear: function(){

            },
            disappear:function(){

            }
        }
    }
</script>
```

Data Binding && Observer

View model is ready

Do something when view appears and disappears