

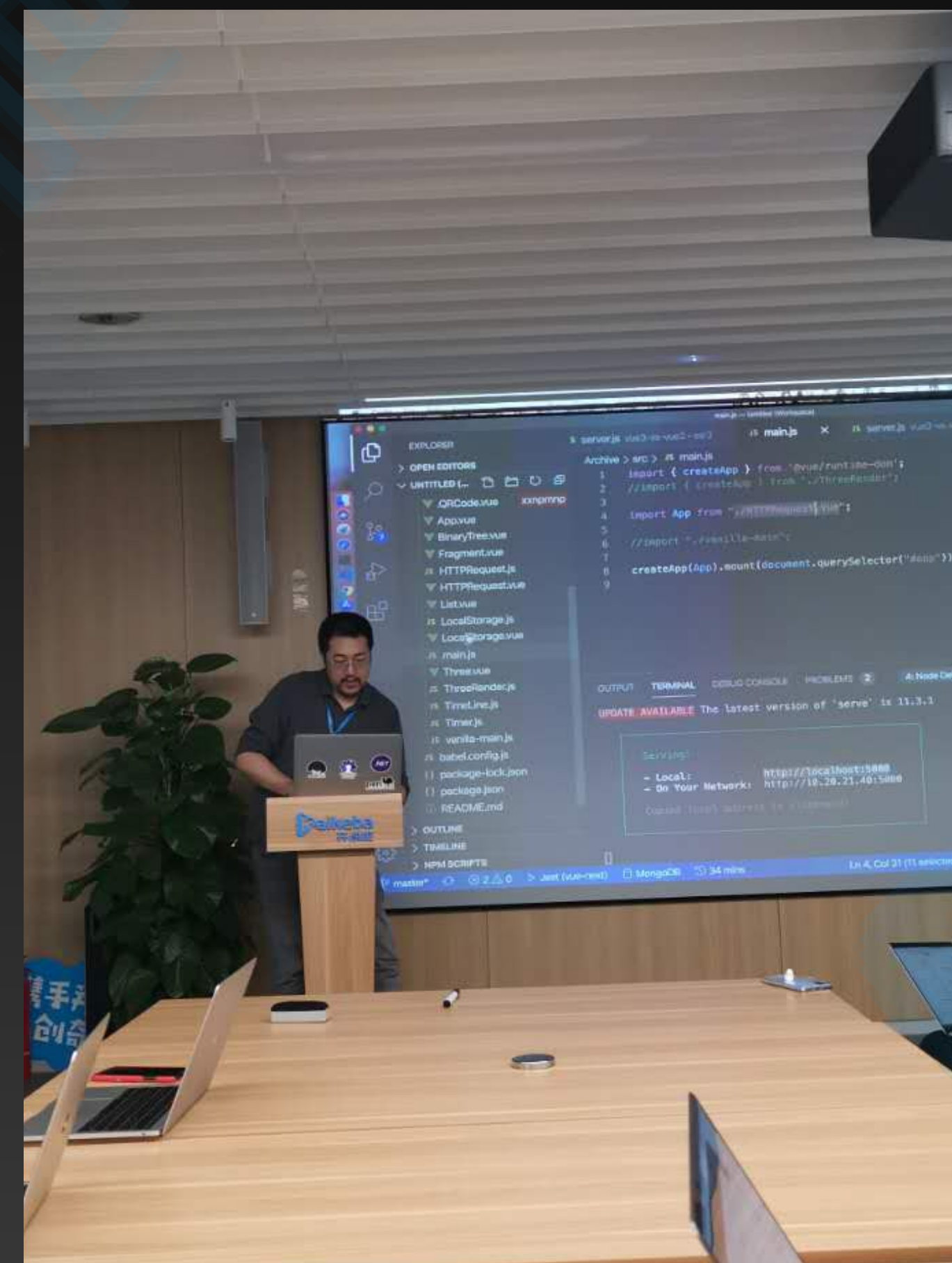
Vue3 实战+源码集训营

关于我

- 崔效瑞（好未来/egret 资深前端）
 - 键盘侠
 - TDD（测试驱动开发）实践者
- github: <https://github.com/cuixiaorui>
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- 掘金: <https://juejin.im/user/58feaeec61ff4b00667515f7/posts>

关于集训营

- 内部学习讨论受到 winter 的启发
- 玩中学 《飞机大战》



课程安排

- 第一天
 - 学习 Custom renderer api
 - 深入理解 vue3 初始化流程
 - 你将会掌握基于非 dom 的渲染器实现
- 第二天
 - 学习 composition api
 - 你将会掌握 composition api 的最佳实践
- 第三天
 - 深入源码，认识 update 核心流程
 - 你将会明白整个 vue3 运行时的核心流程框架
 - 掌握更加有效的源码阅读技巧

为什么要学习 vue3

- 投资知识
- 国内最火技术
- 招聘硬需求(亮点)
- 弯道超车最好的时机

Vue3 亮点

- Performance (比 vue2 runtime快了2倍)
- Tree shaking (按需编译代码)
- Ts support (更优秀的Ts支持)
- Composition API (组合 API)
- Custom Renderer API (自定义渲染器)
- 内置新特性组件

Highlights:

- Performance
- Tree-shaking support
- Composition API
- Fragment, Teleport, Suspense
- Better TypeScript support
- Custom Renderer API

性能

- 重写了虚拟 dom 的实现
- 编译模板的优化(运行时编译)
- update 性能提高
- SSR 速度提高

Performance

- Rewritten virtual dom implementation
- Compiler-informed fast paths
- More efficient component initialization
- 1.3~2x better update performance*
- 2~3x faster SSR*

Vue3 vs Vue2

	Chrome mount	Chrome update avg	Chrome update best	Chrome memory (mb)
Vue 2 template + with	93.46	23.17	16.44	11.9
Vue 3 template + with	77.43	9.18	7.69	4.5
Improvement over v2 (template + with)	20.70%	152.40%	113.78%	164.44%
Vue 2 render fn (manual h, no this access)	90.9	15.75	8.18	10.2
Vue 3 render fn (manual h, no this access)	76.46	7.56	5.33	7.4
Improvement over v2 (manual)	18.89%	108.33%	53.47%	37.84%
Vue 2 template no with	97.44	13.18	8.29	9.9
Vue 3 template no with	62.82	5.64	3.78	4.5
Improvement over v2 (template no with)	55.11%	133.69%	119.31%	120.00%
Vue 2 raw (no reactive state)	88.67	12.27	7.99	8.6
Vue 3 raw (no reactive state)	47.6	3.37	2.38	3.7
Improvement over v2 (raw)	86.28%	264.09%	235.71%	132.43%

Tree shaking

- 按需打包
- Vue2 纯 helloWorld: 31.94kb

Tree-shaking

- Most optional features (e.g. v-model, <transition>) are now tree-shakable
- Bare-bone HelloWorld size: **13.5kb**
 - 11.75kb with only Composition API support
- All runtime features included: **22.5kb**
 - More features but still lighter than Vue 2

TypeScript Support

- 自动的类型定义提示

```
    });  
    },  
    setup(props: {}, ctx:  
      SetupContext<Record<string, any>>): void |  
      RenderFunction  
  setup(,){  
  
  }  
});
```

Better TypeScript Support

- Codebase written in TS w/ auto-generated type definitions
- API is the same in JS and TS
 - In fact, code will also be largely the same
- TSX support
- Class component is still supported ([vue-class-component@next](#) is currently in alpha)

Fragment

- 不再限于模板中的单个根节点

Fragments

- No longer limited to a single root node in templates
- Manual render functions can simply return Arrays
- “Just works”

▼ HelloWorld.vue vue3/src/components/HelloWorld.vue/ { } "HelloWorld.vue"/ script

You, a few seconds ago | 1 author (You)

```
1 <template>
2   <div>hello</div>
3   <div>world</div>
4 </template>
```


Composition API

- 灵活的逻辑组合与复用
- 响应式对象
 - ref
 - reactive
- 生命周期
 - onMounted
 - onUnmounted



Custom Renderer API

- 解决什么问题

Custom Renderer API

- NativeScript Vue integration underway by [@rigor789](#)
- Users already experimenting w/ WebGL custom renderer that can be used alongside a normal Vue application ([Vugel](#))

解决什么问题

```
App.vue demo-vue/src/App.vue/{} "App.vue"/script
1 <template>
2   <div id="app">
3     
4     <HelloWorld msg="Welcome to Your Vue.js App"/>
5   </div>
6 </template>
7
8 <script>
9 import HelloWorld from './components/HelloWorld.vue'
10
```



iPhone 5/SE 320 x 568 100%

babel eslint

Dom

vas

Elements Console Sources Network Performance Memory App

CTYPE html>

仅展示半年内微博，此微博已不可见。

10 169

Console What's New

3 messages [HMR] Waiting for update signal from WDS... [DEFAULT]: WARN : Using DEFAULT root loader

总结为什么学vue3

- 更快
- 更好
- 2020前端er 必须要掌握的技术

今天的主要内容

- 构建《飞机大战》第一步
- 基于 canvas 的 Custom Renderer 实现
- Vue3 初始化源码流程分析

Custom Renderer API

- createRenderer
- 接口
 - createElement
 - insert
 - patchProp

```
import {
  createRenderer,
} from '@vue/runtime-core'

function ensureRenderer() {
  return renderer || (renderer = createRenderer(rendererOptions))
}
```

实现自定义的 renderer

- canvas 和 vue3 的碰撞
- canvas --> pixi.js
- 目标：vue3 结合 pixi.js 实现把图形绘制到 canvas 上

setup 环境

- 配置 webpack
- 配置 scripts
 - build
 - serve

实现 renderer

- `createRenderer({...nodeOps, patchProp})`
- `const nodeOps = {}`
- `function patchProp(){}`

构建程序入口

- createApp()

JS main.js demo-vue/src/main.js

You, a few seconds ago | 1 author (You)

```
1 | import { createApp } from "vue";  
2 | import App from "./App.vue";  
3 | createApp(App).mount("#app");  
4 |
```

构建 canvas 根容器

- 引入 pixi.js
- 初始化 canvas 容器

构建根组件

- `defineComposition()`
- `Renderer`
- `h`
- `vnode`

完善渲染接口

- insert
- createElement
- setElementText

完善 patchProp

- patchProp(el, key, prevValue, nextValue)

Runtime-dom

- 读一读源码

custom Renderer 实现原理

- 深入 runtime-core 模块
- 分析 insert 和 createElement 的整个流程

总结

- 自定义渲染器
 - 是什么
 - 怎么用
 - 实现原理
- Vue3 运行时初始化流程分析