



by Василий Кандинский



BlendUI

让轻应用如Native般流畅

berg

# About me

---

- 雷志兴 (berg)
- 百度资深工程师 (2007 ~)
  - 前端基础技术
  - 技术开源
- W3C member
- 微博: [@berg](#)
- 微信订阅号: [DevLife](#) (行云出岫)

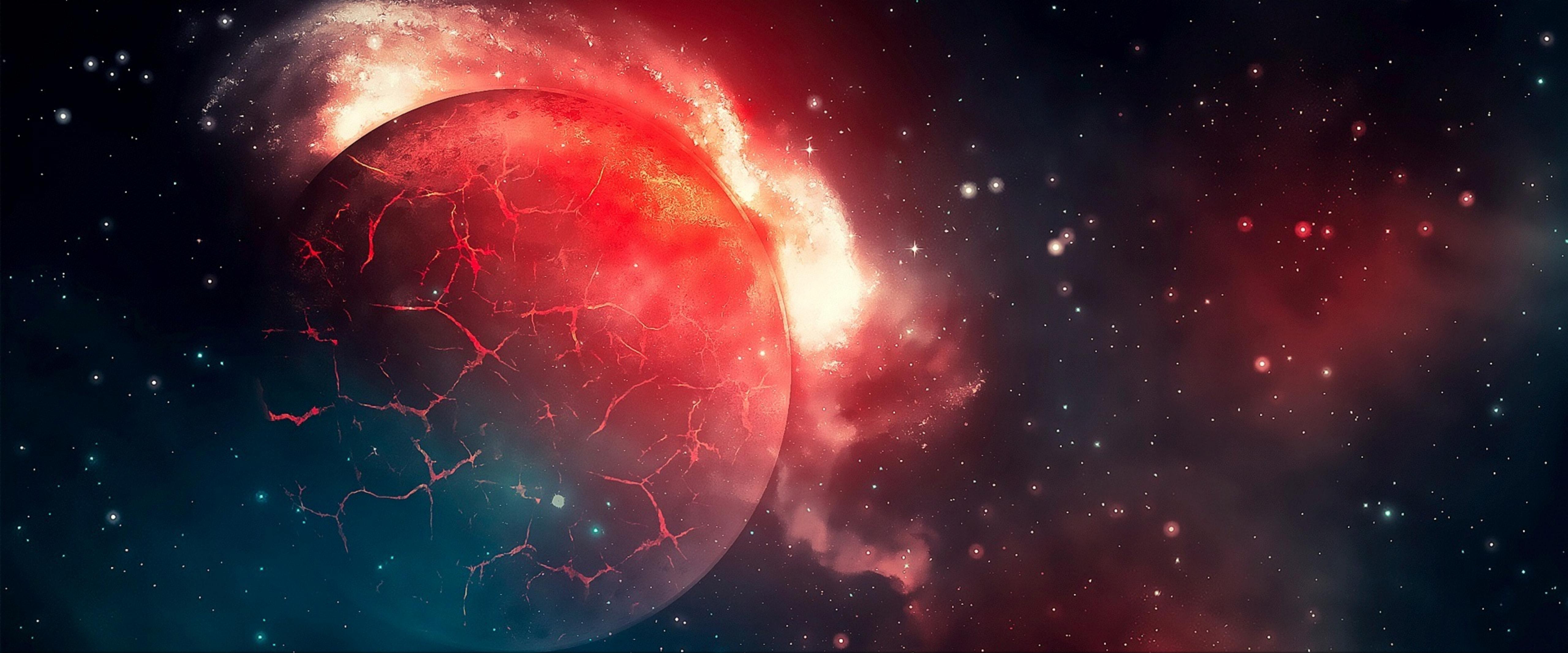


# Outline

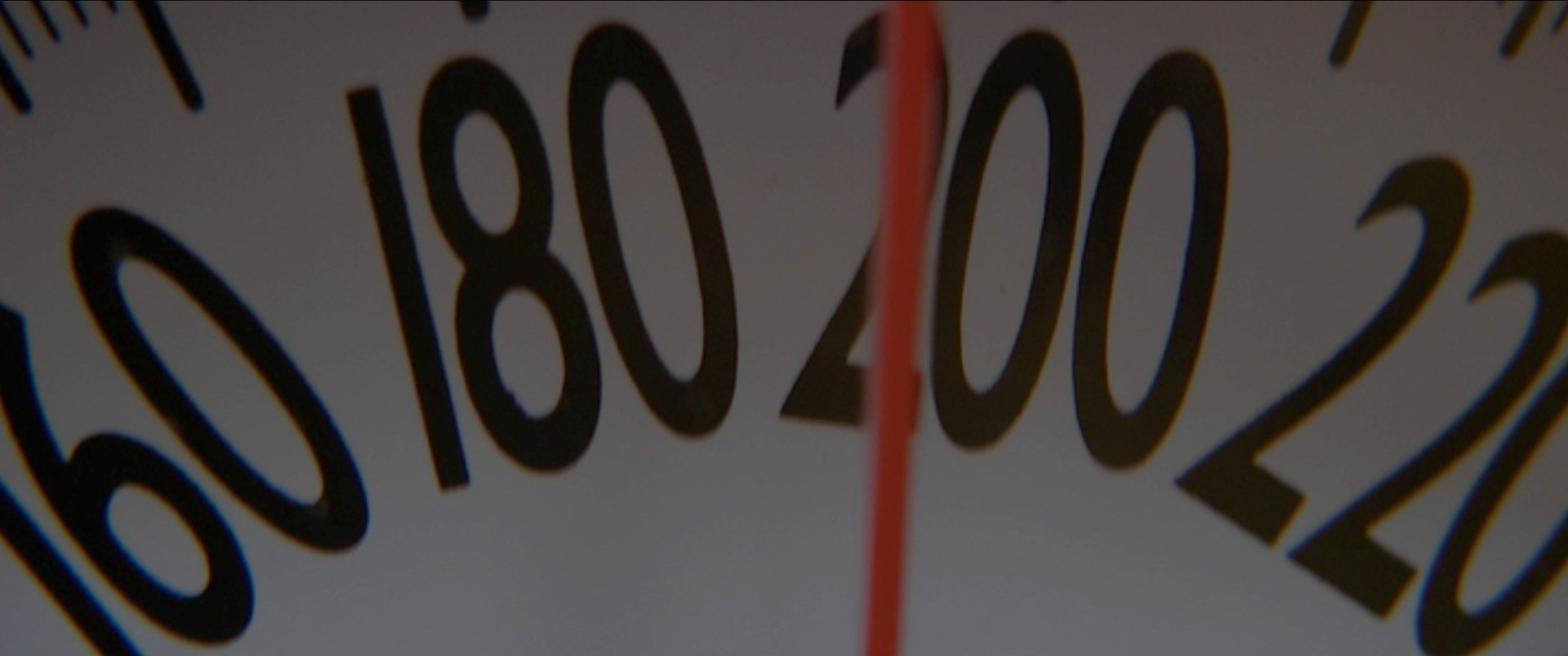


- 背景与挑战
- 设计思路
- 核心实现
- Showcase

# 背景与挑战

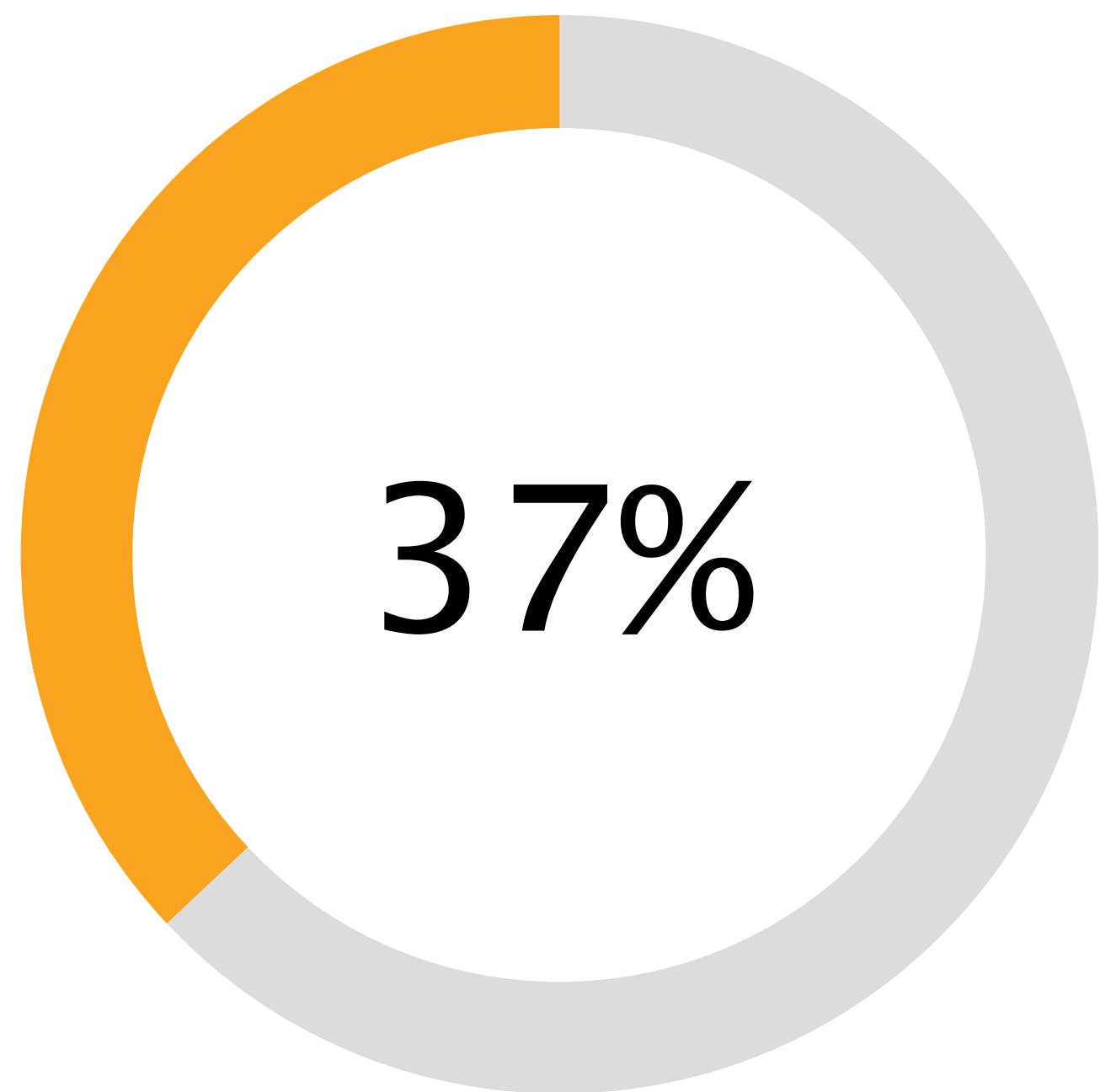


从数据开始

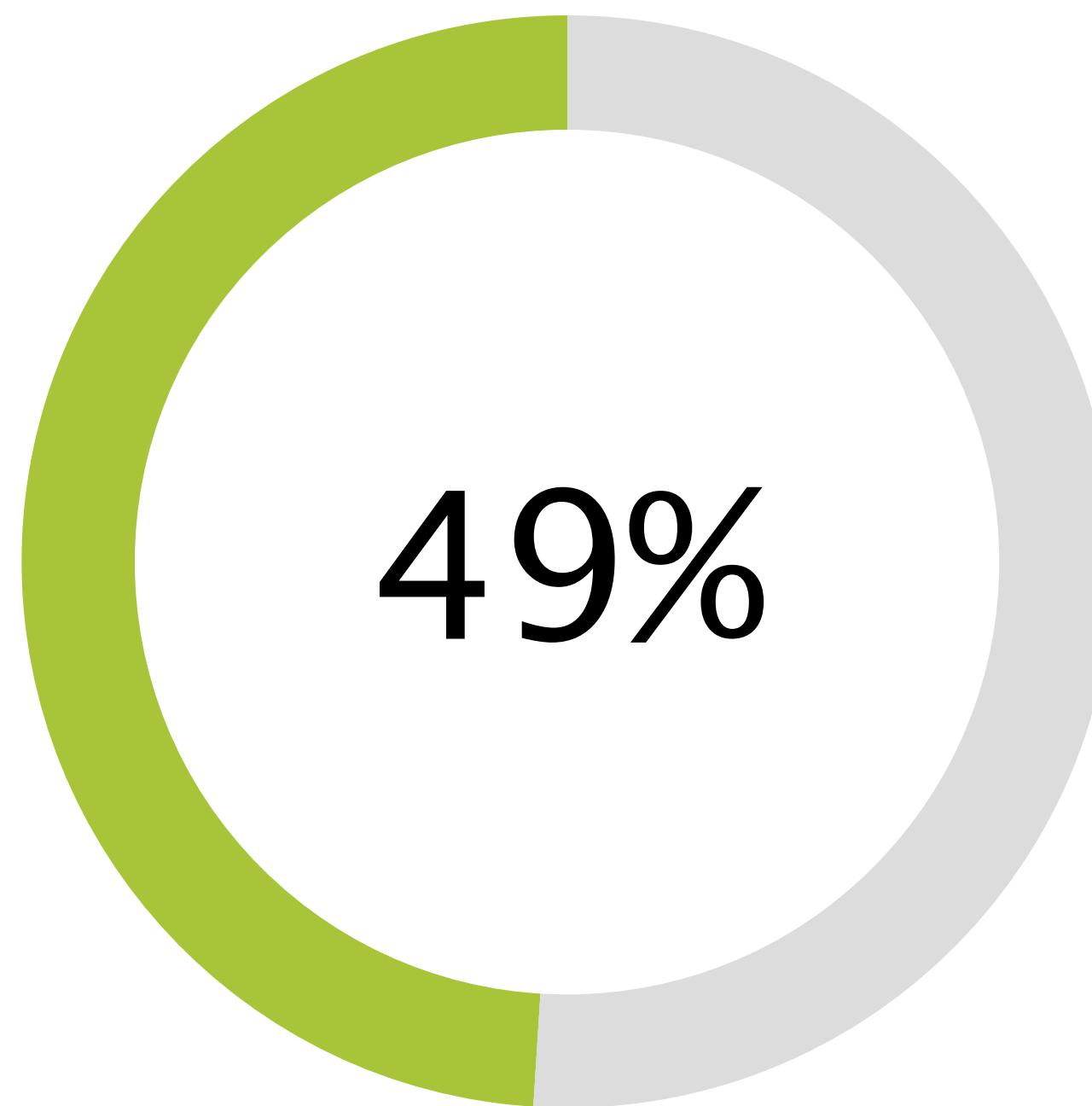


多少Native app可以用web技术实现

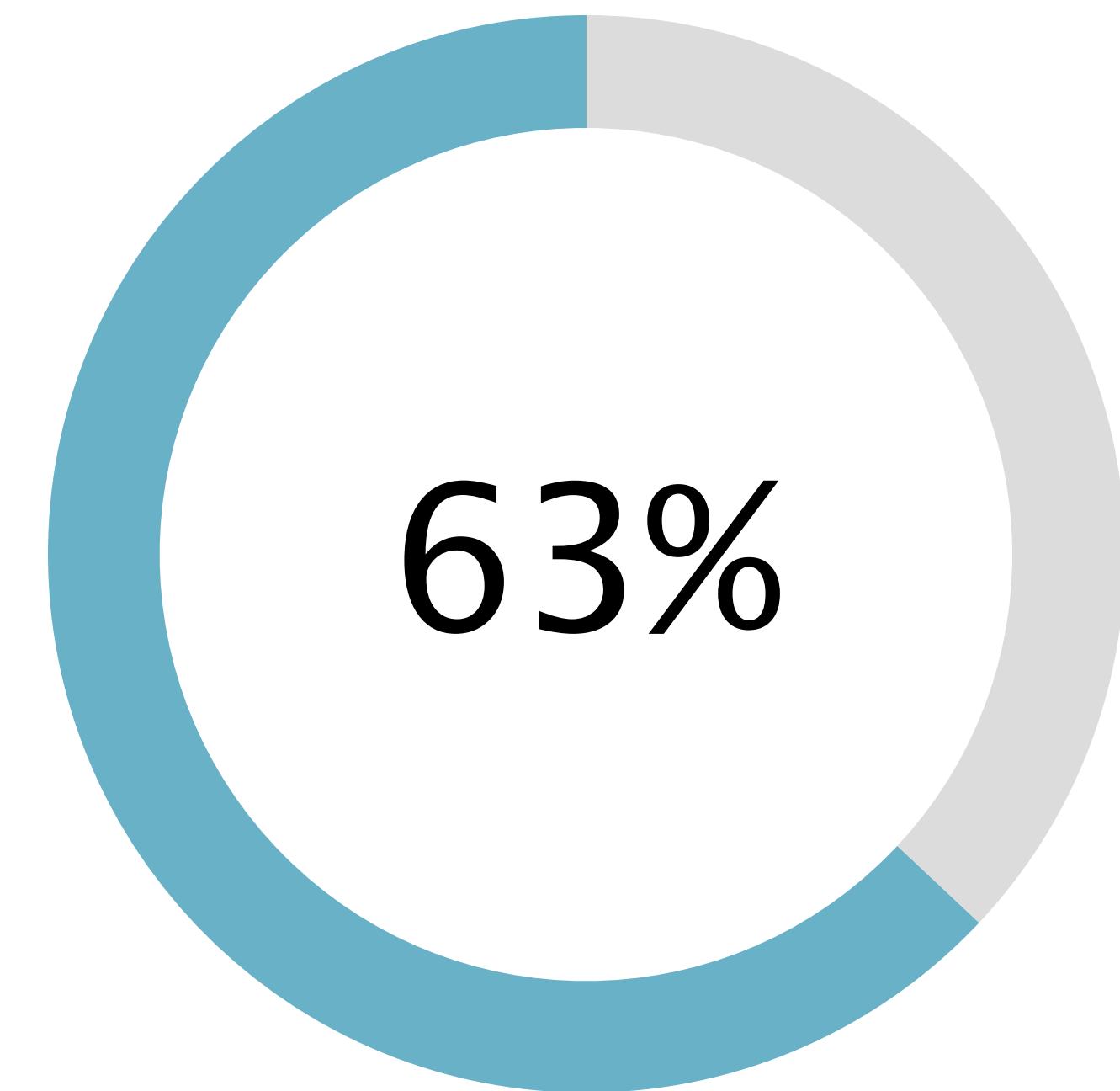
# 多少Native app可以用web技术实现



HTML5



Phonegap

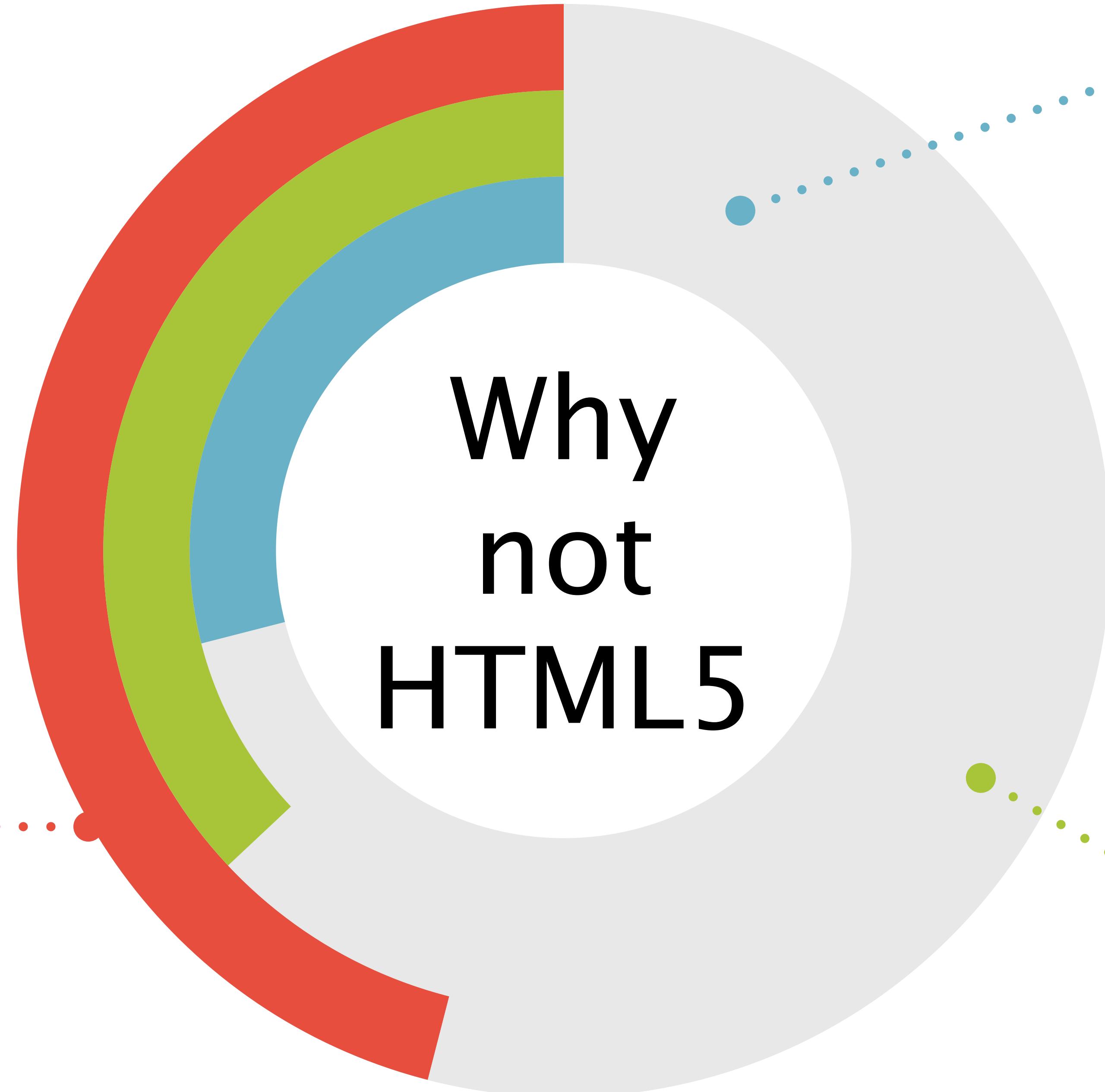


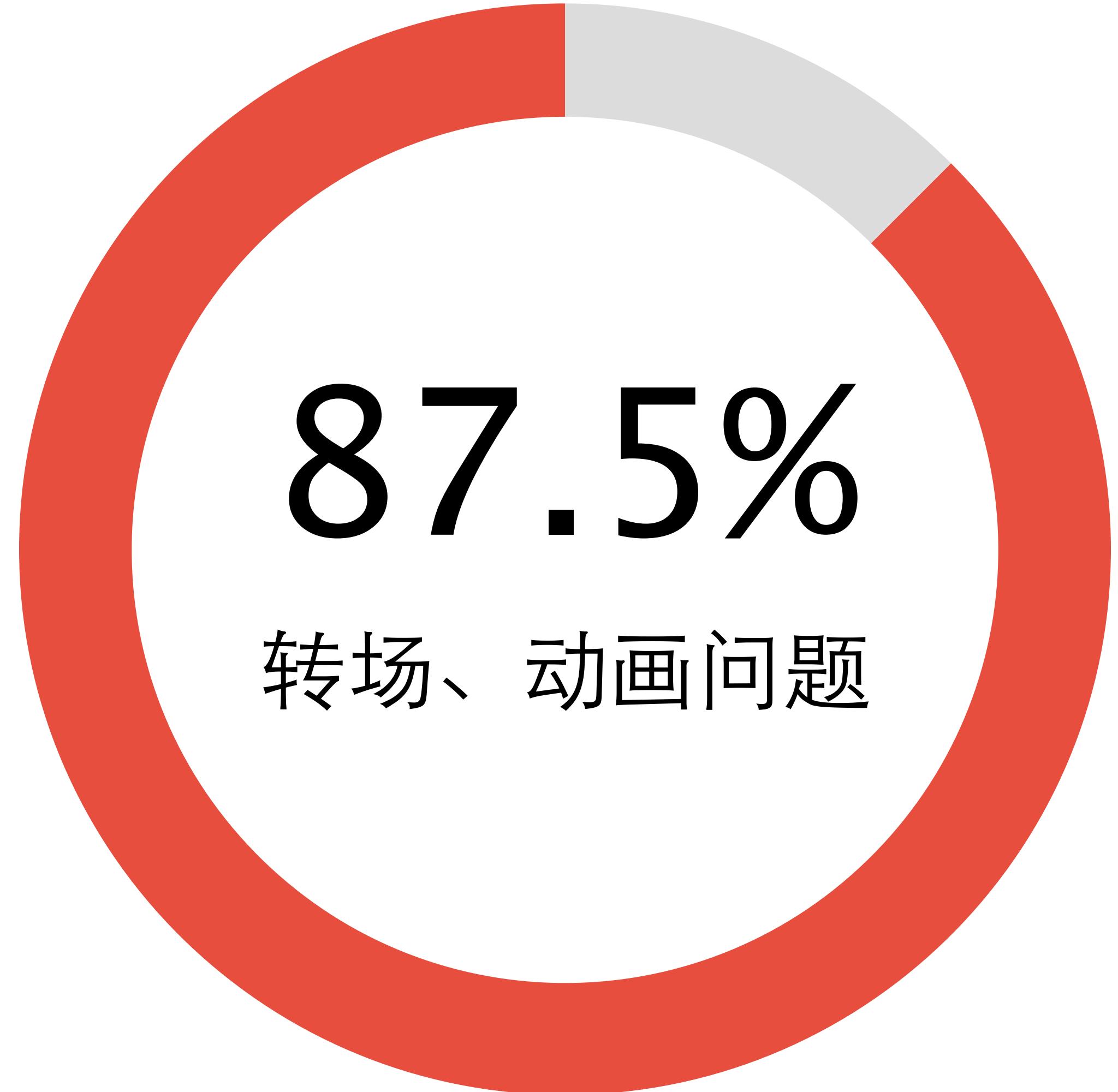
Appcelerator

与Native交互  
29%

性能  
46%

APIs  
37%





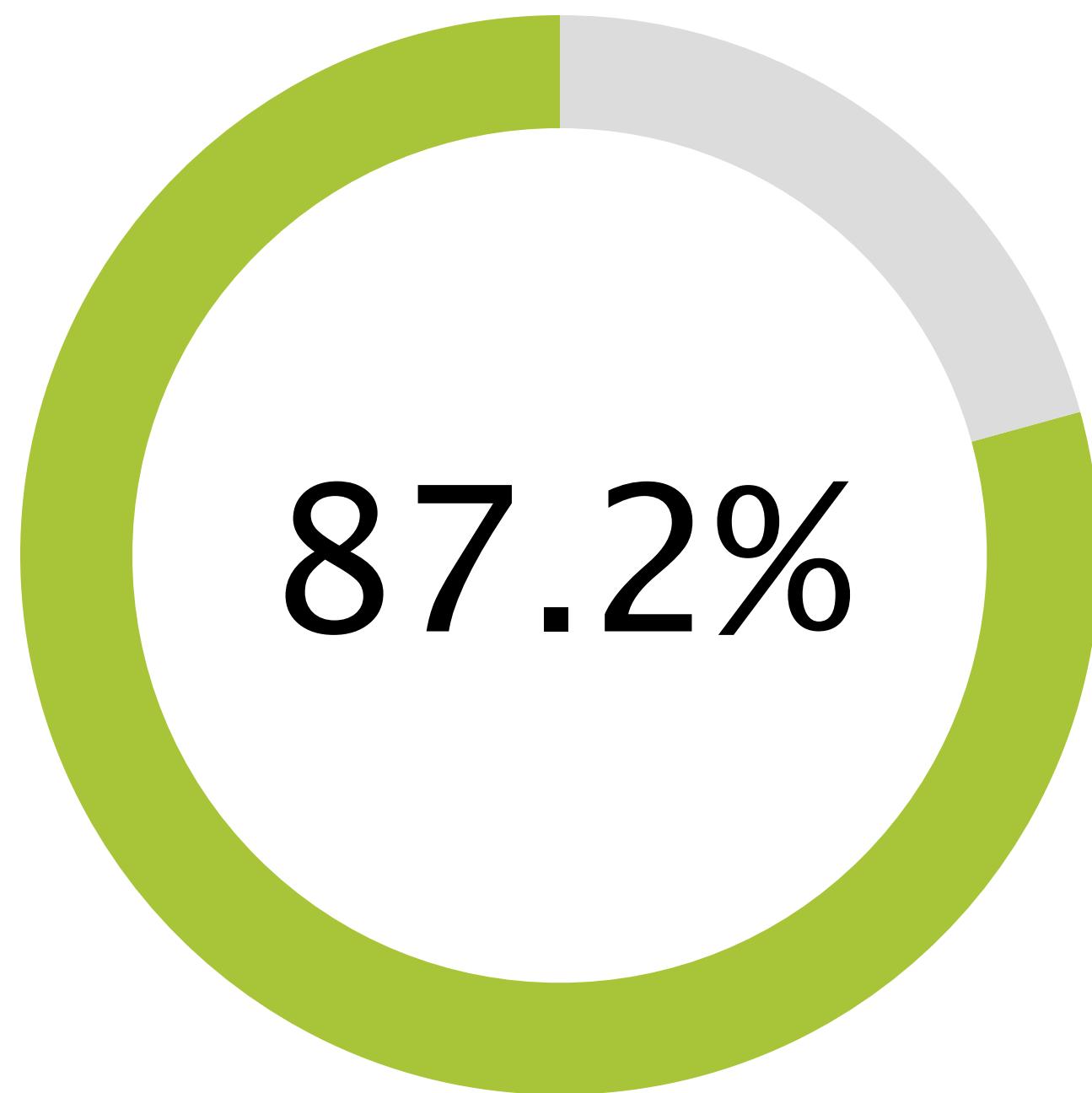
87.5%

转场、动画问题

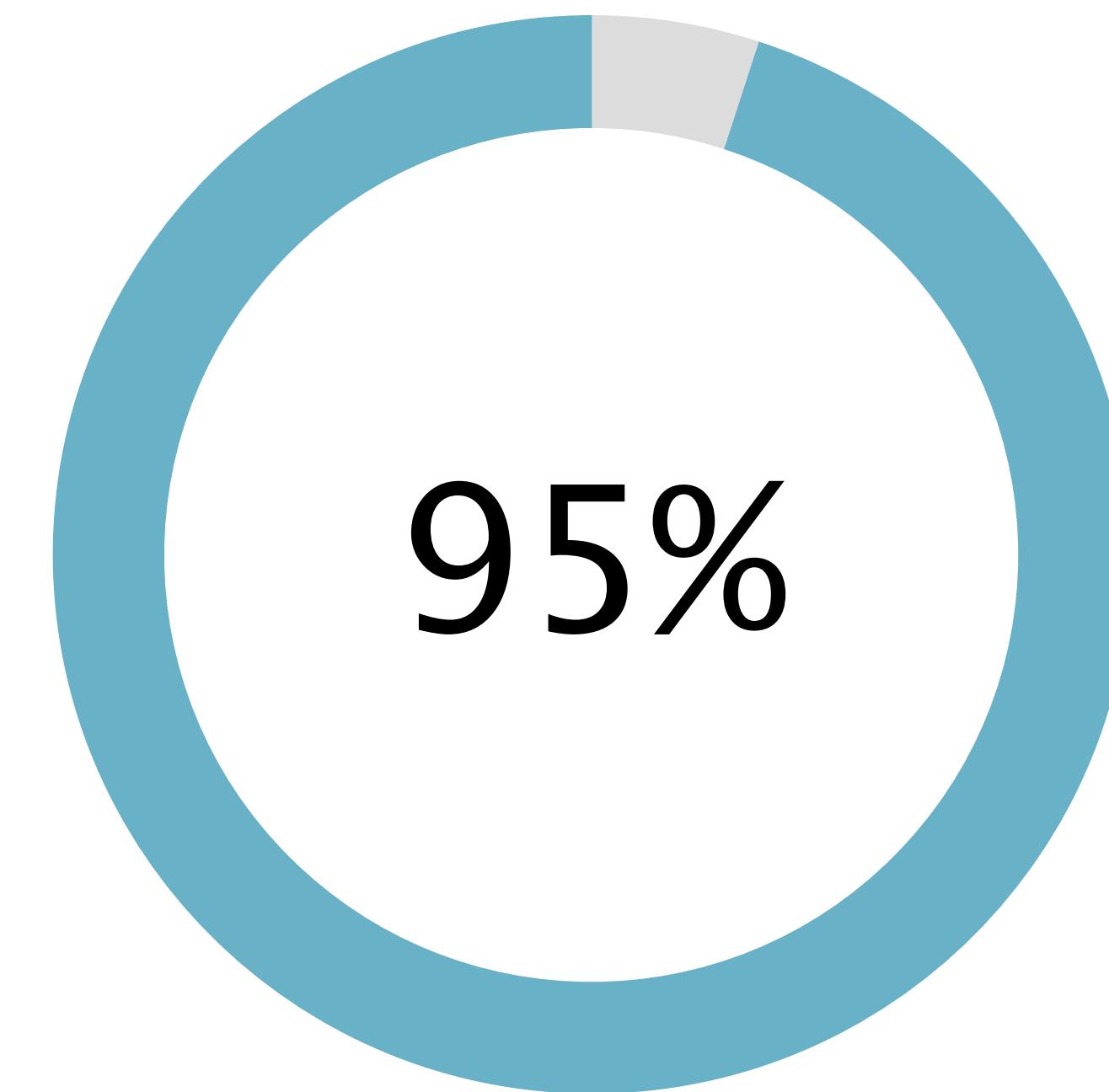
16个百度移动站点

# 轻应用开发者的看法

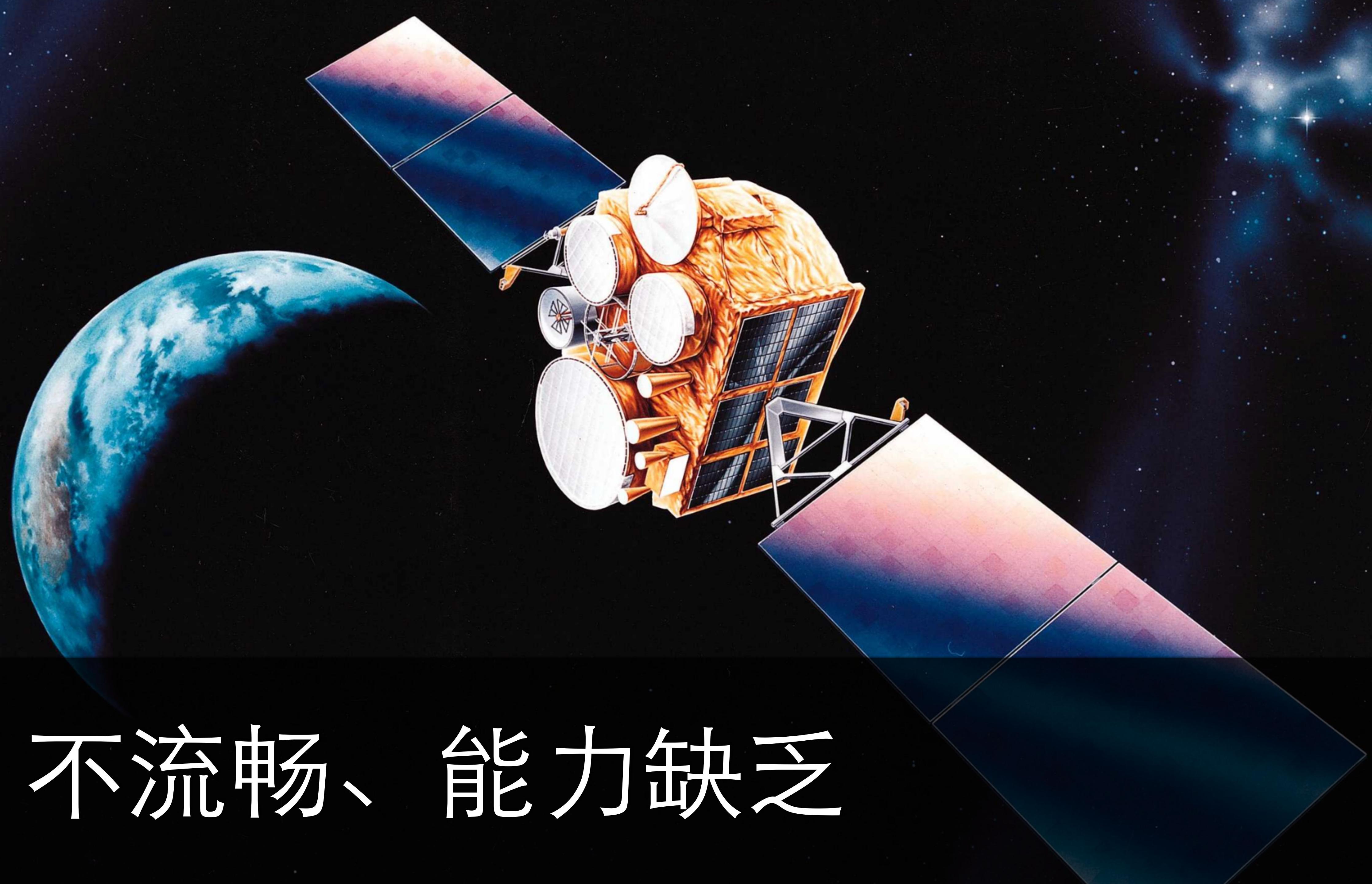
# 轻应用开发者的看法



愿意在Native app基础上  
开发webapp



希望使用百度的分发渠道



不流畅、能力缺乏



# BlendUI



# BlendUI

灵活、低耦的组件库及运行环境

使轻应用能力和体验媲美Native app



# Basecamp®

“Decisions based on computing speeds quickly decay”

“Native shell + native navigation”

– David

Creator of Ruby on Rails, partner at 37signals

The screenshot displays the BCX: Support mobile application interface. At the top, there's a header with the app name and navigation tabs for 'LATEST UPDATES', 'COMPLETED TO-DOS', 'DISCUSSIONS', and 'TO DO'. A red box highlights the 'Post a message' button in the top right corner, with the word 'Native' written in red next to it. Below this, a timeline shows several comments from users like 'Webview', 'Mig R.', and 'Ann G.' about a project titled 'For Support: Dates 2.0'. A green box highlights the first comment from 'Webview'. Further down, a 'Project calendar' section shows a weekly agenda with various events, including 'Today' and 'Blame Trevor'. A large green box highlights this calendar area. A 'New event' modal is open, prompting the user to 'Blame Trevor' on February 11, 2014, at any time. The modal includes fields for 'Add an optional note', 'When', 'Email to', 'Reminder', and 'Add this event' or 'Cancel' buttons. A red box highlights the 'Blame Trevor' text in the modal. At the bottom, there's a navigation bar with icons for back, home, and other functions.



挑战

性能、灵活

能力

(Android、iOS、Web)

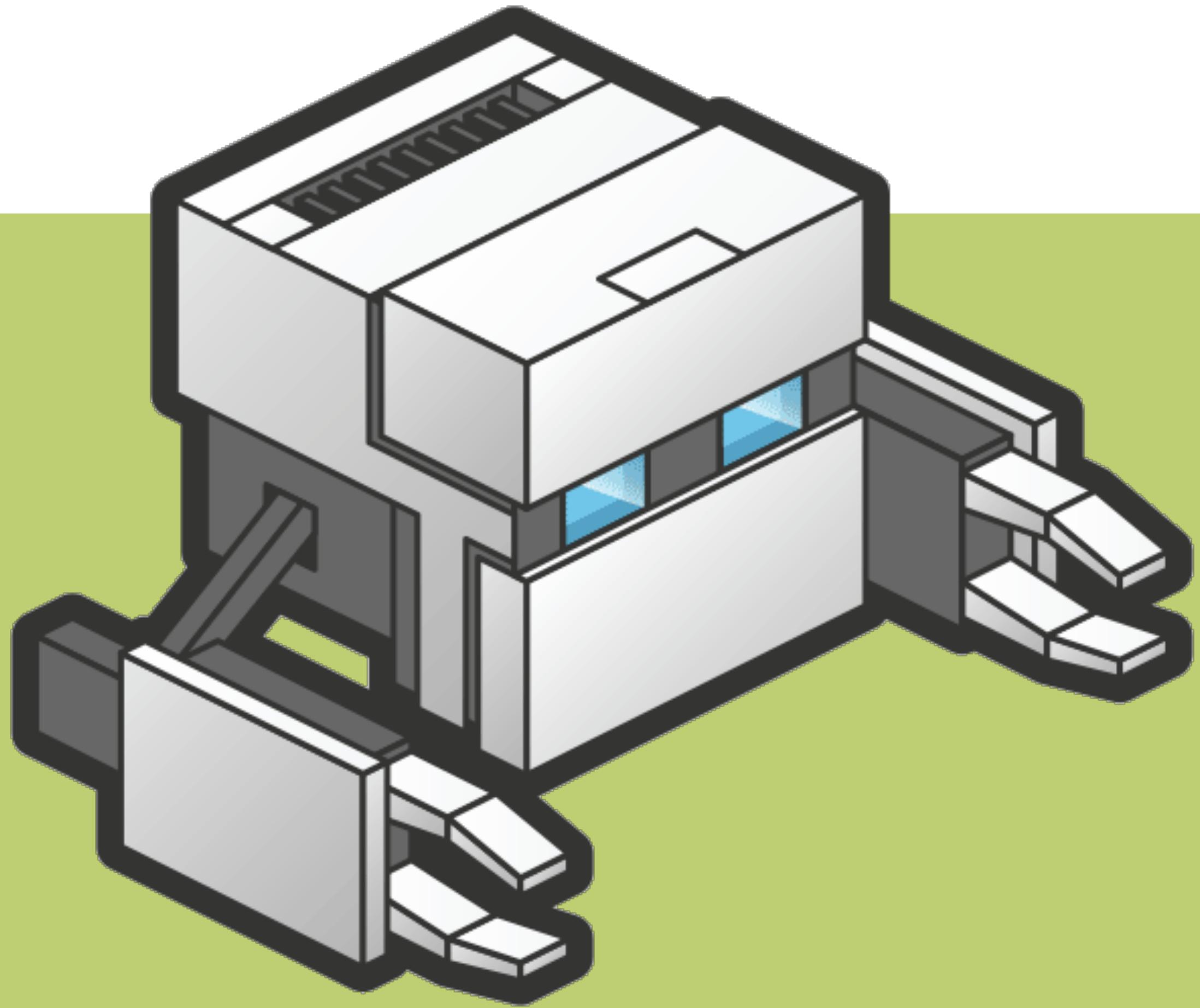
API

市场渠道

# Titanium Mobile

- 编译式，不灵活，复杂
- 用户量仅5%





# Phonegap

- 平台支持太多 —— API数量不足
- 对性能无帮助

# 目标

性能

(首要目标)

原生动画  
T5内核  
缩减DOM

灵活性

(带来无限可能)

动态扩展  
低耦合  
无限定制

能力

设备能力  
webview控制力  
云能力  
(push、支付)

API

Web for all  
浏览器退化版



设计思路



# 平衡Web与Native



# Native

- 性能高
- 动画流畅
- 系统开销可控

- 开发速度快
- 定制性极高
- 发版优势

# Web



**Every element can be a webview**







- 用极简的Native代码解决关键问题
- 无限的扩展能力
- 单个webview变小，局部性能可控
- Web API, Events...

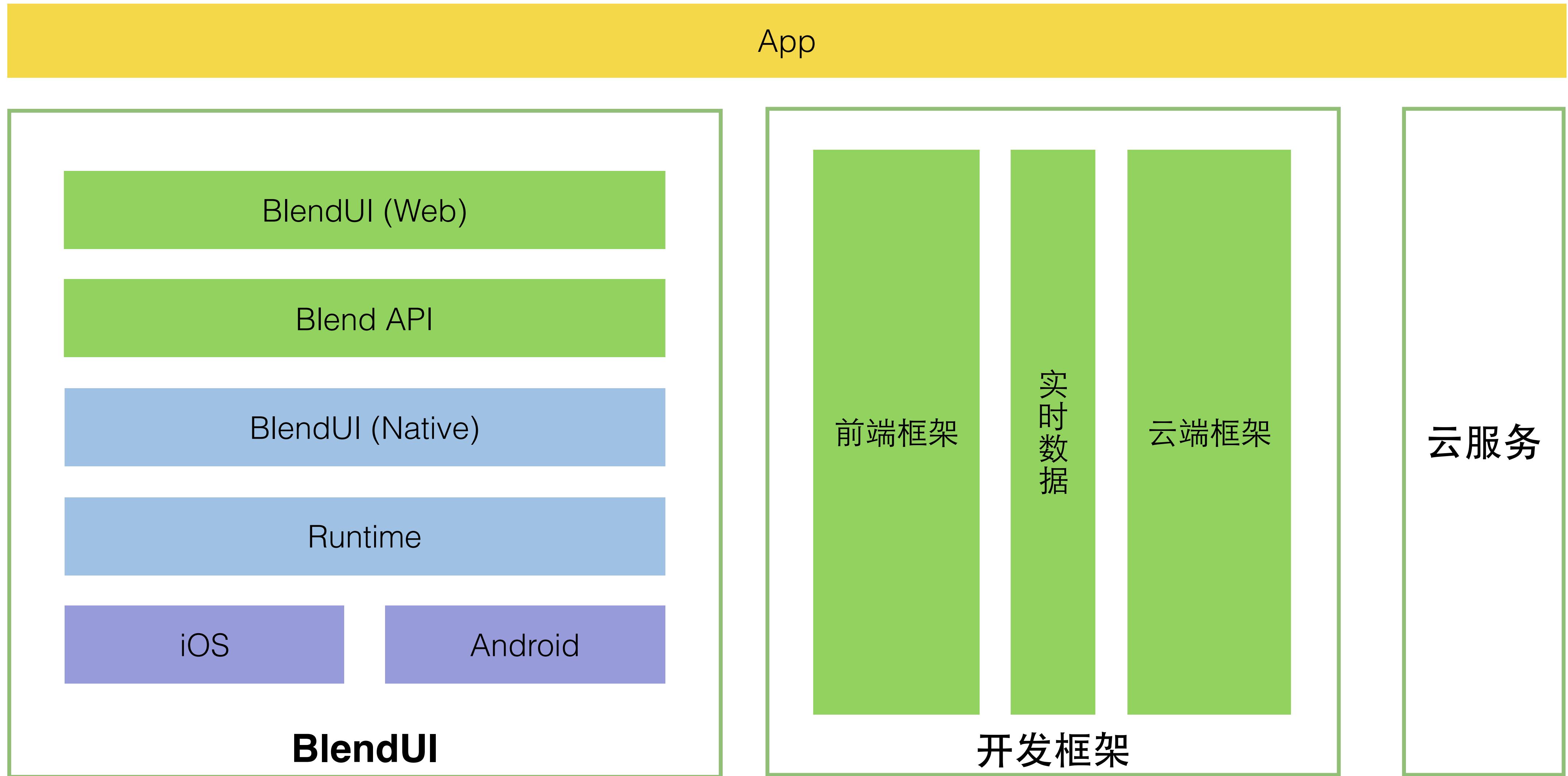
核心实现



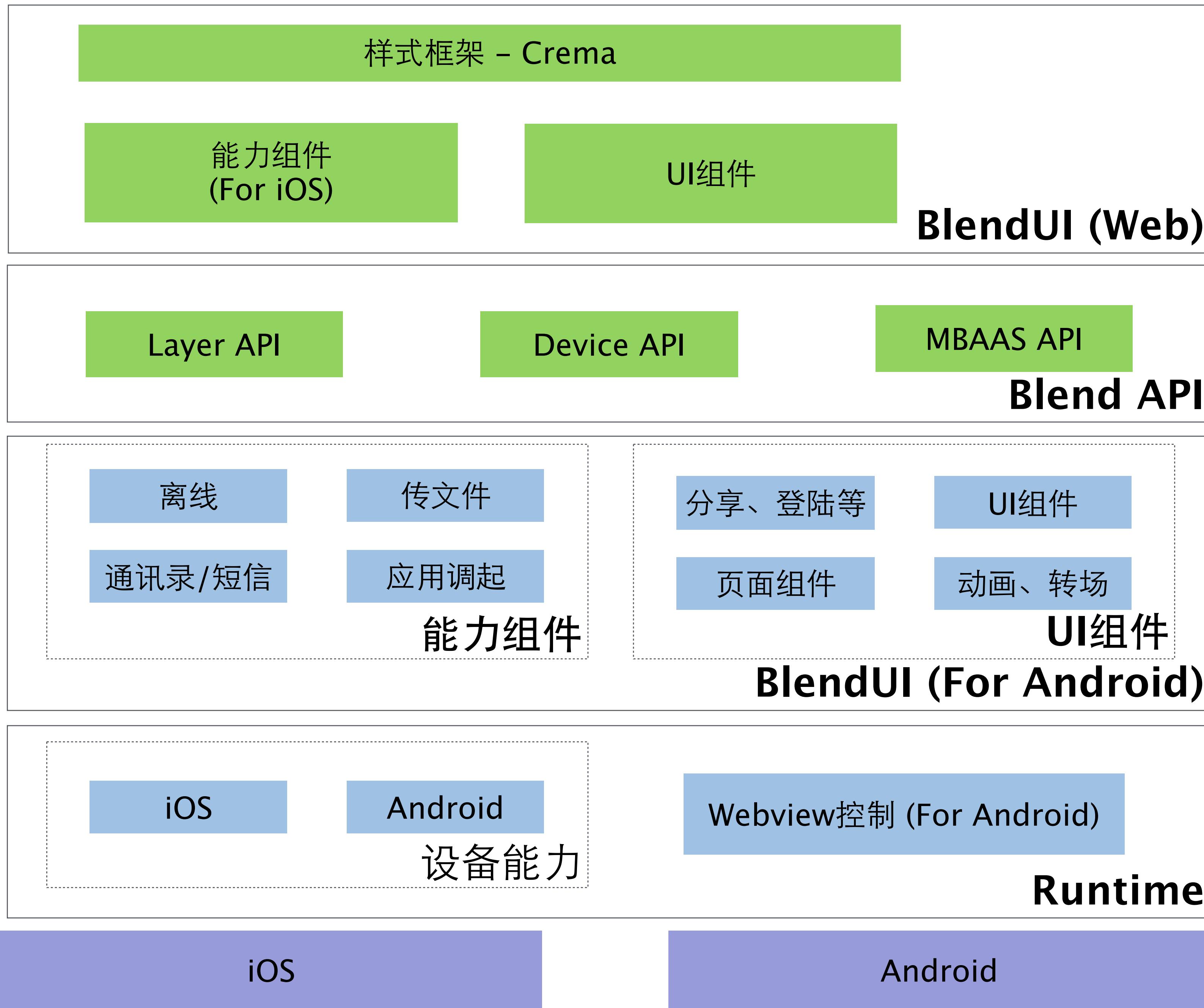
# 设计原则

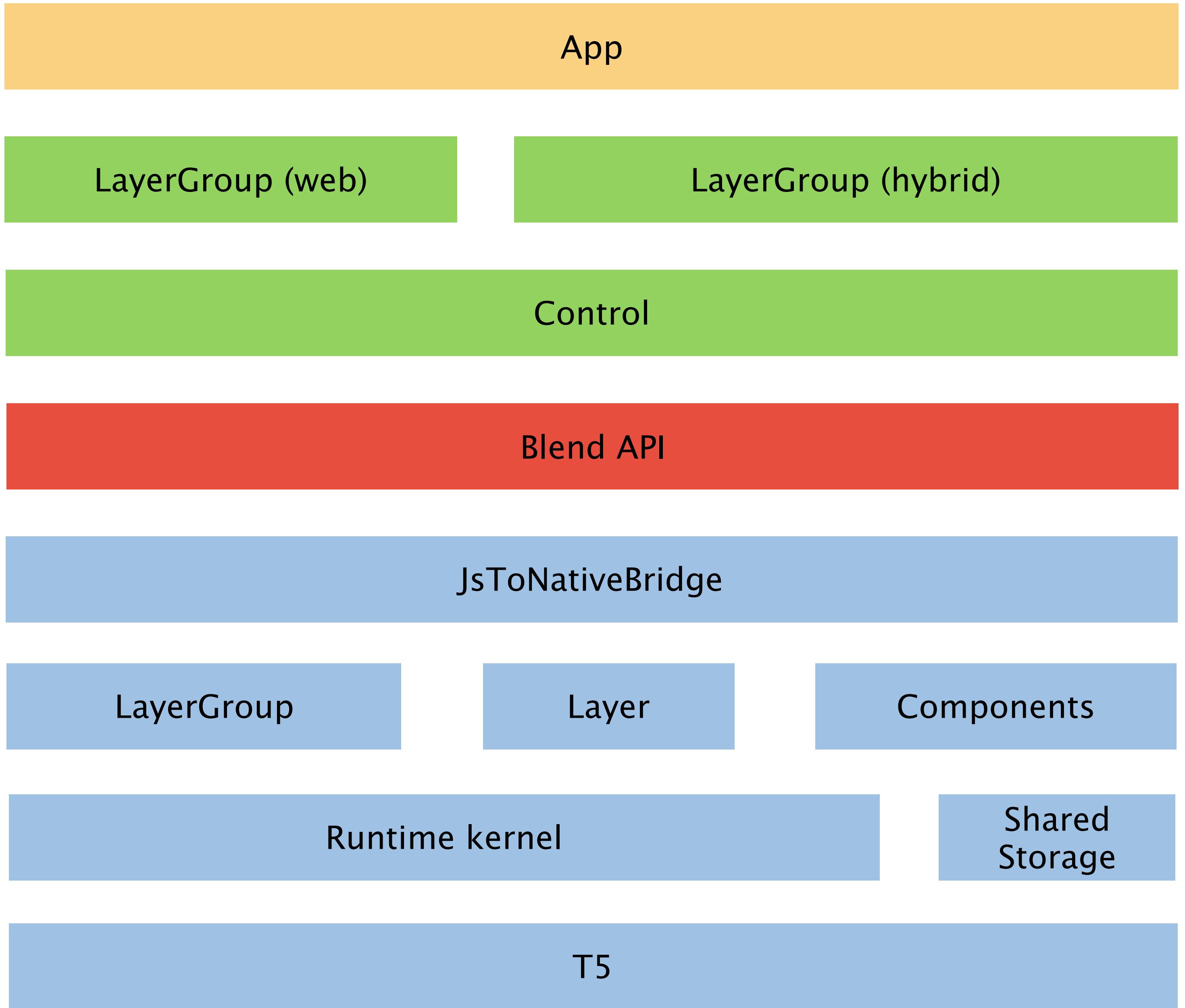
- 模型从简
- 事件驱动
- 尽可能灵活



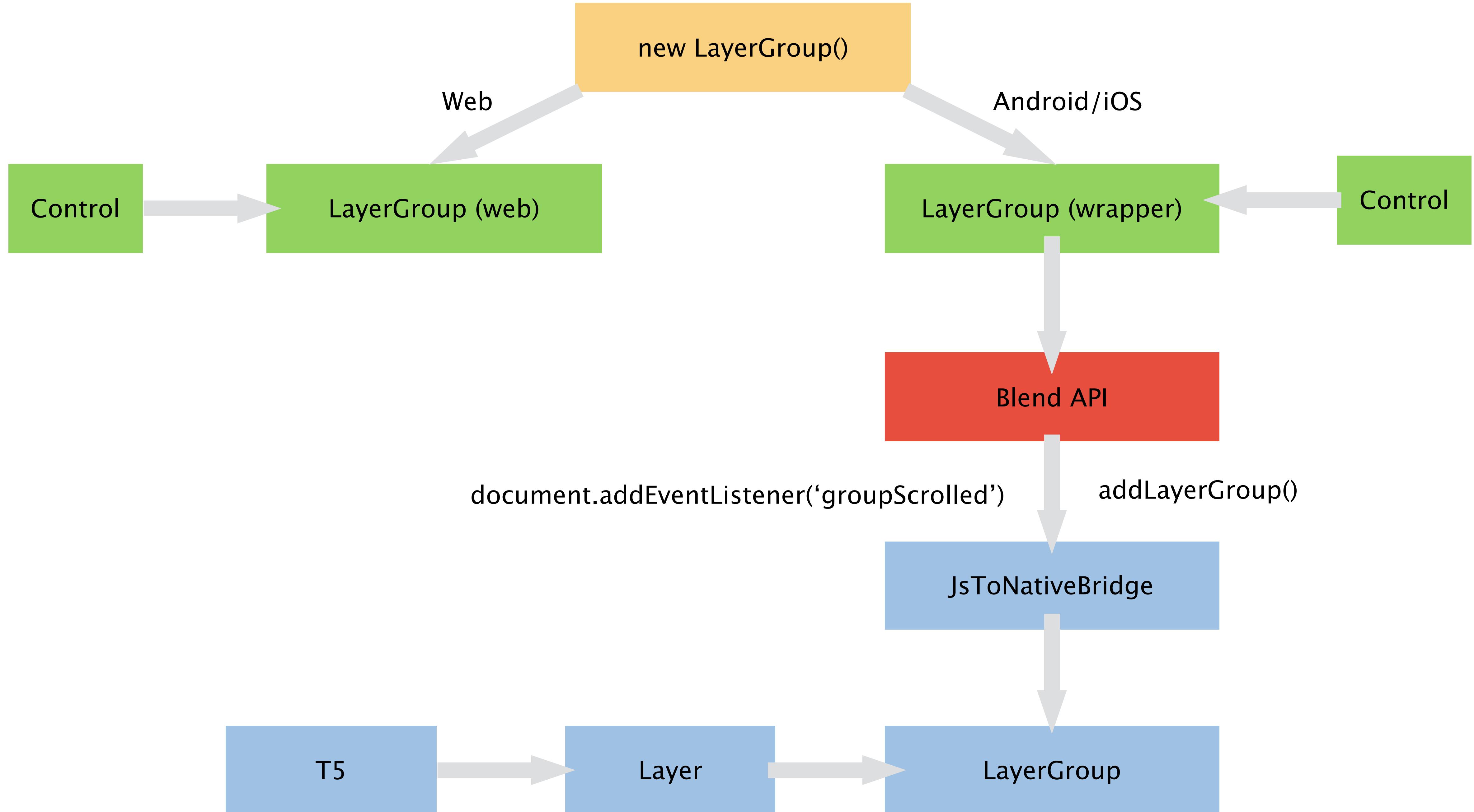


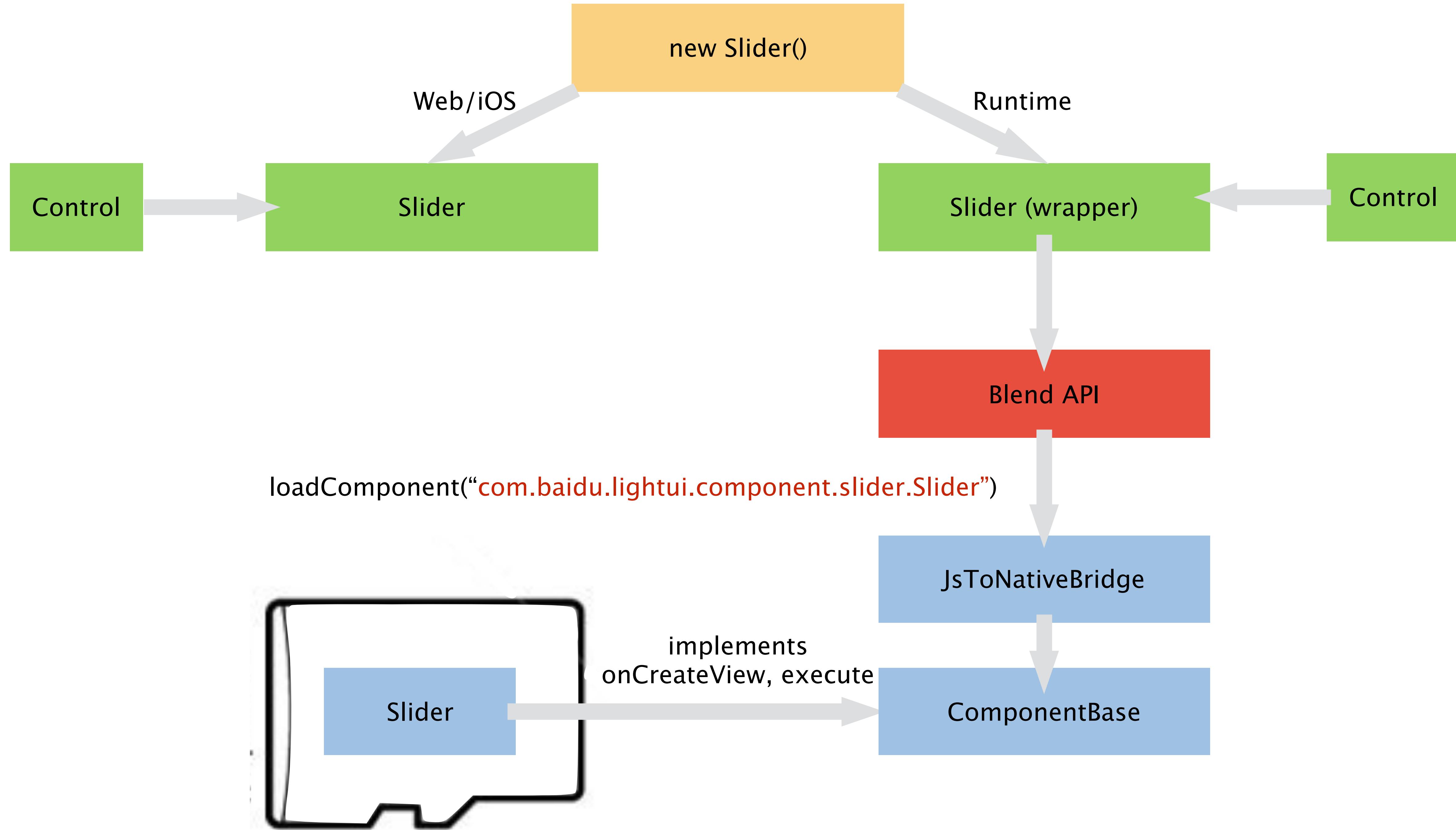
# System overview





# Technique overview







# Showcase

# 小米2 - 2012.8

4.3寸超大屏幕

2G RAM

1.5GHz 四核

骁龙 APQ8064



小米2 - 2012.8

4.3寸超大屏幕

2G RAM

1.5GHz 四核

骁龙 APQ8064

锤子 - 2014.5

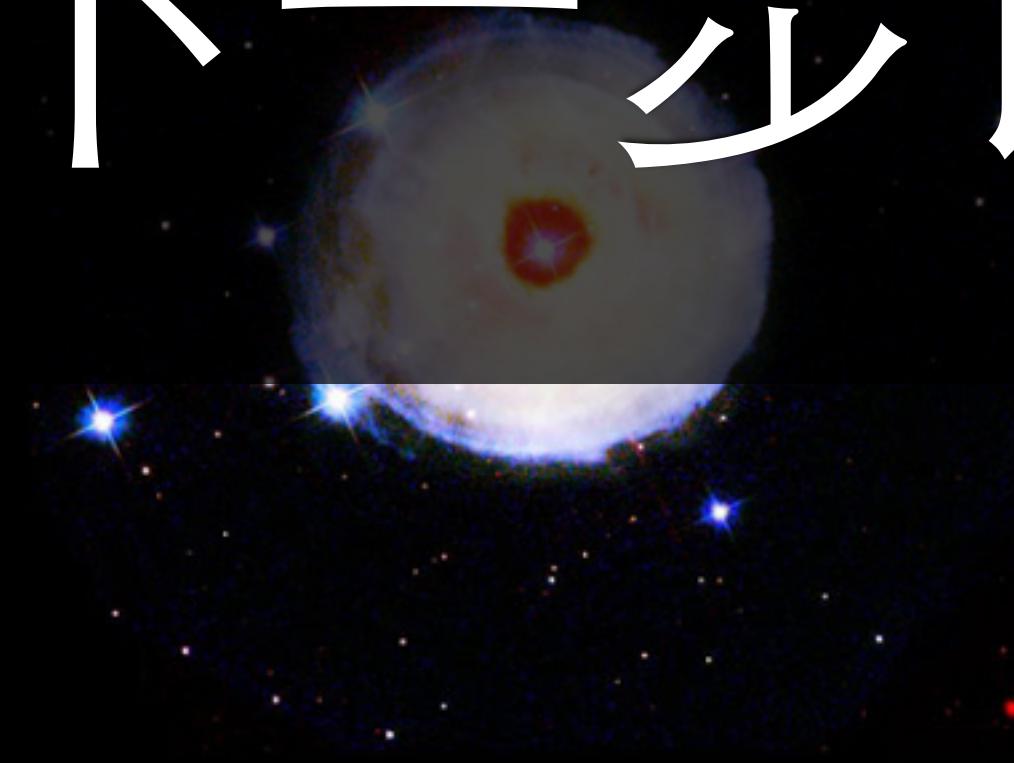
5.5寸1080P高清

3G RAM

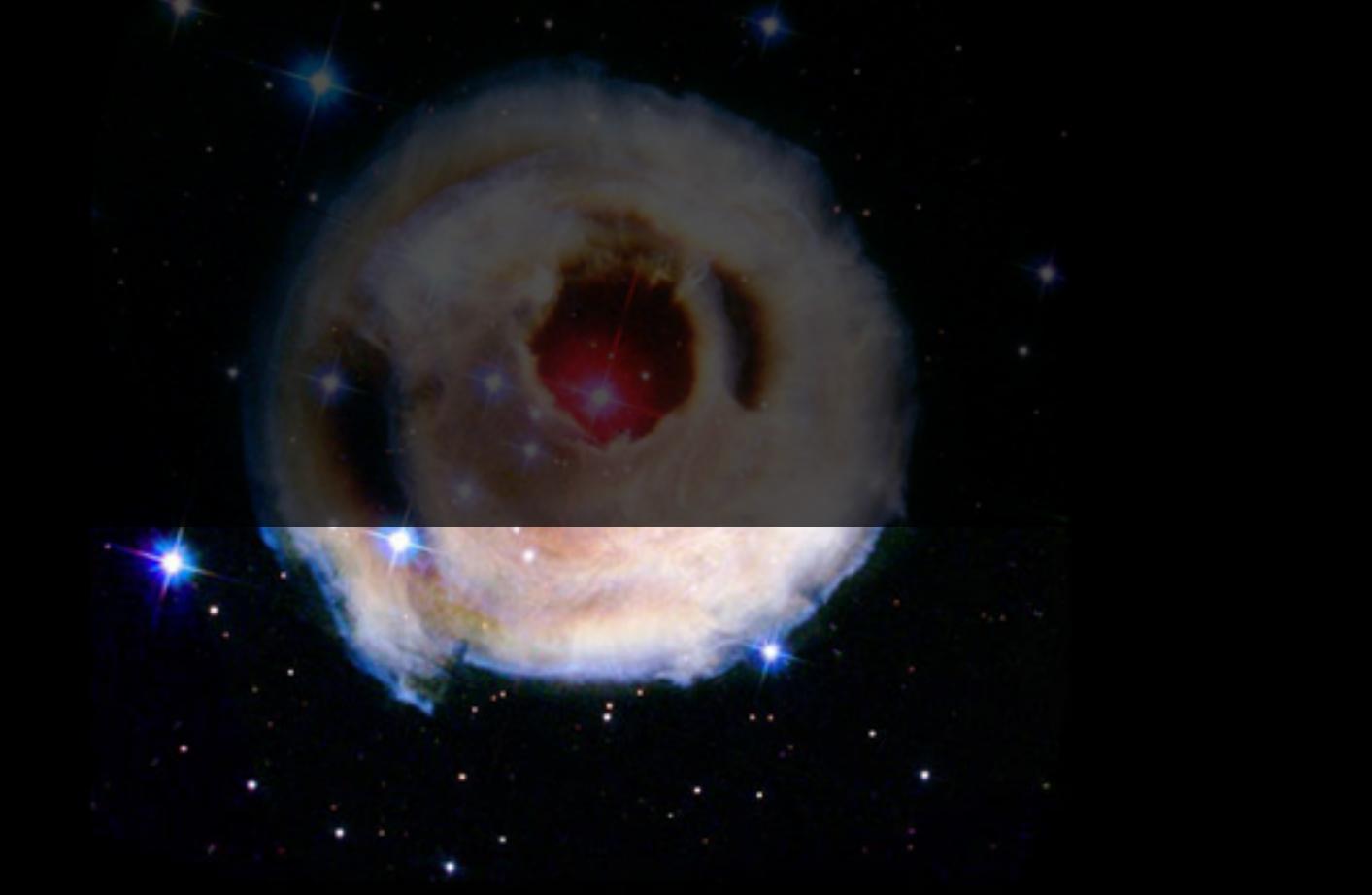
2.5GHz 四核

骁龙801

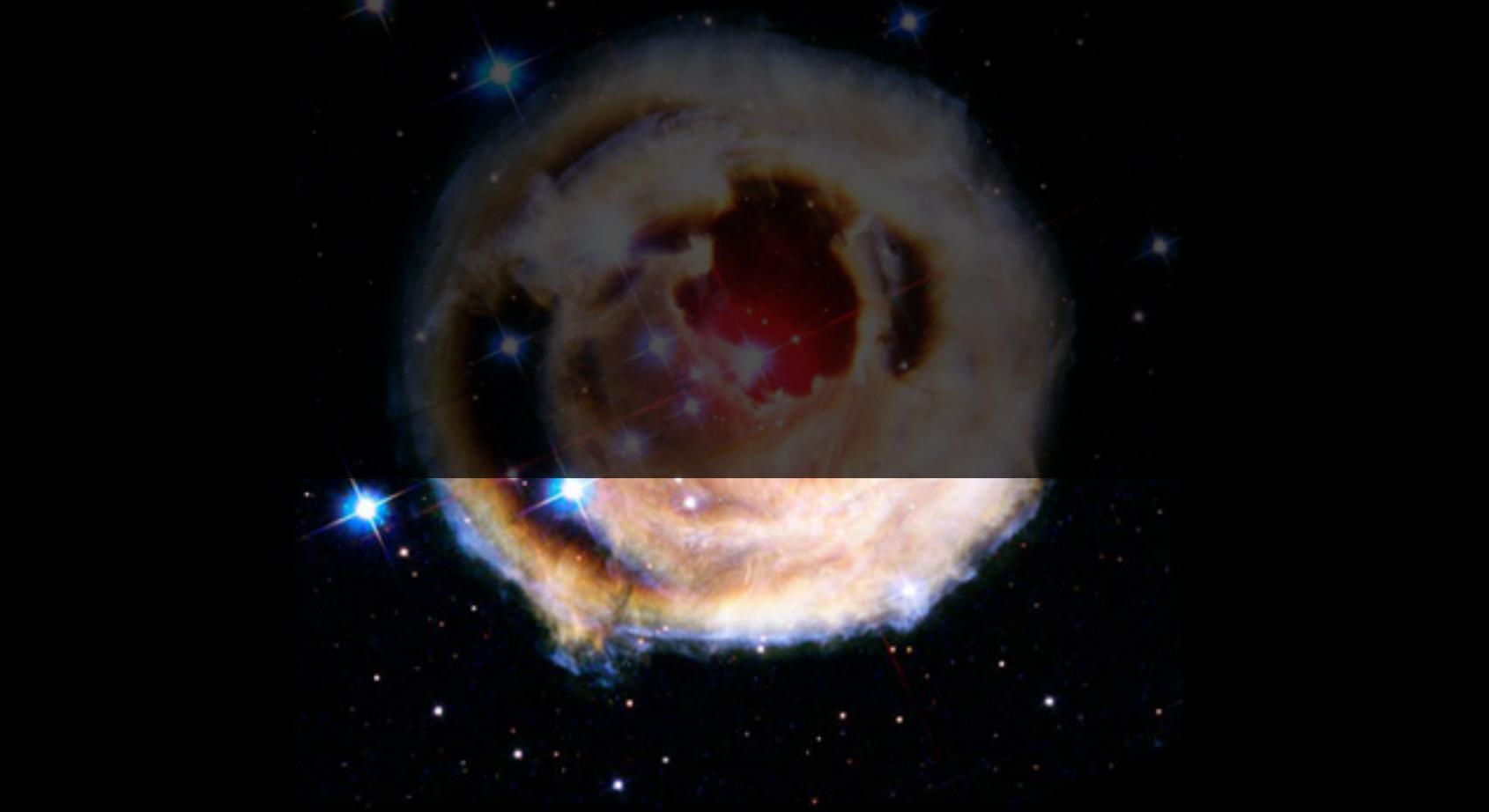
# 下一步计划



May 20, 2002



September 2, 2002



October 28, 2002



December 17, 2002



February 8, 2004



October 24, 2004

基础库

样式库

组件库

开发工具

第三方组件

细粒度  
适用面广

BlendUI

Clouda框架

体验与性能

云端一体

整体解决方案



- Web: 退化兼容浏览器
- Native:
  - 能力组件
  - 真正的离线
  - iOS版
- 开源、开放
  - 百度内部推广
  - 外部开发者

# 小结



- BlendUI用web封装轻量级的Native运行环境  
满足性能、灵活性、能力、API四方面要求
- 动画、调度、资源管理由Native保证性能和稳定性
- 可视元素通过独立的webview或Native组件实现

thanks

@berg



thanks

WeChat: 53769



thanks

berg@baidu.com

