

开发套件解析

XXX
XXX

| DevEco开发套件特性介绍

环境配置 —— 工程管理 —— AI辅助编程 —— 编译构建 —— 预览 —— 调试 —— 模拟器

HUAWEI DevEco开发套件

学习评估

开发

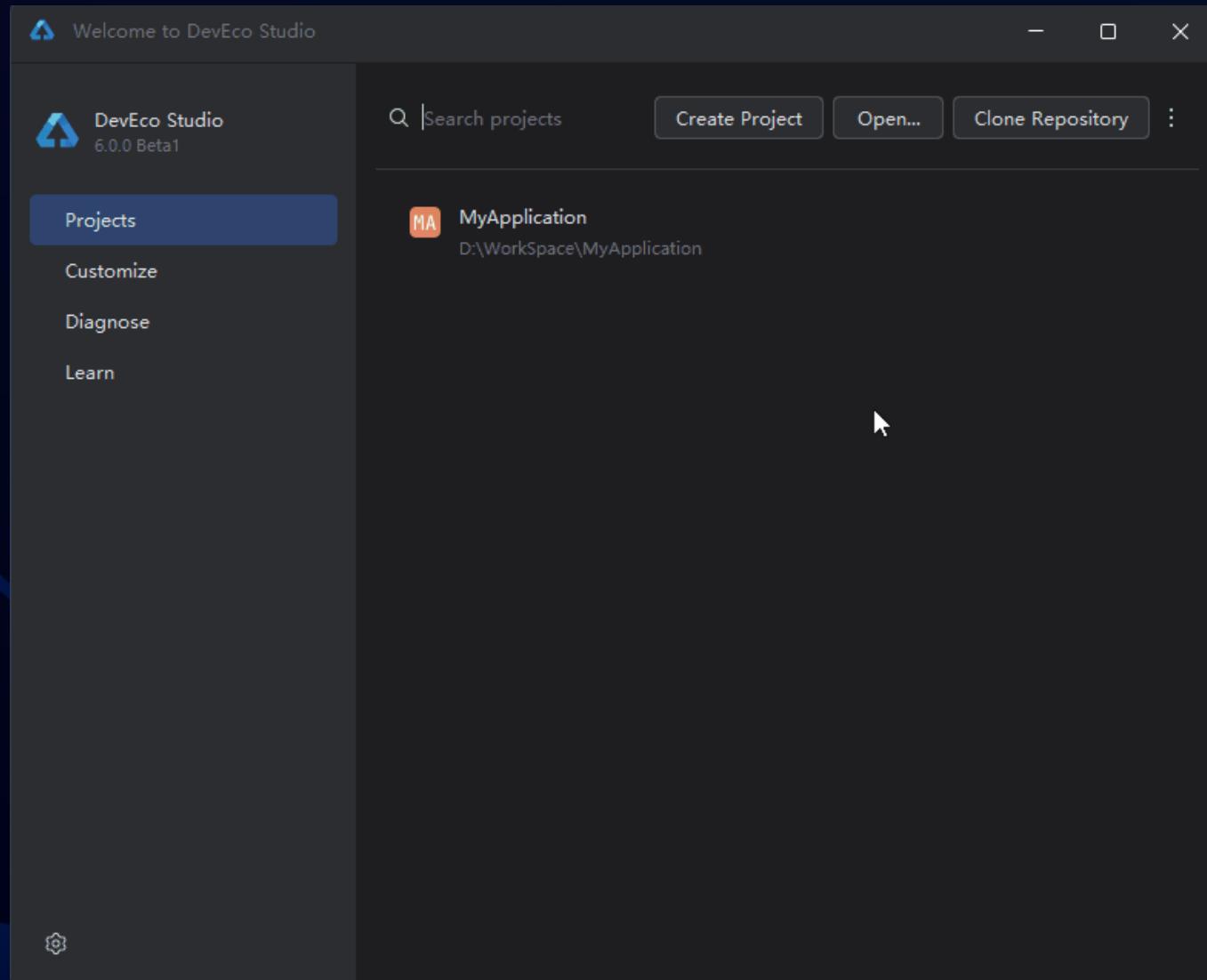
上架运维



助力开发者更高效地开发出体验更优的应用

*本次活动分享内容仅代表个人观点，不代表华为官方观点

环境诊断与一站式修复



*本次活动分享内容仅代表个人观点，不代表华为官方观点

新建工程

Choose Your Ability Template

Application

Atomic Service

Template Market

Empty Ability

Native C++

[CloudDev]Empty Ability

Application:
An installation-required app.
Access the app by touching the app icon on the home screen.

Empty Ability
This template implements the basic Hello World functions.

Cancel Previous Next

Create Project

Configure Your Project

Project name:

Bundle name:

Save location:

Compatible SDK:

Module name:

Device type: Phone Tablet 2in1 Car Wearable TV

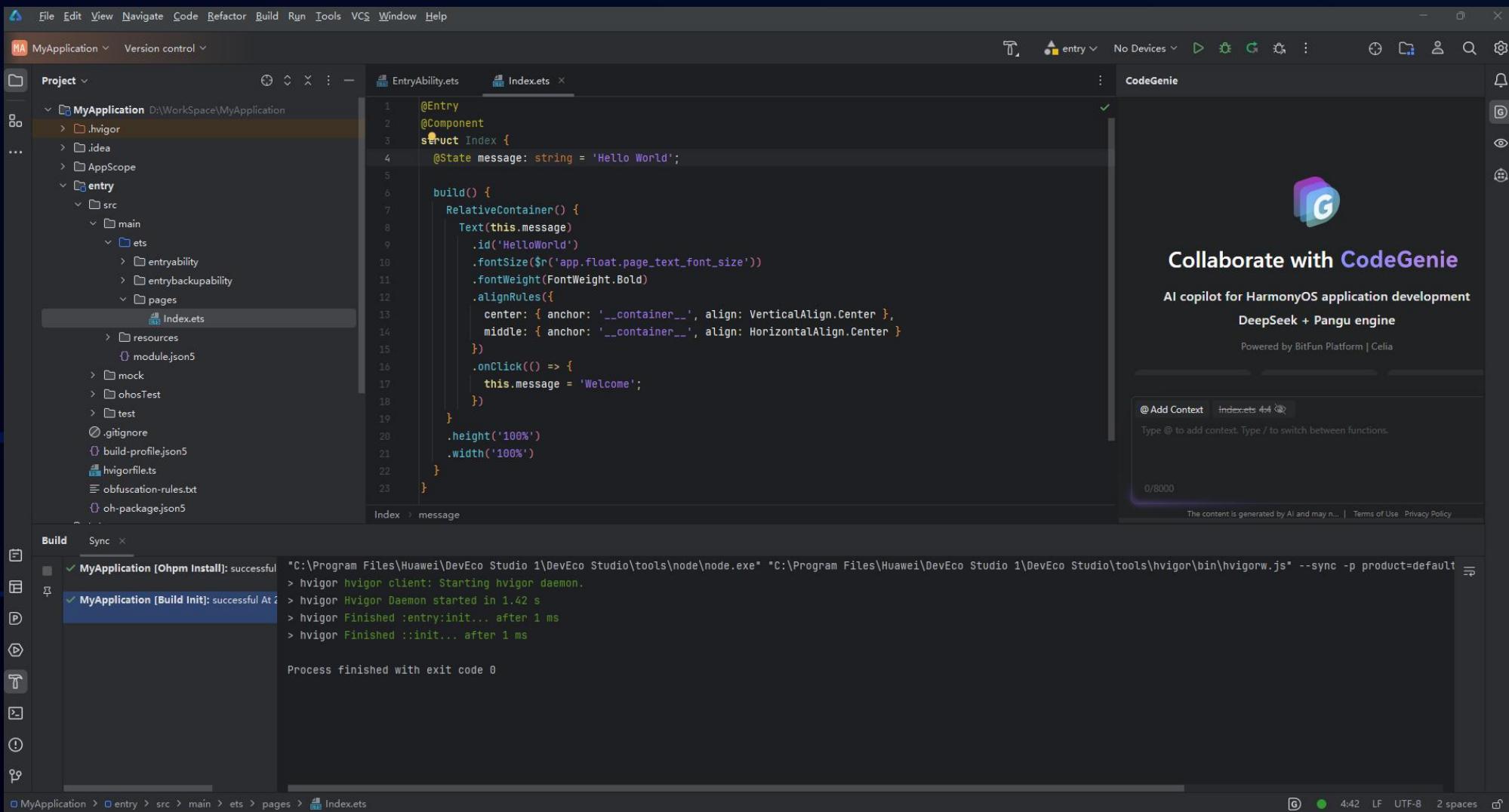
Hello World

Empty Ability

Cancel Previous Finish

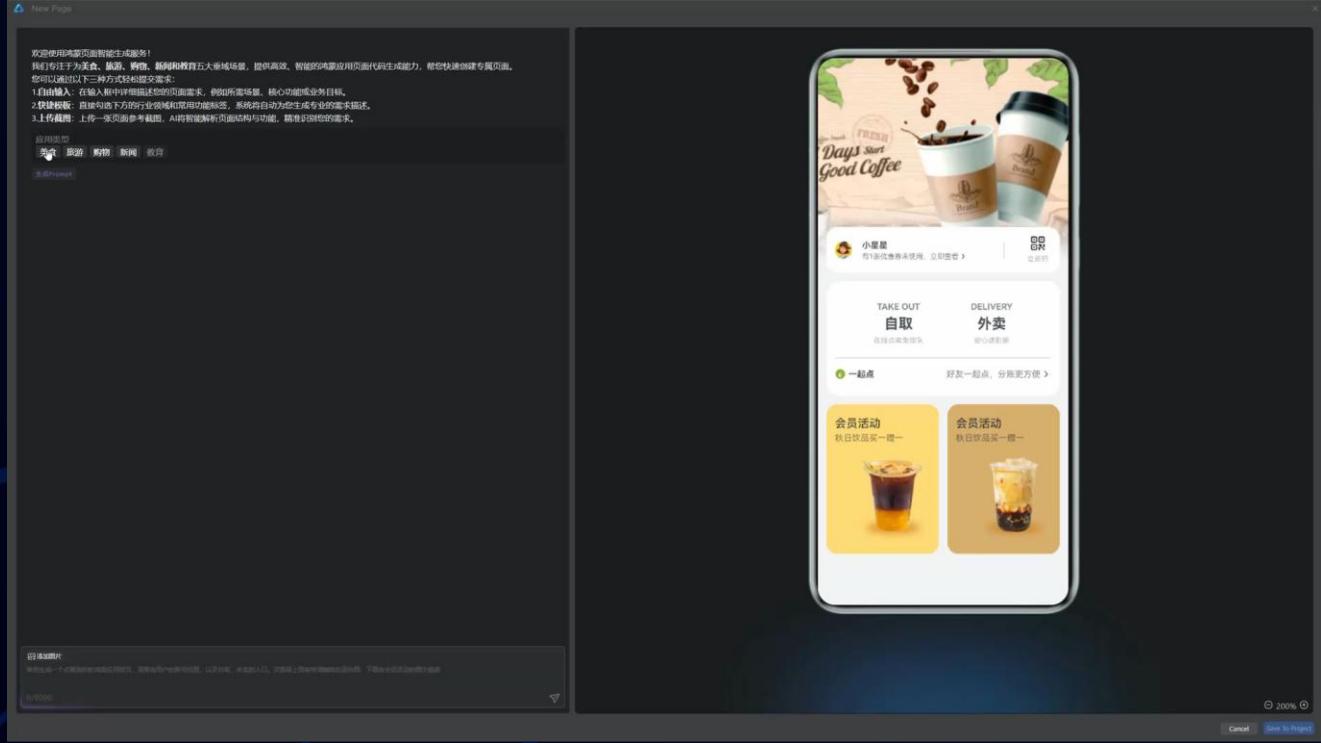
*本次活动分享内容仅代表个人观点，不代表华为官方观点

工程页面介绍



*本次活动分享内容仅代表个人观点，不代表华为官方观点

自然语言交互，从0->1完成界面框架创建



行业组件模板知识库

18大 垂域 30+ 模板 30+ 组件 12w+ 代码

鸿蒙领域知识库

鸿蒙应用开源代码 鸿蒙应用官方资料 最佳实践

2.1B Tokens

*本次活动分享内容仅代表个人观点，不代表华为官方观点

鸿蒙应用代码续写与编辑区对话编程

The screenshot shows a HarmonyOS application development environment. On the left is a project tree for a project named 'WaterFlowList'. The main area displays a file named 'Index.ets' containing ETS (HarmonyOS) code. A floating window titled 'CodeGenie' provides AI-powered assistance, including 'Generate UI Code', 'HarmonyOS Q&A', and 'DeepSeek + Pangui engine'. The bottom right corner of the screen shows a watermark for 'Collaborate with CodeGenie'.

```
export struct Index {  
    aboutToAppear(): void {  
        this.waterFlowView.preCreate('BlogItemContainer', 30);  
        this.waterFlowView.preCreate('AdaptiveTextComponent', 30);  
        this.waterFlowView.preCreate('GridImageItemContainer', 30);  
  
        Logger.info("WaterFlowPage=> nodePool : " + JSON.stringify(util.getHash(this.waterFlowView.getRecyclePool())));  
    }  
  
    /**  
     * 初始化view参数  
     */  
    initView(): void {  
        let attr: WaterFlowAttribute = this.waterFlowView.setViewStyle({ scroller: this.scroller });  
        // 通过attr设置view的宽, 高, gap及根  
        // 读式初始化view的宽, 高, gap及根  
    }  
  
    loadBlogData(): Promise<BlogData[]> {  
        return new Promise<BlogData[]>((resolve, reject) => {  
            setTimeout(() => {  
                resolve(generateRandomBlogData());  
            }, 500);  
        })  
    }  
  
    /**  
     * 将数据加载到view中  
     */  
    loadDataToView(): Promise<string> {  
        // 将Blog数据添加到view中  
        //  
        // @param data 待添加的Blog数据  
    }  
}
```

100+ 代码场景上下文感知

30W+ 高质量SFT代码增训

鸿蒙应用代码采纳率 40%+

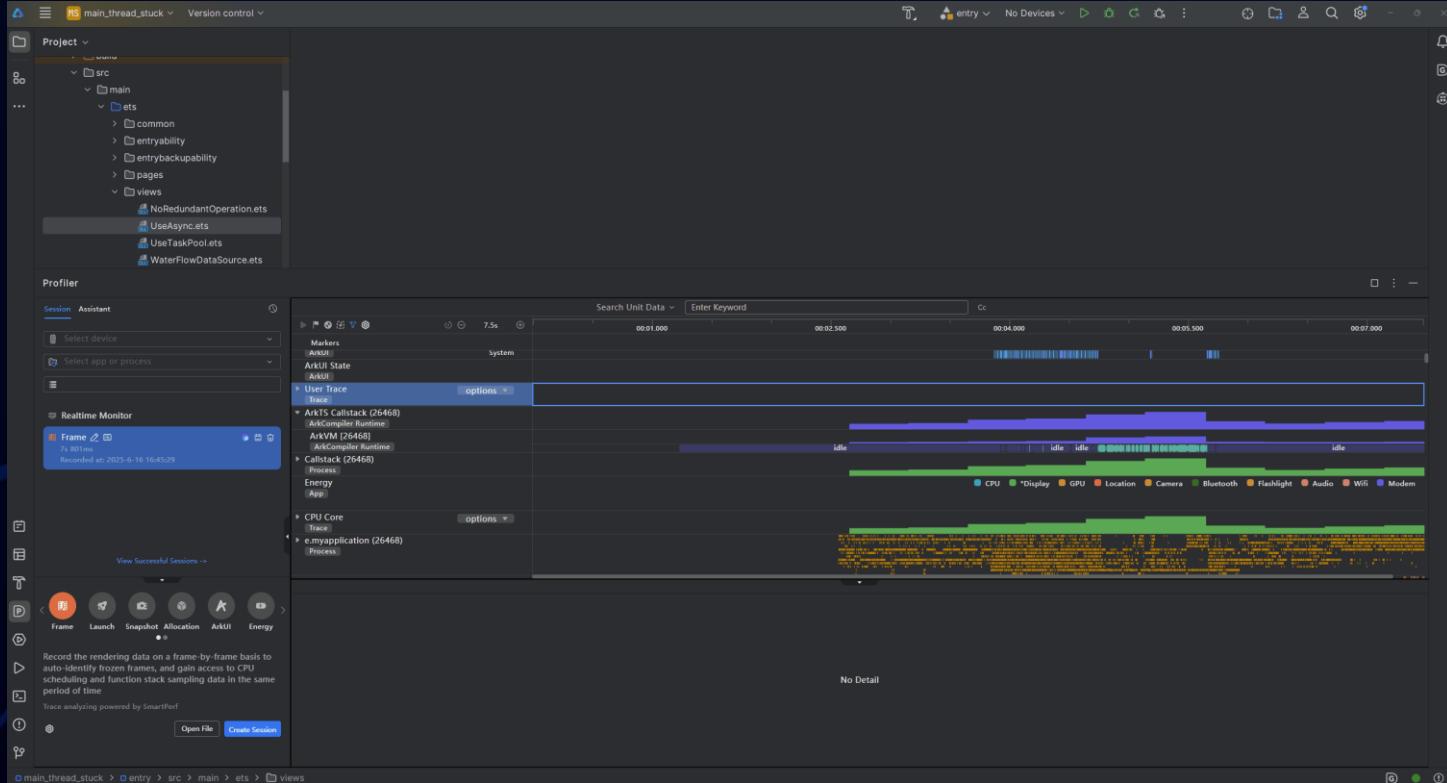
错误智能修复，快速多轮验证修复结果

语法错误场景70%覆盖

专家知识库错误分析

分钟级修复复杂语法错误

AI自主引导开发者零门槛完成性能问题定位



10+典型性能问题场景

100+真实性能问题定位案例

20+AI专属性能调优工具集

| DevEco H vigor构建过程新秘籍

编译加速

构建进程服务化

最优化编译流程

动态扩展

构建任务插件

编译流程插桩

可视化展示

构建过程动态展示

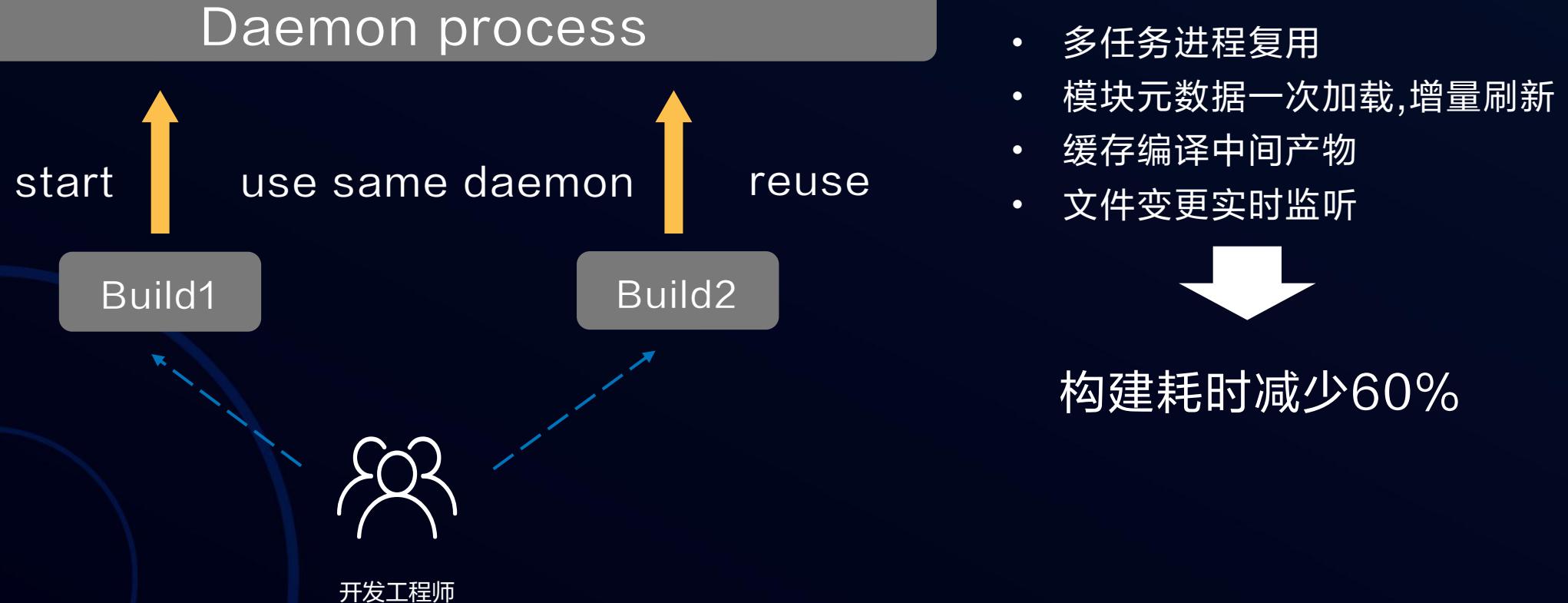
历史记录日志呈现

多目标构建

多场景多目标构建

product-target实践

提升构建效率: 进程常驻



构建效率优化演示

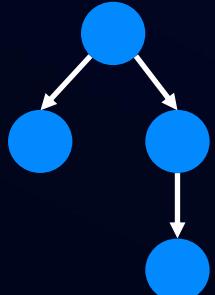
The screenshot shows a code editor interface with the following details:

- Project Explorer:** Shows the project structure under "HmosWorld-1012api14". Key folders include ".higor", "AppScope", "common", ".preview", "build", and "src" which contains "main" and "ets" sub-folders. "Achieve.ets" is selected.
- Code Editor:** Displays the content of "higor-config.json5". The code defines various build configurations such as dependencies, execution modes, logging levels, and nodeOptions.
- Terminal:** Shows the build logs for "HmosWorld-1012api14 [assembleHap]". The logs indicate the process of generating native libraries, signing configurations, and assembling the application. The final message is "higor BUILD SUCCESSFUL in 752 ms".
- Status Bar:** Shows the file path "D:\demo\HmosWorld-1012api14\HmosWorld-1012api14\higor-config.json5", the exit code "0", and the JSON encoding information.

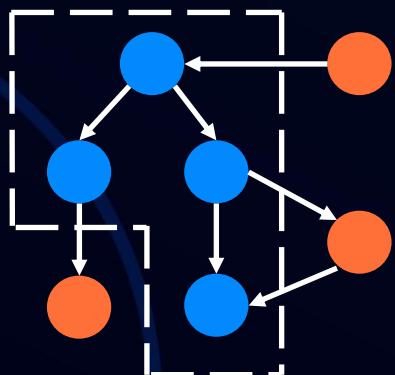
一次创建, 系统常驻
极速响应
减少进程资源开销与损耗
精简编译流程

动态扩展：自定义构建任务扩展插件

默认插件
@ohos/hvigor-ohos-plugin



自定义插件
@hvigor/plugin-xxx



```
import { hapTasks } from '@ohos/hvigor-ohos-plugin'
import { xxxPlugin } from '@hvigor/plugin-xxx'

export default [
  system: hapTasks,
  plugins: [xxxPlugin]
]
```

● Build-in Task
● Custom Task

- 自由灵活定制
- 插件化开发范式
- 一次开发 多工程复用

任务扩展插件演示

The screenshot shows a code editor interface with the following details:

- Project View:** Shows a file tree for a project named "MyApplication31 [MyApplication]". The tree includes ".hvigor", ".idea", "AppScope", "resources", "app.json5", "demo" (containing "index.ts", "package.json", "tsconfig.json"), "entry", "hvigor" (containing "hvigor-config.json5"), "oh_modules", ".gitignore", "build-profile.json5", "code-linter.json5", "hvigorfile.ts", "local.properties", "oh-package.json5", and "oh-package-lock.json5".
- Code Editor:** The current file is "hvigorfile.ts". The code content is as follows:

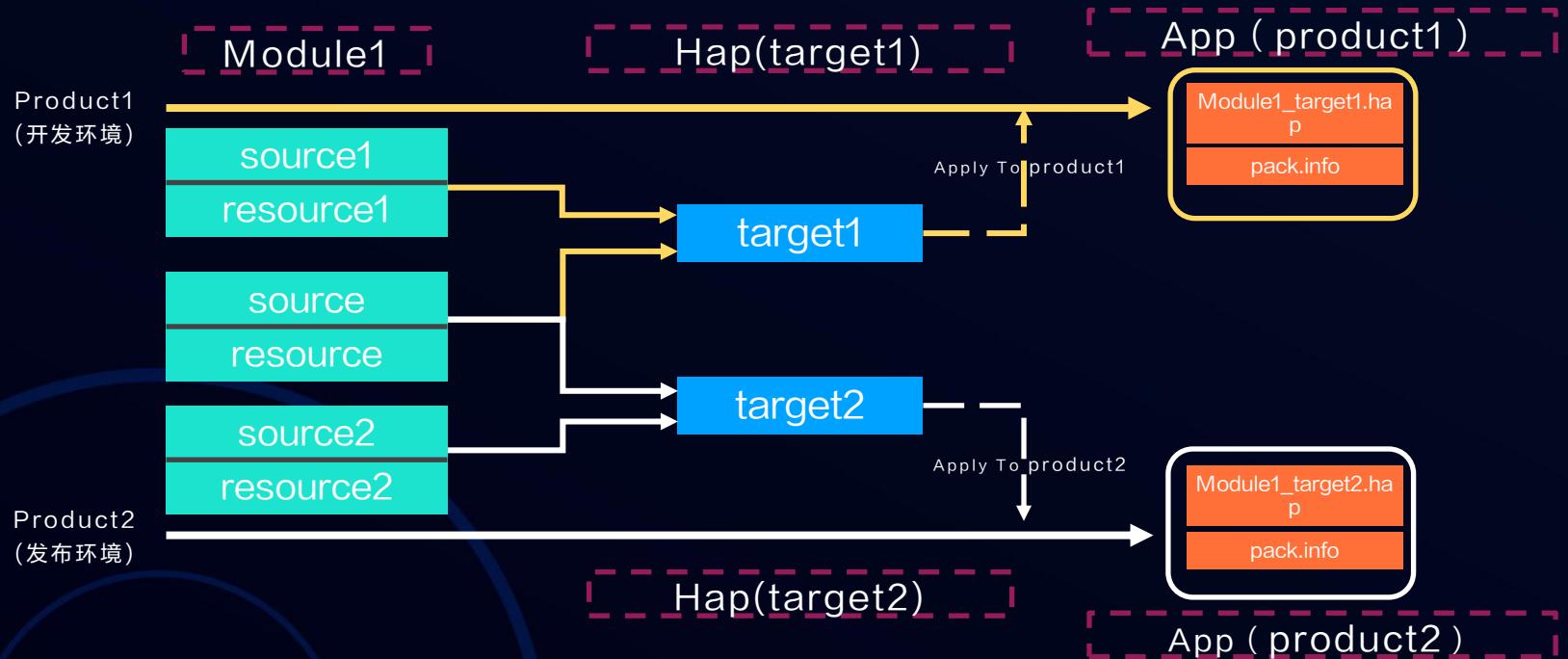
```
import { appTasks } from '@ohos/hvigor-ohos-plugin';

export default {
    system: appTasks, /* Built-in plugin of Hvigor. It cannot be modified. */
    plugins: [] /* Custom plugin to extend the functionality of Hvigor. */
}
```

- Terminal:** Shows the command "npm pack" being run in the directory "D:\demo\MyApplication31\MyApplication31\demo". The output indicates the creation of a tarball named "plugindemo-1.0.0.tgz" containing index.ts and package.json.

TS自由实现
灵活定制 高度集成

多目标产物构建 - 实践



- 统一工程、一套代码
- 自由定制源码、资源
- 可分可合组合应用包

多目标产物构建演示

多目标产物配置

```
Project v README.md entry\build-profile.json5 build-profile.json5
MultiTarget-master D:\demo\MultiTarget-master
  .hgigor
  .idea
  AppScope
  entry
    oh_modules
    src
      build-profile.json5
      hgigorfile.ts
      obfuscation-rules.txt
      oh-package.json5
      oh-package-lock.json5
    hgigor
    myhar
    oh_modules
    screenshots
      build-profile.json5
      hgigorfile.ts
      LICENSE
      oh-package.json5
      oh-package-lock.json5
    README.en.md
    README.md
External Libraries
Scratches and Consoles

app: {
  products: [
    {
      name: "official",
      compatibleSdkVersion: "5.0.0(12)",
      runtimeOS: "HarmonyOS",
      buildOption: {
        strictMode: {caseSensitiveCheck: true}
      },
      bundleName: "com.official.com",
      bundleType: "app",
      icon: "$media:startIcon",
      label: "Official Version"
    },
    {
      name: "test",
      compatibleSdkVersion: "5.0.0(12)",
      runtimeOS: "HarmonyOS",
      buildOption: {
        strictMode: {caseSensitiveCheck: true}
      },
      bundleName: "com.test.com",
      bundleType: "app",
      icon: "$media:app_icon",
      label: "Test Version"
    }
  ],
  buildModeSet: [ 2 elements... ]
},
modules: [
  {
    name: "entry",
    srcPath: "./entry",
    targets: [
      {
        name: "default",
        applyToProducts: [
          "default"
        ]
      },
      {
        name: "official",
        applyToProducts: [
          "official"
        ]
      }
    ]
  }
],
```

自定义编译资源

```
Project v README.md entry\build-profile.json5 build-profile.json5
MultiTarget-master D:\demo\MultiTarget-master
  .hgigor
  .idea
  AppScope
  entry
    oh_modules
    src
      main
        ets
          official
            resources
              base
              en_US
              zh_CN
          resources
              base
              en_US
              zh_CN
          test
            resources
              base
              en_US
              zh_CN
        module.json5
      official_pages
      test_pages
      build-profile.json5
      hgigorfile.ts
      obfuscation-rules.txt
      oh-package.json5
      oh-package-lock.json5
    hgigor
    myhar
    oh_modules

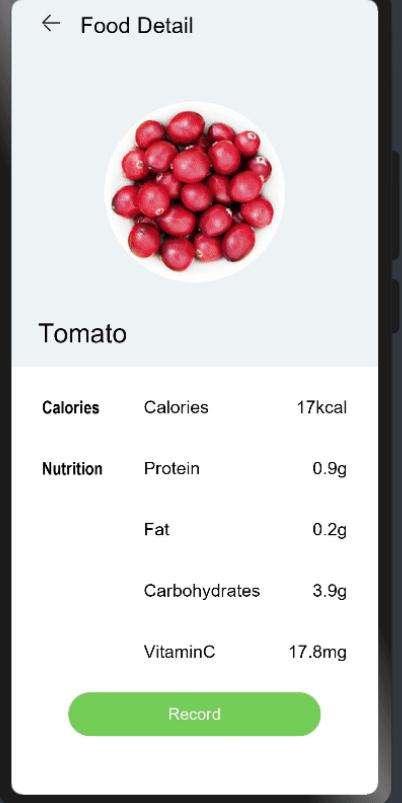
  buildOptionSet: [
    {
      arkOptions: [ 2 elements... ]
    }
  ],
  // [Start targets]
  targets: [
    {
      name: "official",
      source: {
        pages: [
          "pages/Index"
        ],
        sourceRoots: [
          "./src/official_pages"
        ]
      },
      resource: {
        directories: [
          "./src/main/official/resources",
          "./src/main/resources"
        ]
      }
    },
    {
      name: "test",
      source: {
        pages: [
          "pages/Index"
        ],
        sourceRoots: [
          "./src/test_pages"
        ]
      },
      resource: {
        directories: [
          "./src/main/test/resources",
          "./src/main/resources"
        ]
      }
    }
  ],
  // [End targets]
```

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DevEco开发套件特性介绍

- 
- 环境配置
 - 工程管理
 - AI辅助编程
 - 编译构建
 - 预览
 - 调试
 - 模拟器

双向高效预览



The screenshot shows the Android Studio IDE with the Previewer tool open. On the left, the code for `FoodDetail.ets` is displayed, showing the implementation of a food detail screen. The code includes components like `FoodImageDisplay`, `PageTitle`, `ContentTable`, and a button for recording nutrition data. On the right, the Previewer window shows a mobile device screen titled "Food Detail" displaying a bowl of red tomatoes. Below the image, the food item is identified as "Tomato". A table provides nutritional information:

Calories	Calories	17kcal
Nutrition	Protein	0.9g
	Fat	0.2g
	Carbohydrates	3.9g
	VitaminC	17.8mg

A green "Record" button is at the bottom of the preview screen.

```
autoCancel: true
};

existApp() {
    console.log("Cancel dialog!");
}

build() {
    Column() {
        Stack({ alignContent: Alignment.TopStart }) {
            FoodImageDisplay({ foodItem: this.foodItem })
            PageTitle()
        }
        ContentTable({ foodItem: this.foodItem })

        Button('Record', { type: ButtonType.Capsule, stateEffect: true
            .height(43)
            .width(248)
            .backgroundColor('#73CD57')
            .margin({ top: 30 })
            .onClick(() => {
                this.dialogController.open()
            })
        })
        .alignItems(HorizontalAlign.Center)
    }
}
```

双向预览

双向定位关联界面和代码，
更快发现界面问题

高效预览

修改代码无需保存即可
刷新预览界面，
快速调整界面样式

组件预览

页面预览对添加了@Entry注解的页面生效

组件预览对添加了@Preview注解的Component生效

```
entry : default/pages/FoodDetail
import router from '@system.router'
import {FoodData, Category} from '../model/FoodData'
import {updateIntake, getDefaultFoodData} from '../model/FoodDataModels'

const SHADOW_STYLE = {
  radius: 5,
  color: '#66c9c9c9',
  offsetX: 5,
  offsetY: 5
}

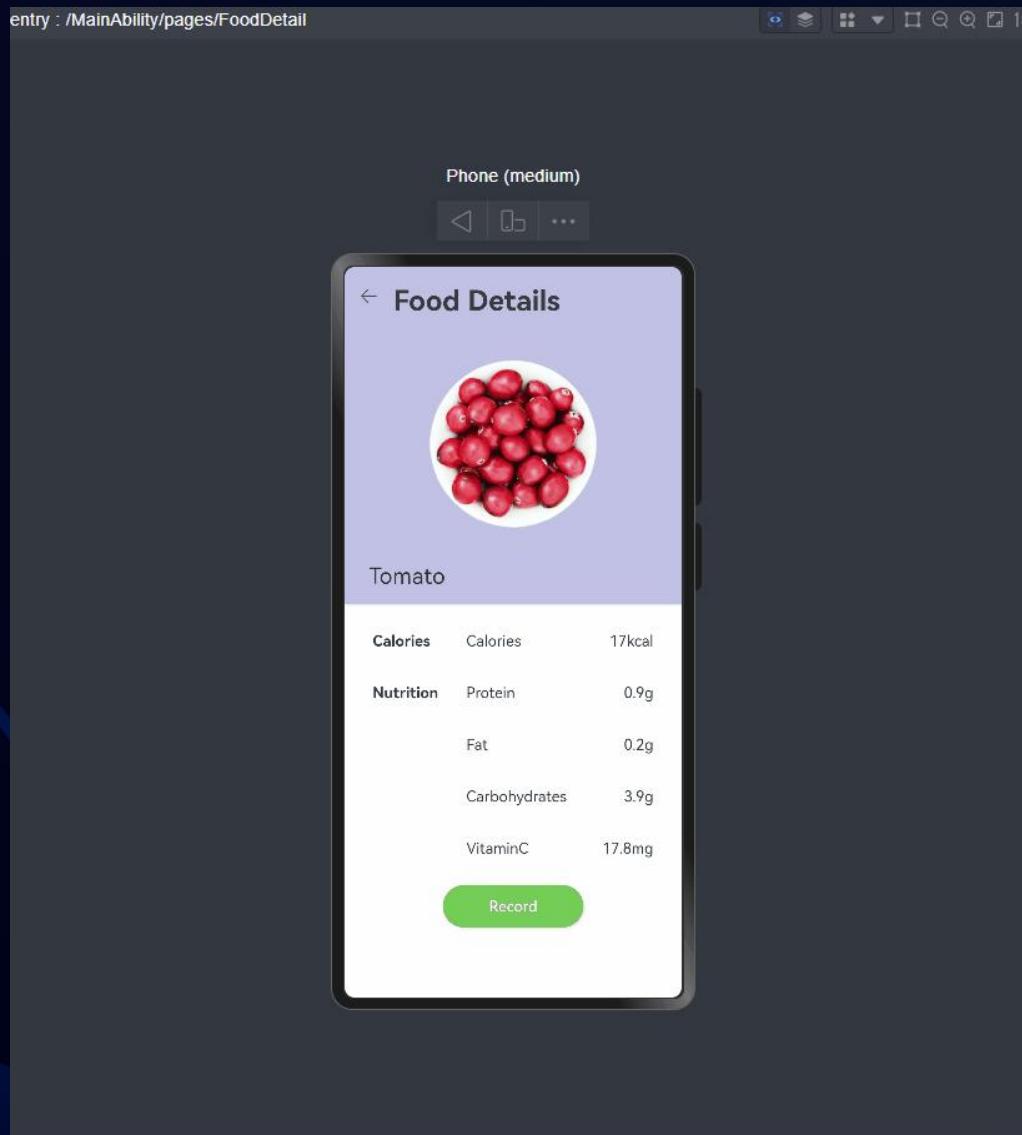
@Component
struct PageTitle {
  build() {
    Flex({
      alignItems: ItemAlign.Center
    }) {
      Image(${r('app.media.Back')})
        .width(20)
        .objectFit(ImageFit.Contain)
        .opacity(0.7)
        .onClick(() => {
          router.back()
        })
      Text('Food Information')
        .fontWeight(FontWeight.Bold)
        .fontSize(20)
        .margin({ left: 16 })
        .opacity(0.7)
        .fontColor('#FF000000')
    }
    .height('8%')
    .padding({ left: 16 })
  }
}

@Component
struct FoodImageDisplay {
  private foodItem: FoodData = getDefaultFoodData();

  build() {
    Stack({ alignContent: Alignment.BottomStart }) {
      Component > PageTitle > build()
    }
  }
}
```

- 组件预览
- 组合预览
- 页面预览

多端同时预览



- 支持多个设备下的界面同时预览
- 可添加设备，参数可自定义

跨语言混合调试

Project: DemoShop

File: MediaPlayer.ets

```
MediaPlayer {
    build() {
        Flex({ alignItems: ItemAlign.Center, justifyContent: FlexAlign.Ce
    }
    .width( value: CommonConstants.FULL_WIDTH)
    .height( value: CommonConstants.FULL_HEIGHT)
    .backgroundColor( value: Color.Black)
    .onClick( event: MouseEvent) {
        if (this.isPlaying) {
            this.pause();
            this.replayVisible = Visibility.Visible;
        } else {
            this.play();
            this.replayVisible = Visibility.None;
        }
    }
    private startPlayOrResumePlay() {
        if (!this.xcomponentLoadEnd) return;
        if (this.controlPlayStatus === PlayStatus.INIT) {
            this.stopProgressTask();
        }
    }
}
```

Threads & Variables

Main Thread

Evaluate expression (Enter) or add a watch (Ctrl+Shift+Enter)

<anonymous function>(), MediaPlayer.ets:132

- Local
 - ① = function (...)@189500eb
 - this = MediaPlayer@6b780cbc
- Closure
- Module
- Global

- ✓ 调试会话合并，只需管理一个调试会话
- ✓ 支持断点在ArkTS代码跳转到C++代码

Project: DemoShop

File: ijkMediaPlayer.ets

```
napi_value IJKPlayerNapi::seekTo(napi_env env, napi_callback_info info
{
    NapiUtil::JsValueToString( env: env, value: args[INDEX_0], bufLen: :LOGI("napi->seekTo->msec:%d", NapiUtil::StringToInt( value: msec));
    IjkMediaPlayer_seekTo( NapiUtil::StringToInt( value: msec));
    return nullptr;
}

napi_value IJKPlayerNapi::isPlaying(napi_env env, napi_callback_info info
{
    LOGI("napi->isPlaying");
    return NapiUtil::SetNapiCallBool( env: env, value: IjkMediaPlayer_i
}

napi_value IJKPlayerNapi::setPropertyFloat(napi_env env, napi_callback_
{
    LOGI("napi->setPropertyFloat");
    size_t argc = PARAM_COUNT_2;
    napi_value args[PARAM_COUNT_2] = { nullptr };
    napi_get_cb_info(env, info, &argc, args,
        std::string id;
    NapiUtil::JsValueToString( env: env, value: args[INDEX_0], bufLen: :std::string value;
}
```

File: ijkplayer_napi.cpp

```
IJKPlayerNapi::isPlaying()
```

Threads & Variables

Thread-1-[huawei.demoshop]

Evaluate expression (Enter) or add a watch (Ctrl+Shift+Enter)

IJKPlayerNapi::isPlaying(napi_env ___, napi_callback_info ___)

isplaying ijkMediaPlayer.ets:178

<anonymous function> MediaPlayer.ets:132

Variables

ReturnValues

Statics

① ::STR_DEFAULT_SIZE = {const int32_t} 1024

② ::PARAM_COUNT_1 = {const int32_t} 1

日志分析

多样化日志过滤查询手段

混淆异常日志解析

热重载代码修改即刻显现

The screenshot shows a development environment with a code editor and a running application. The code editor displays the file `HomePageViewModel.ets` with the following content:

```
22 class HomePageViewModel {  
59     *  
60     * @return {Array<Resource>} swiperListItemData of Resource  
61     */  
62     getSwiperModelList() {  
63         let swiperList: Array<Resource> = [];  
64         swiperList.push({...items: ${r( value: 'app.string.swiper_model_chang')});  
65         swiperList.push({...items: ${r( value: 'app.string.swiper_model_chang')});  
66         swiperList.push({...items: ${r( value: 'app.string.swiper_model_mate_book')});  
67         swiperList.push({...items: ${r( value: 'app.string.swiper_model_Nova')});  
68         return swiperList;  
69     }  
70     /**  
71      * Get activity title list.  
72  }
```

The running application on the right is a shopping app with a red header bar showing "畅享20 Plus". The main screen displays a banner with two phones and some navigation buttons: 全部 (All), 精选 (Selected), 新品 (New), and 实惠 (Practical). Below the banner, there is a section labeled "暂无数据" (No data available) with a camera icon.

运行时函数热重载

保留页面状态，断点无需重新设置
应用无需重启

代码修改即刻显现

节省等待时间，提升效率

ArkUI Inspector 2D

快照分析

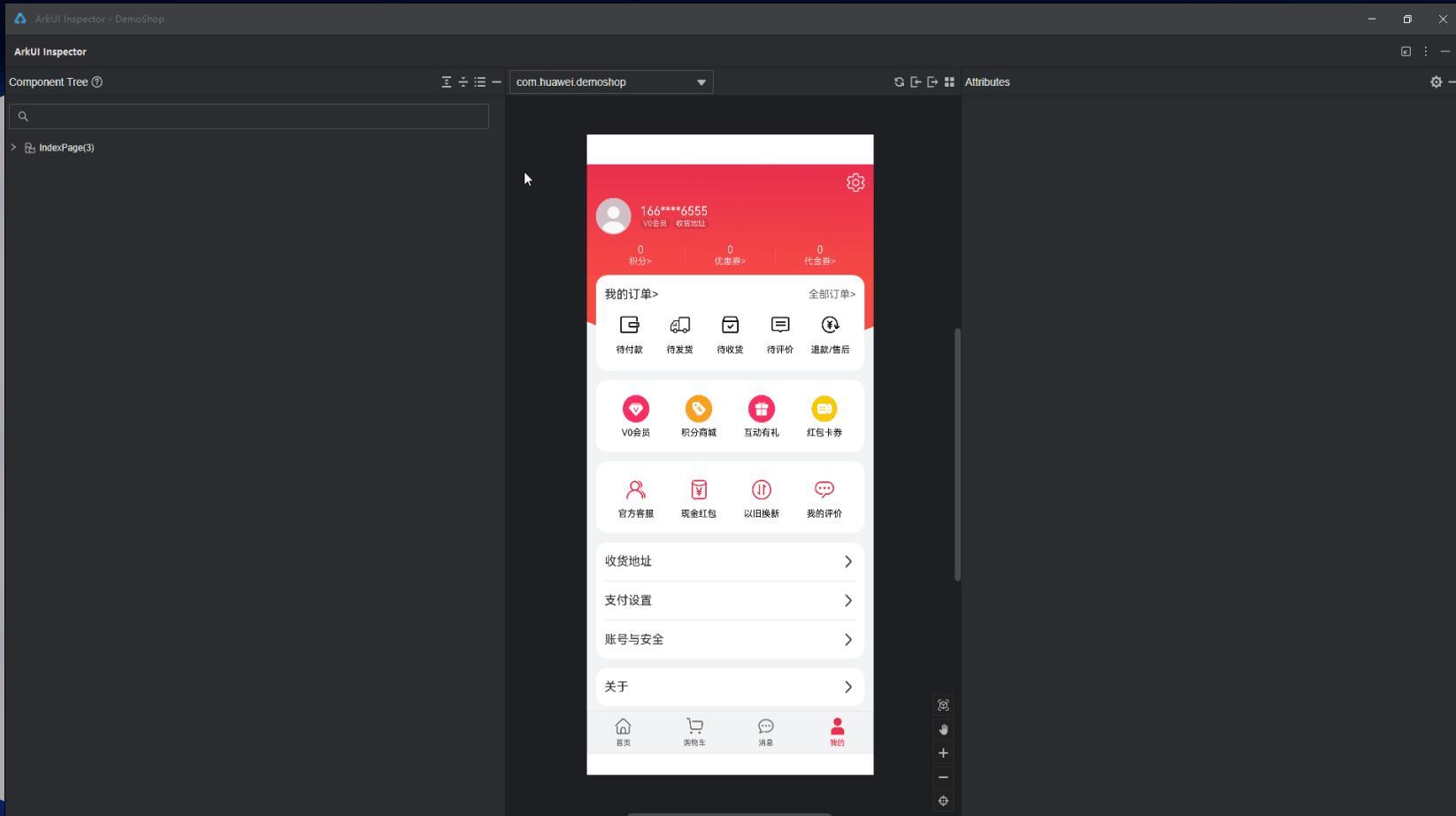
布局结构展示

三段联动

组件属性展示

属性过滤

源码跳转



真机UI调试 提升开发效率

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反向调试

The screenshot shows a debugger interface with the following details:

- Project View:** Shows the project structure for "deadlock-test" under "MyApplication". The "entry" folder is selected.
- Code Editor:** Displays the "hello.cpp" file with several breakpoints marked by red dots. The code involves NAPI calls to get and set double values.
- Timeline Debugger:** A large central pane showing a timeline of events. The timeline has a red background and displays various steps and states of the application's execution.
- Toolbars and Menus:** Standard IDE menus like File, Edit, View, Navigate, Code, Refactor, Build, Run, Tools, VCS, Window, Help.
- Bottom Status Bar:** Shows system information like "24:1 CRLF UTF-8 4 spaces", the date and time "17:12 2023/7/6", and a note about the screenshot being personal.

反向调试

反向单步复现问题

正反向调试切换

TimeLine调试模式

可视化调试问题

聚焦多线程并发、死锁场景

HarmonyOS Emulator 鸿蒙模拟器

真实环境

真实器件模拟
真实操作系统

高性能

硬件加速
高速数据通道

更丰富

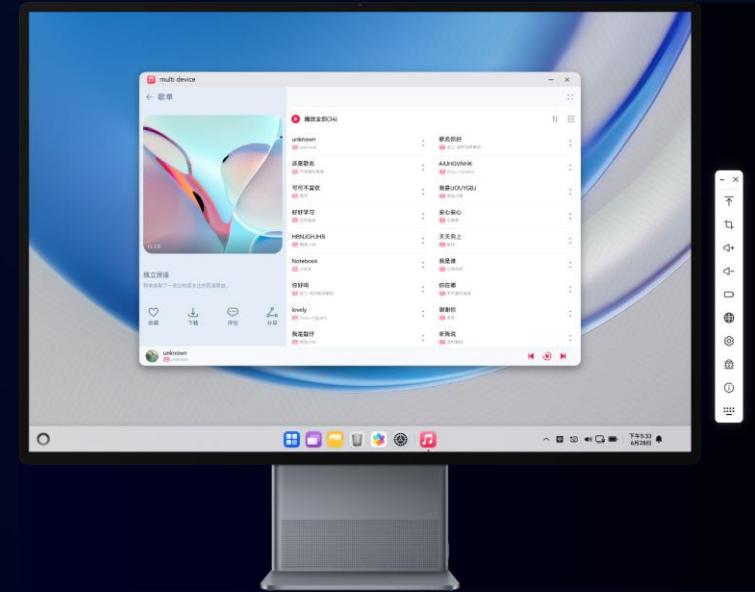
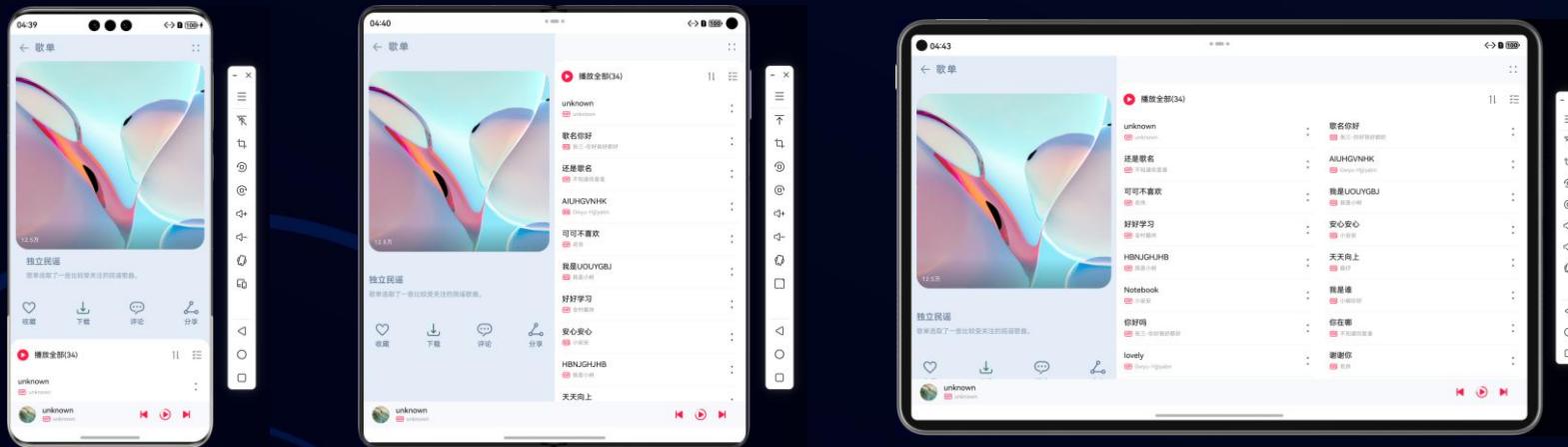
跨平台可用
多品类模拟

更便捷

快捷工具栏
场景化模拟

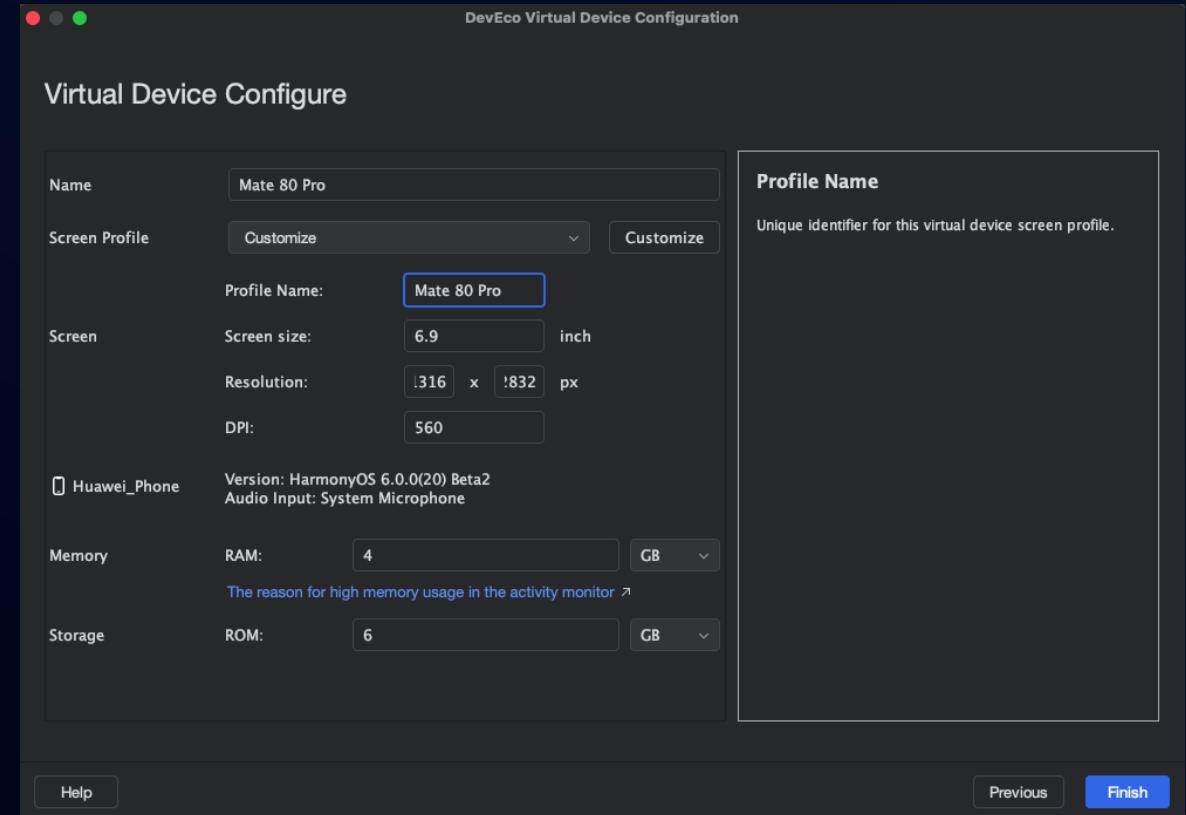
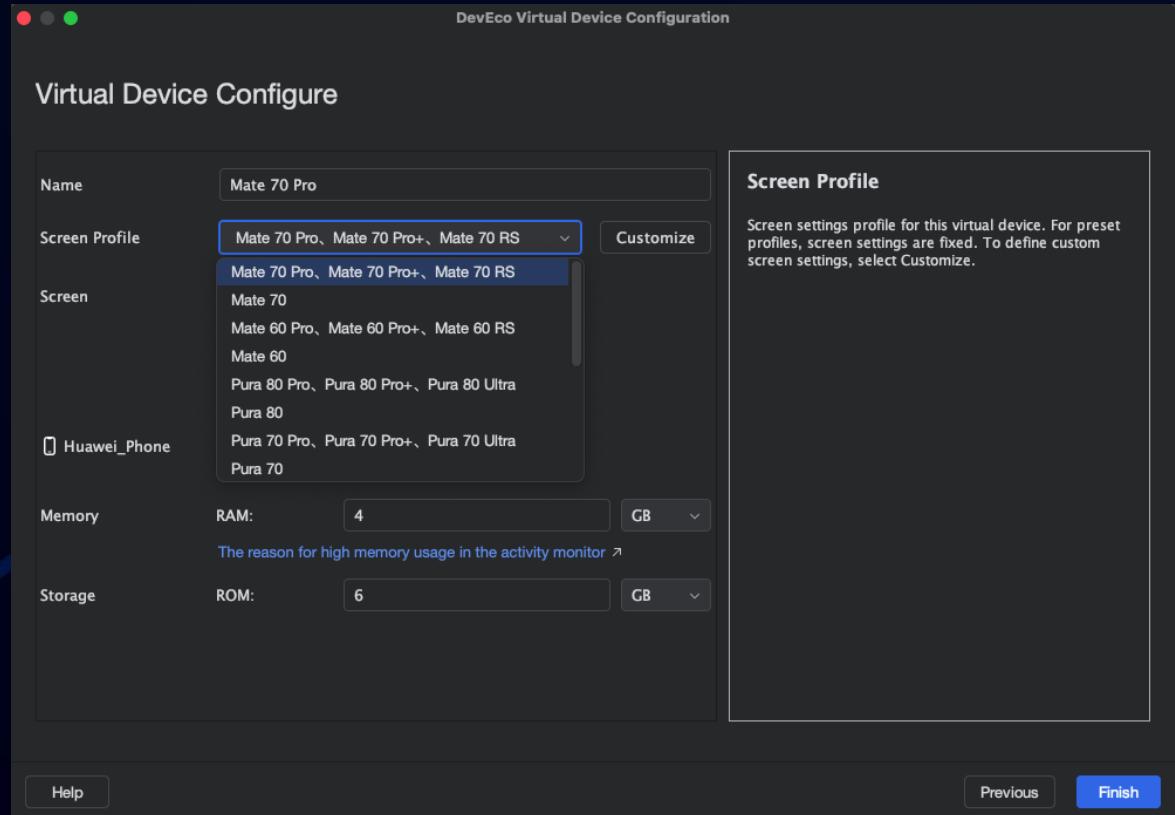
多设备模拟

- 可模拟的鸿蒙设备：手机、折叠屏、平板、PC
- 支持的电脑：Mac arm、Windows x86
- 支持的API版本：所有API，跟随HarmonyOS版本更新



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自定义屏幕参数，模拟任意机型



默认机型模板，一键使用旗舰机型

自定义机型，新机提前适配

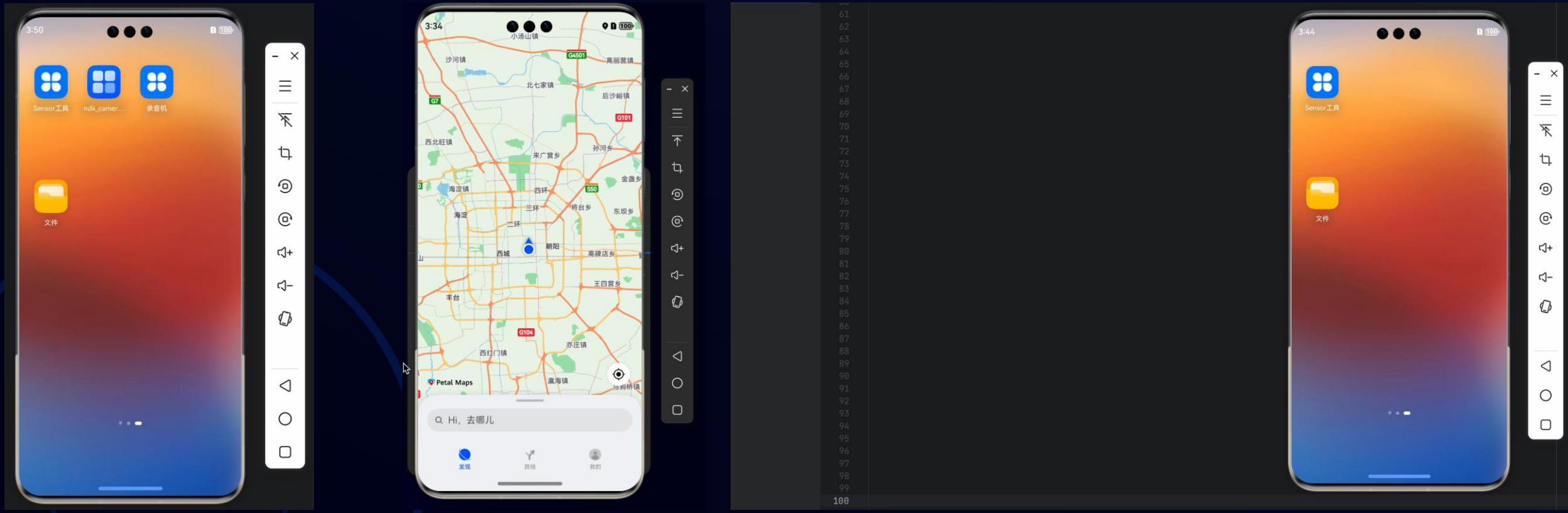
*本次活动分享内容仅代表个人观点，不代表华为官方观点

应用场景模拟

使用PC麦克风/摄像头
进行录音、拍照

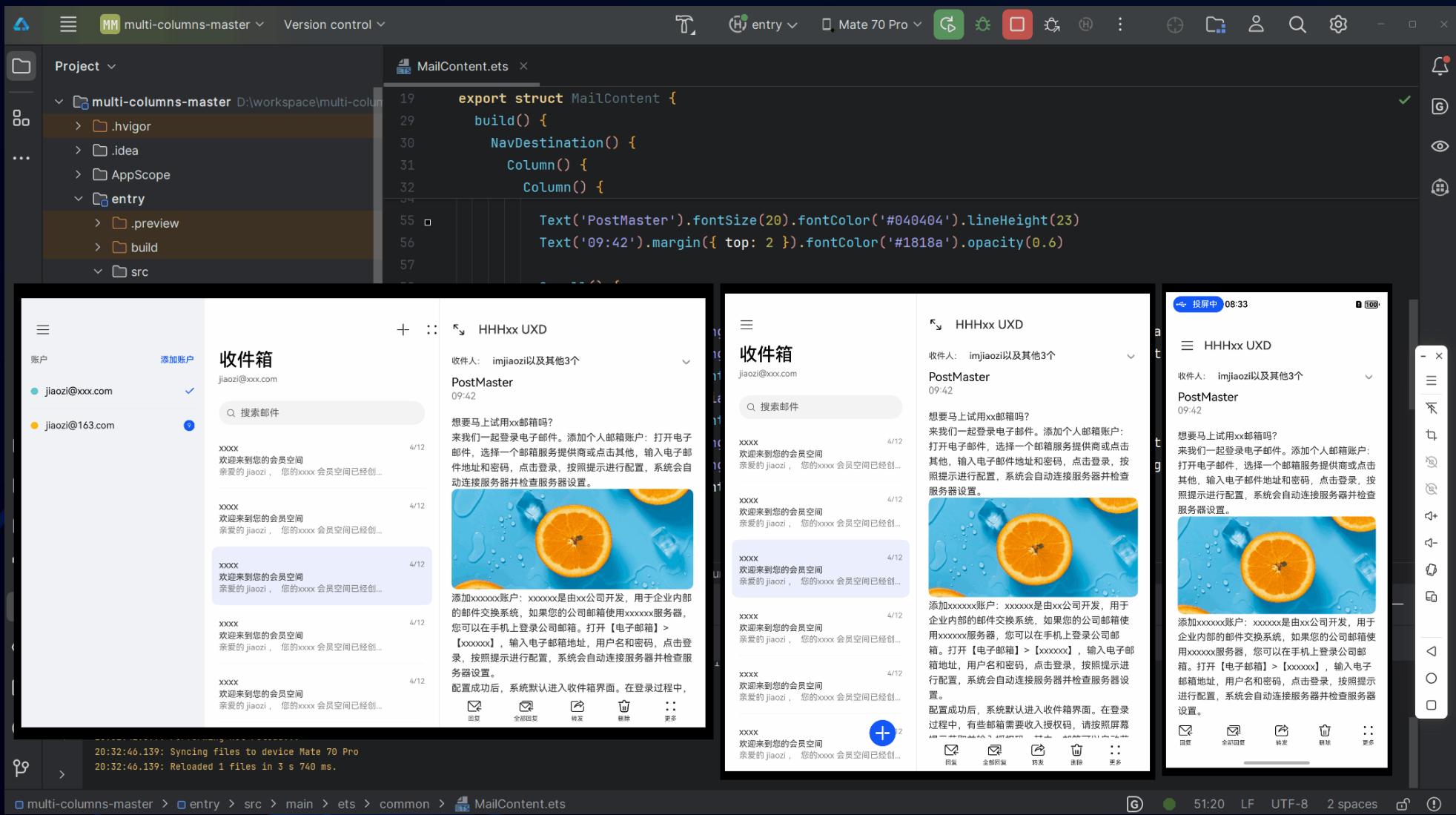
GPS定位、导航一键
模拟

传感器数据一键注入



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多屏模拟，多设备并行调试



- 最多4块屏幕同时显示
- 结合HotReload使用，一次UI代码修改，多屏同时刷新

谢谢