

QUICK APP PRIMER

Guide to understand Quick Apps v1.0

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Mobile App Trends

Quick App Overview

Use Cases

Development

Architecture

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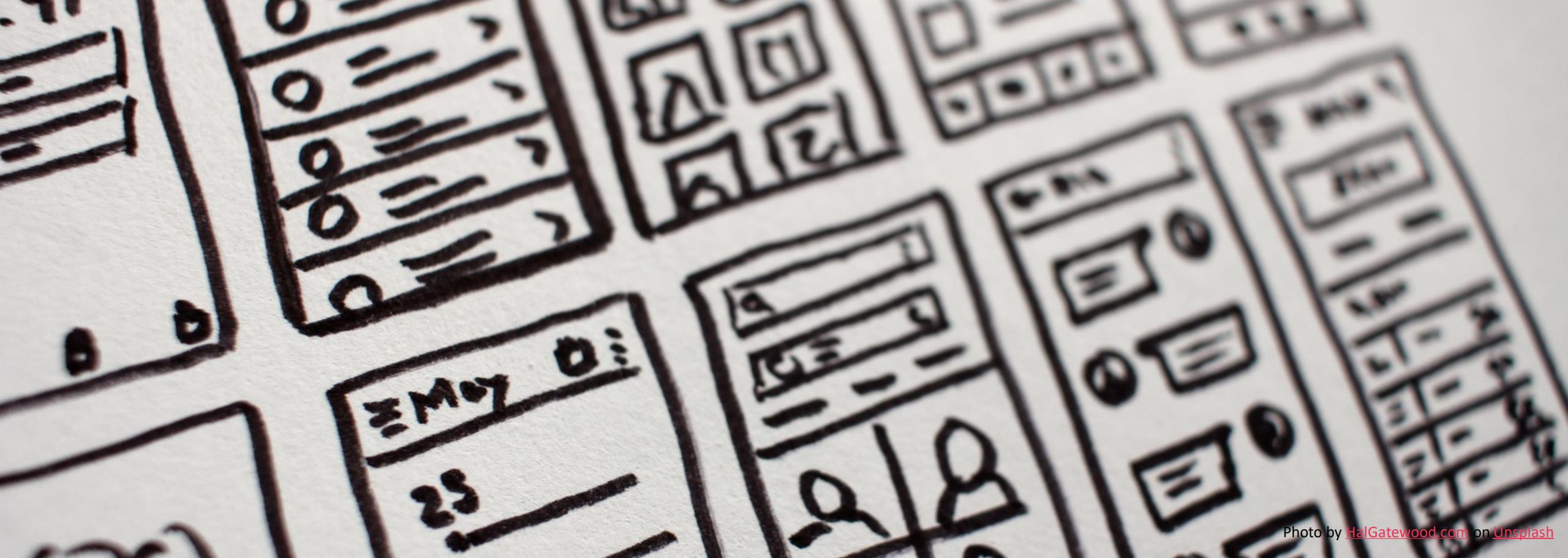


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MOBILE APPs TRENDS

Trends in business; trends in development; new demanded services

“NEW NORMAL” TRENDS

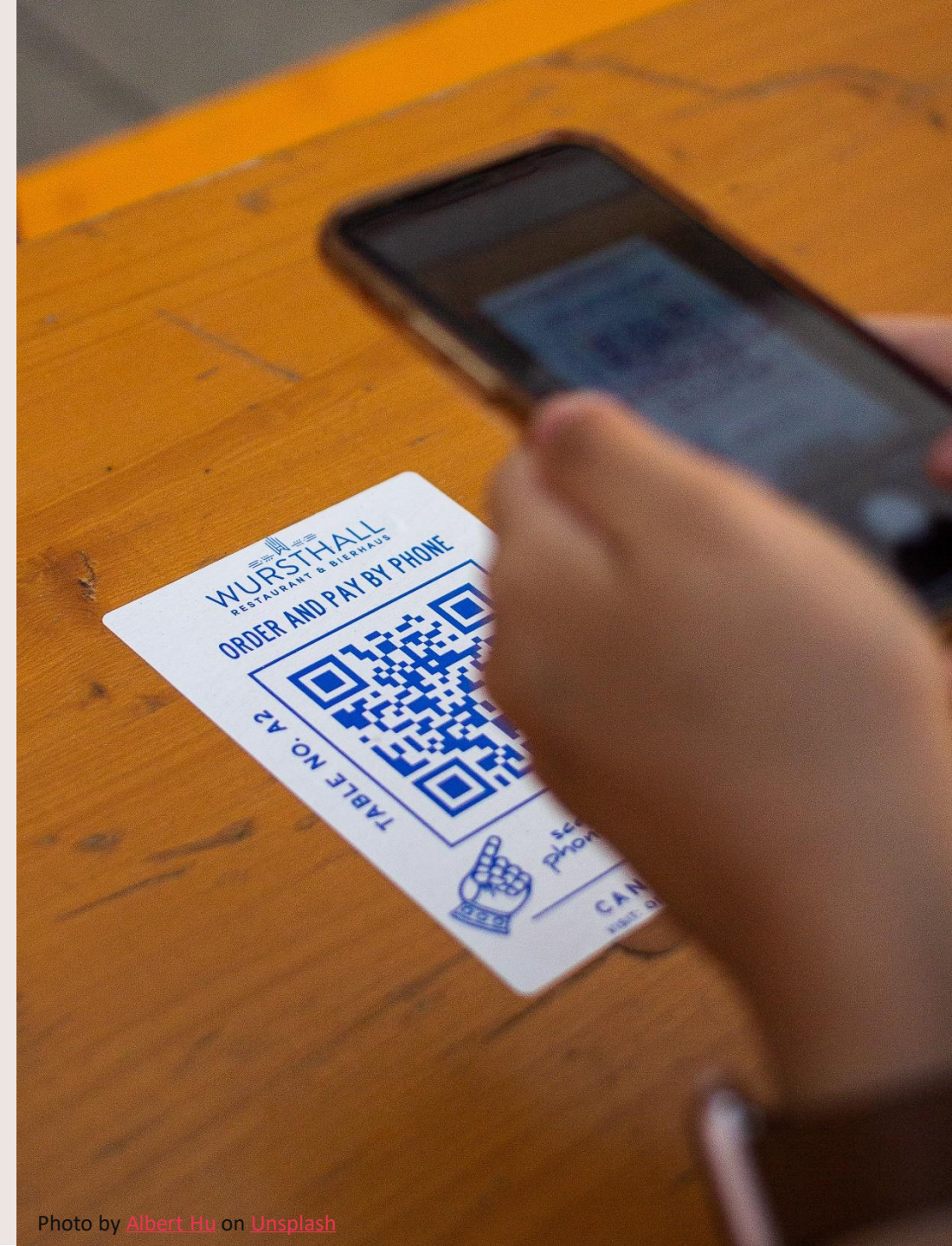
COVID-19 no-touch services

Scan QR-codes everywhere

Too many apps in devices

More transactional online services:

- *Quick iterations to perform concrete tasks*
- *Short context of time and/or location*
- *Book, pay, arrange services/products*
- *Public services for citizens*



CHANGES IN BUSINESS MODELS

Mobile first approach

App stores to face new regulations

Coexistence of multiple stores

Businesses need to create more apps quickly

Experiences from any device, not only phone

Changes in the advertising models

Innovative ways to acquire users

Towards vendor neutrality & EU sovereignty

**ORDER &
COLLECT
OR DELIVERY**

**SCAN THE
QR CODE
OR CALL**

02076294493

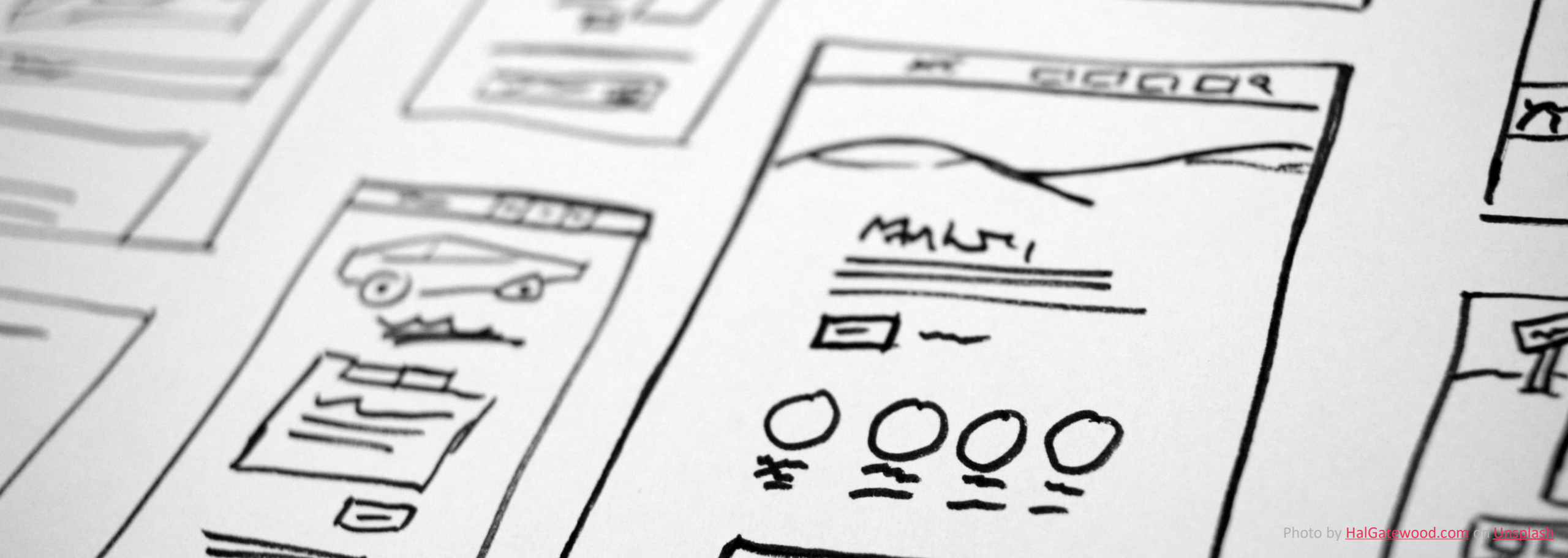


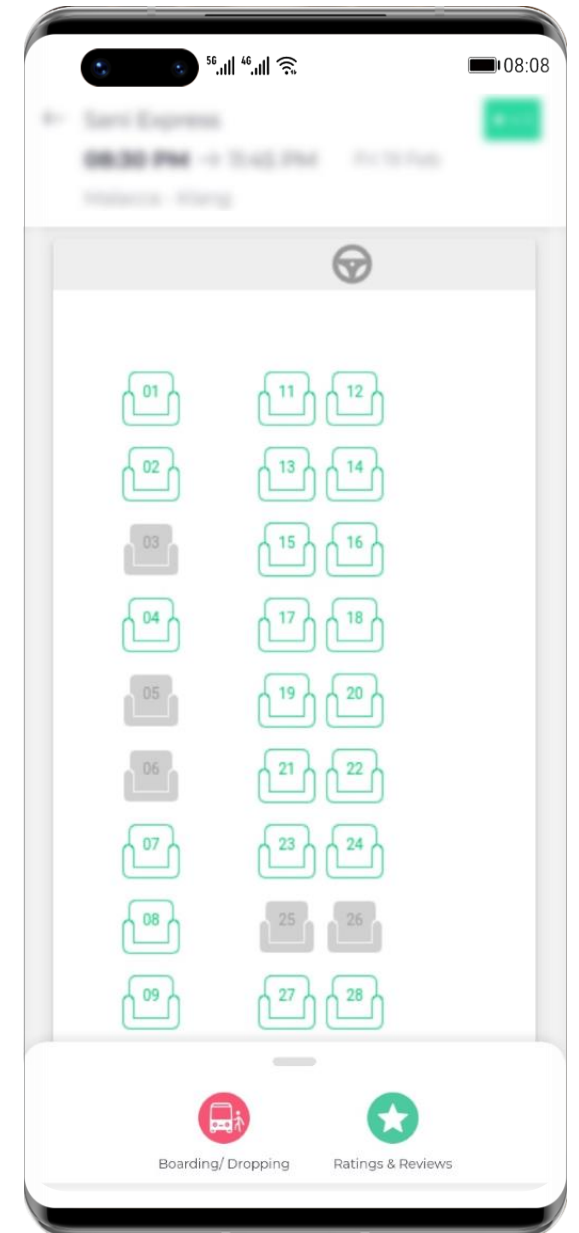
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QUICK APP OVERVIEW

Quick App paradigm; main features; ...

QUICK APP

A light *native-like* application that *does not require installation* and can be opened with just *one tap* or scanning a *QR-code*

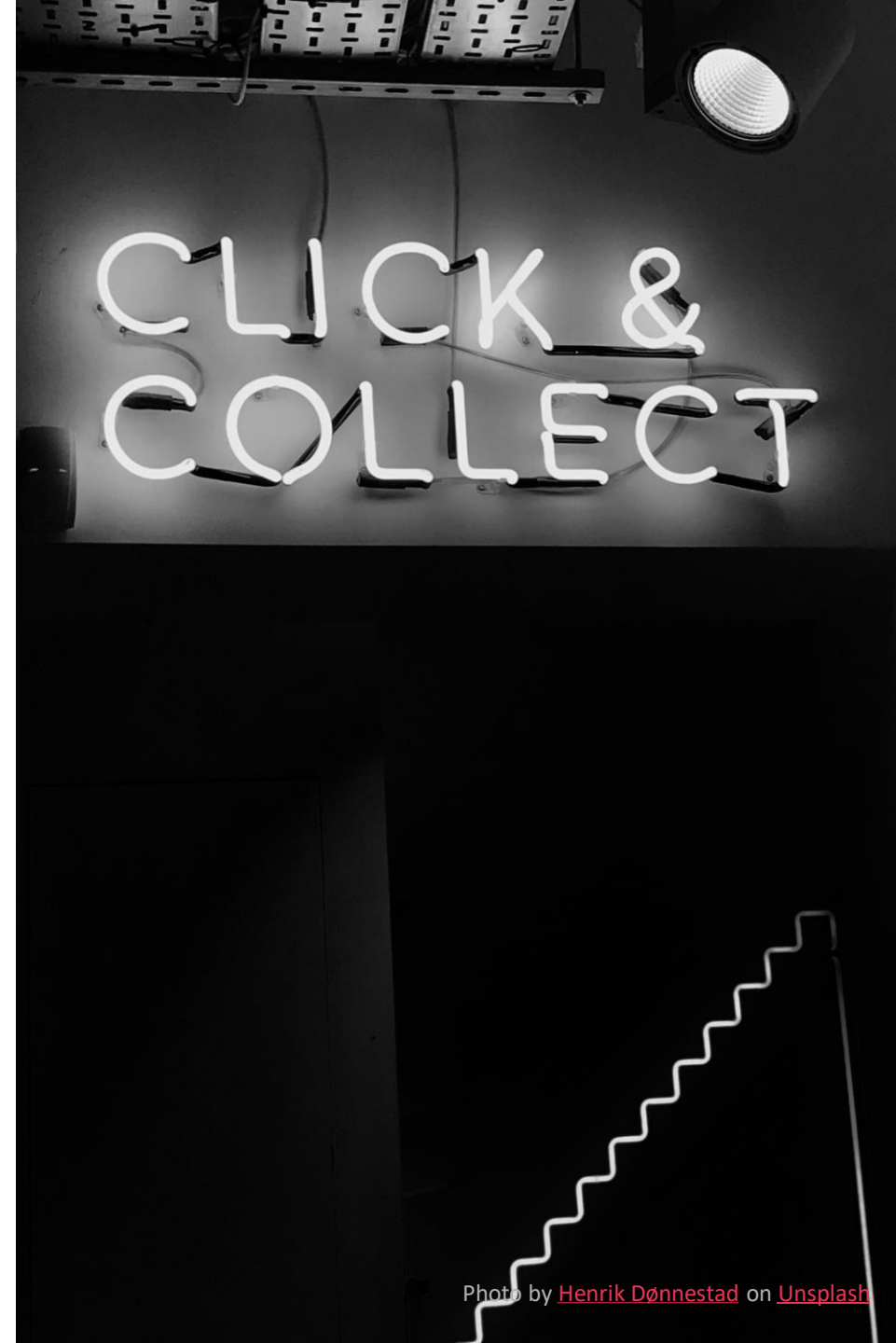


FRICTIONLESS APPs

Ideal for:

- *Simple defined tasks on the move*
- *Low friction user interactions*
- *Infrequent interactions*
- *User's instant gratification (low time-to-value)*

Avoiding complex workflows and intermediate steps



MINIMUM TIME-TO-VALUE

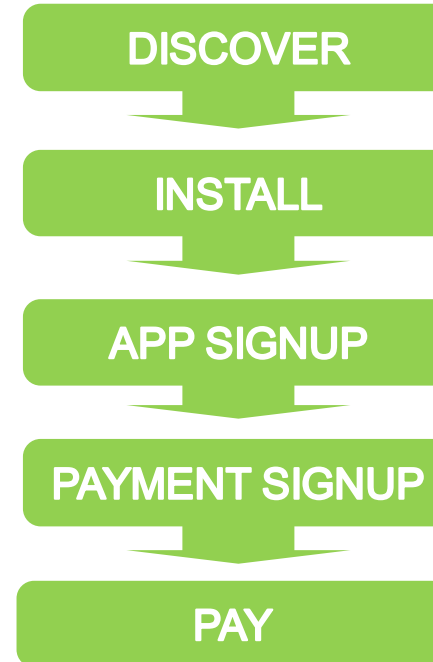
Focus on specific tasks

Instant access (no install)

No registration friction

No payment friction

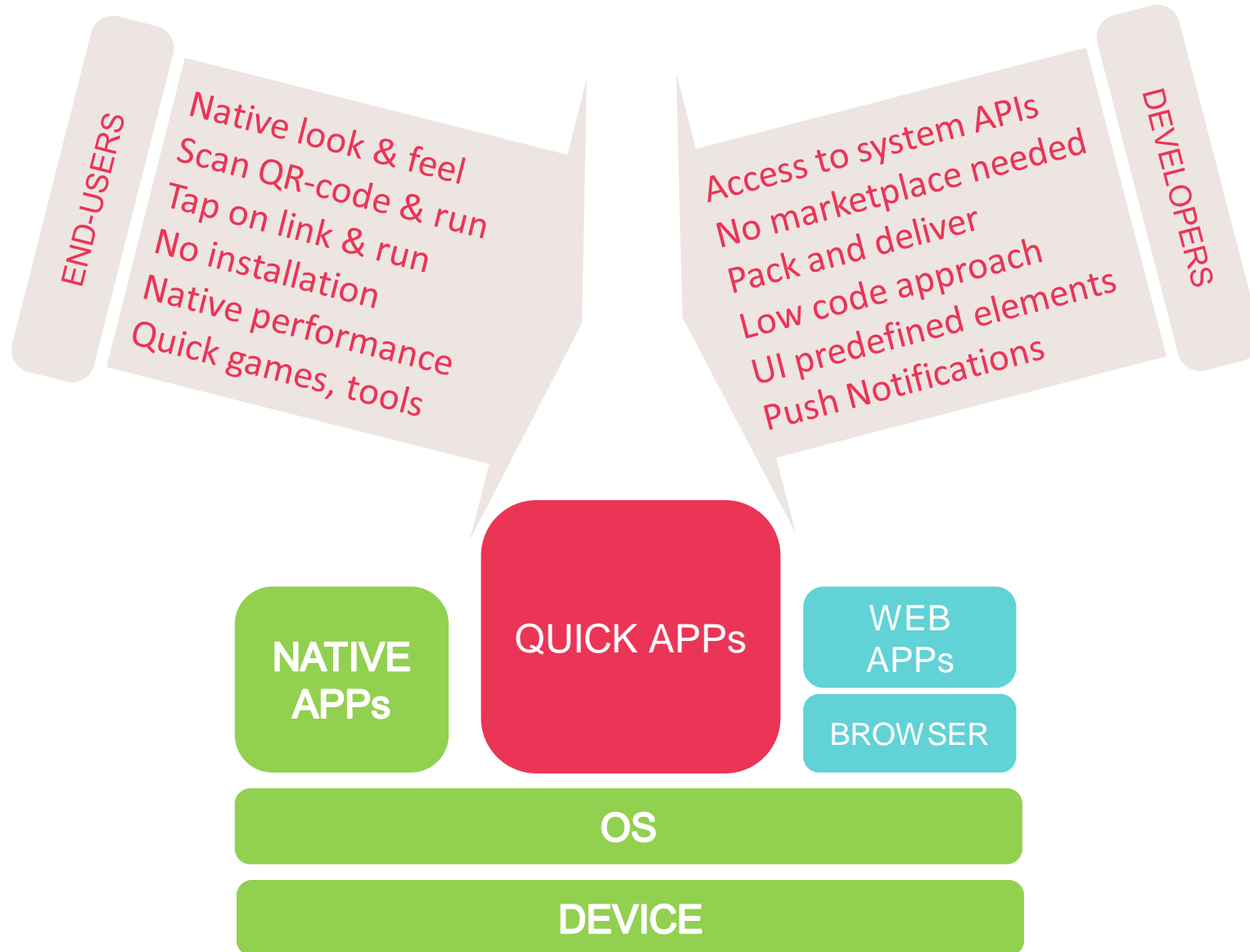
MOBILE APP



QUICK APP



QUICK APP MAIN FEATURES



Quick App is a framework for mobile application development, based on the front-end Web technology stack, that offers maximized performance and enhanced user experience through the use of device's native resources and services.

PRODUCT'S LIFECYCLE SUPPORT

DISCOVERABILITY

Discover the quick app using:
QR-codes; search results; websites; catalogs; text messages; push notifications; marketplaces; in-app links; web links; widgets; global device search; device assistant; ...

USER ACQUISITION

Customers access the quick app through:
scanning a QR-code, tapping on a link, in one step. No installation is required. Native authentication mechanisms to identify the user and personalize the service.

MONETIZATION

Developers can monetize the quick app:
displaying in-app native ads in different formats; in-app reward ad videos; in-app-purchases offering different payment methods.

USER RETENTION

User engagement in the service (quick app) through:
push notifications at system level with personalized messages; possibility to bookmark the app; keeping the status of the quick app last interaction for future access; marketing in the stores.

DISCOVERABILITY

USER ACQUISITION

MONETIZATION

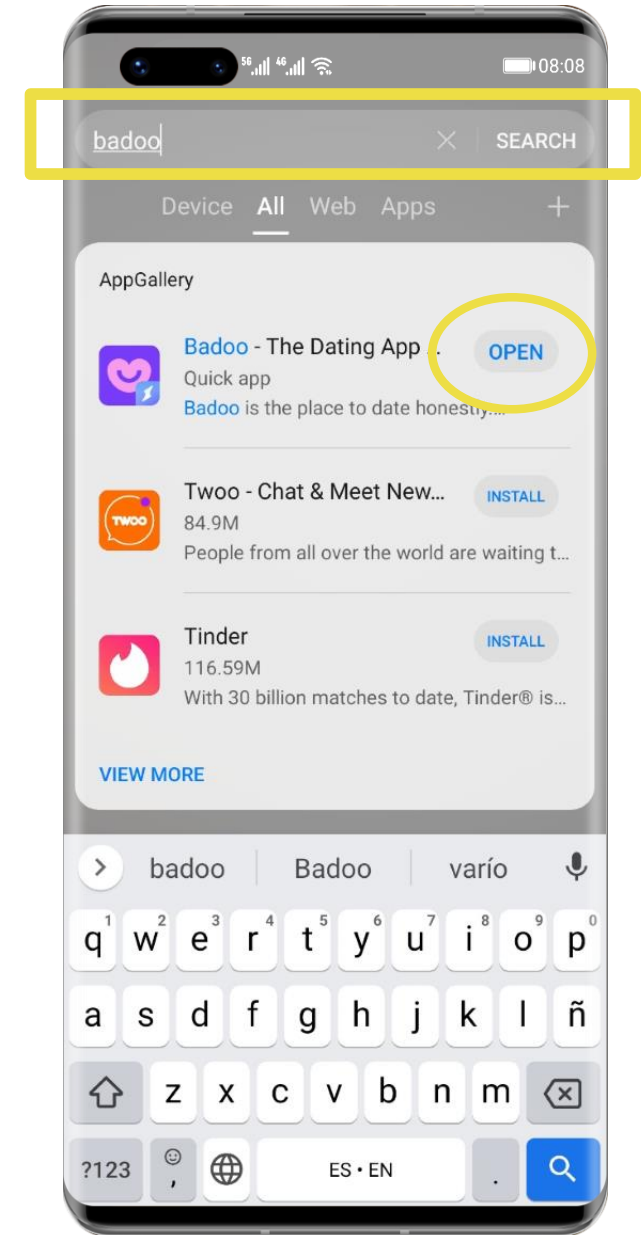
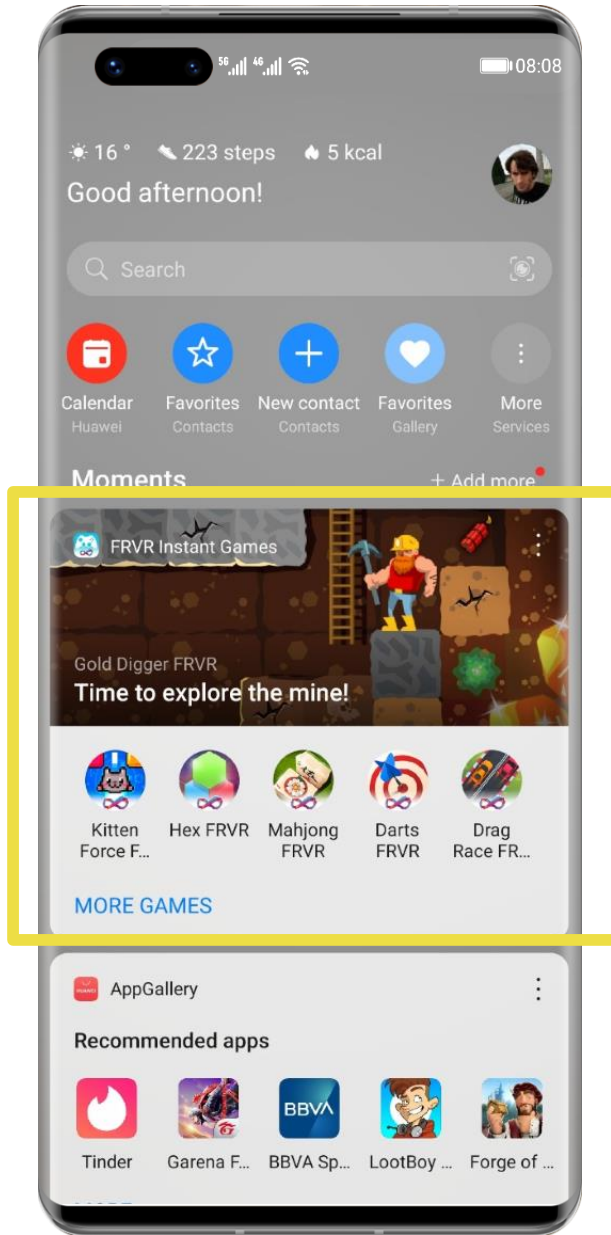
USER RETENTION

Promotion within devices

Widgets on dashboard

Global search results

No store dependency



DISCOVERABILITY

USER ACQUISITION

MONETIZATION

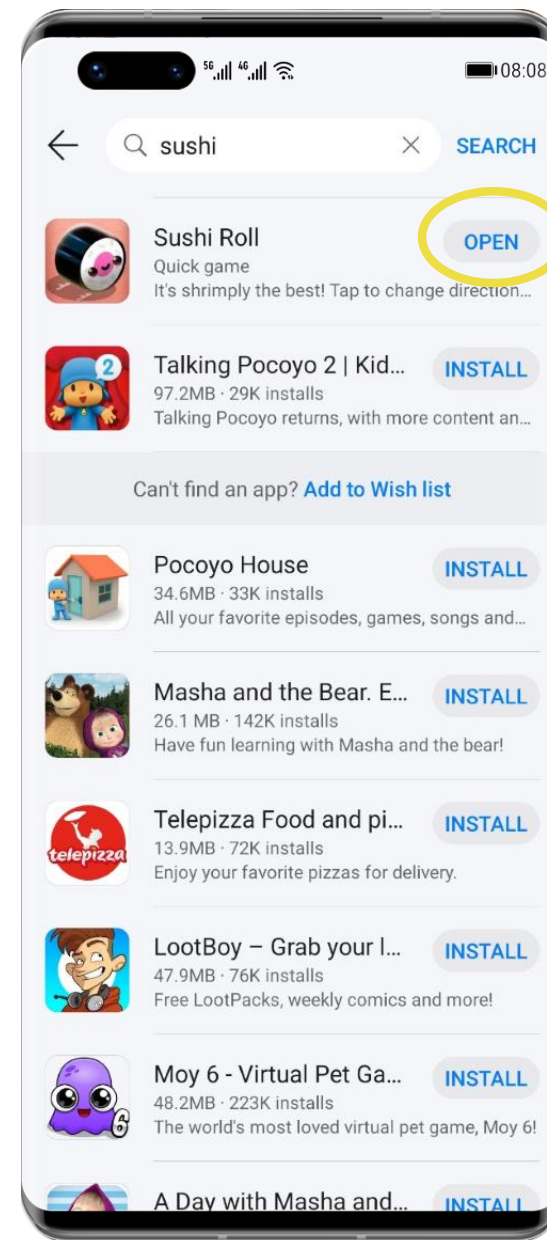
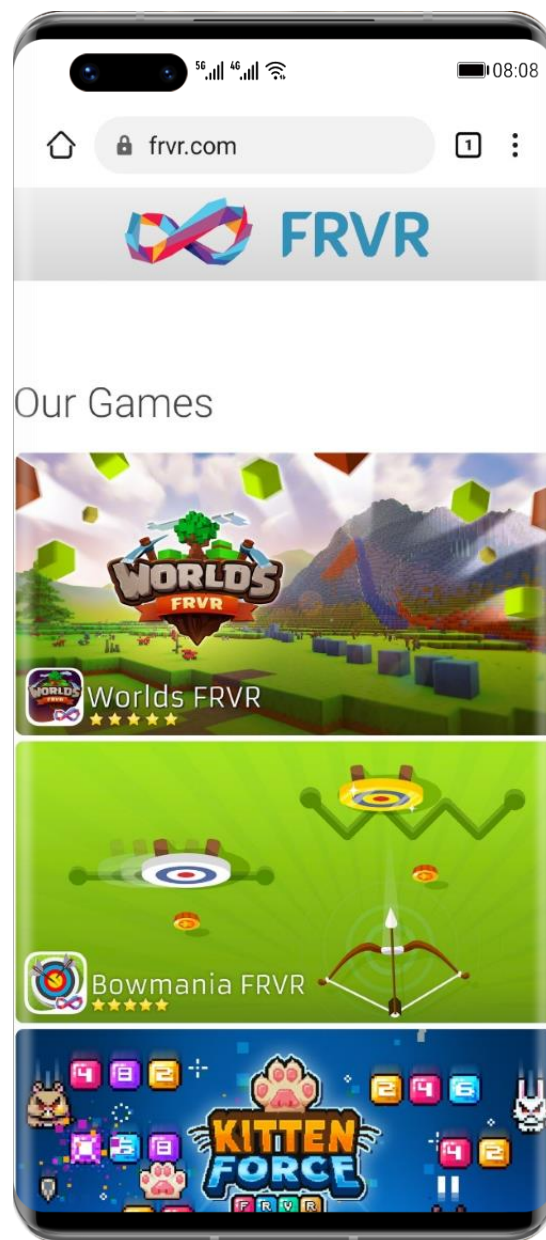
USER RETENTION

Promotion outside devices

Web sites (URL links)

Links from other apps

Listed in app marketplaces



DISCOVERABILITY

USER ACQUISITION

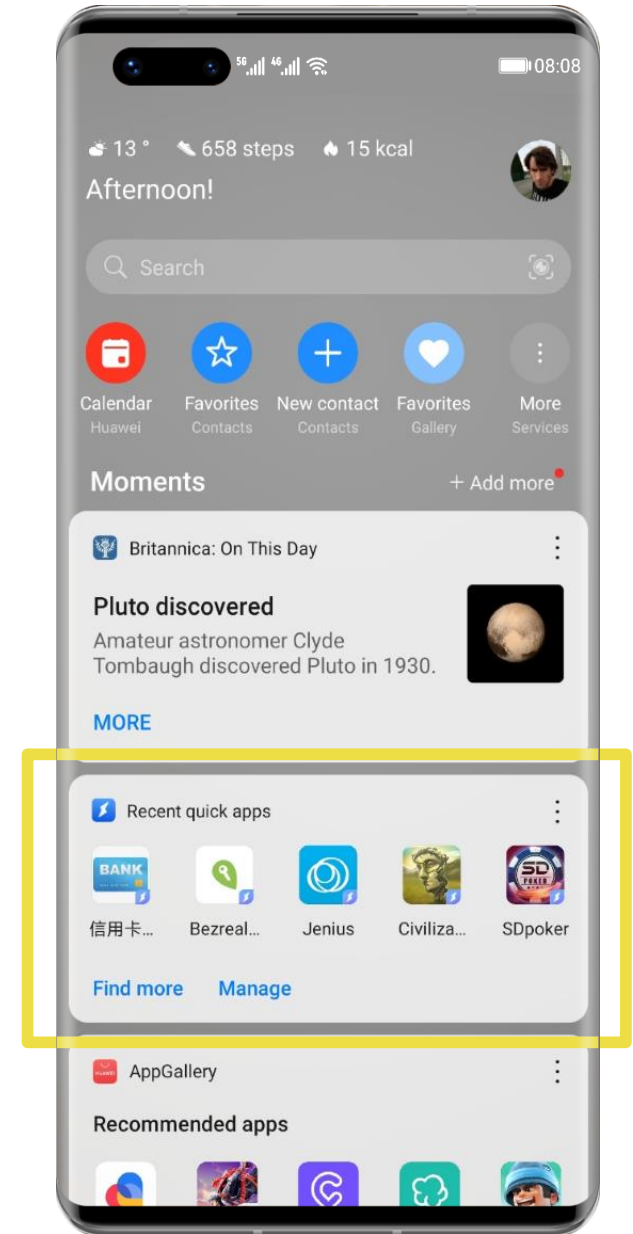
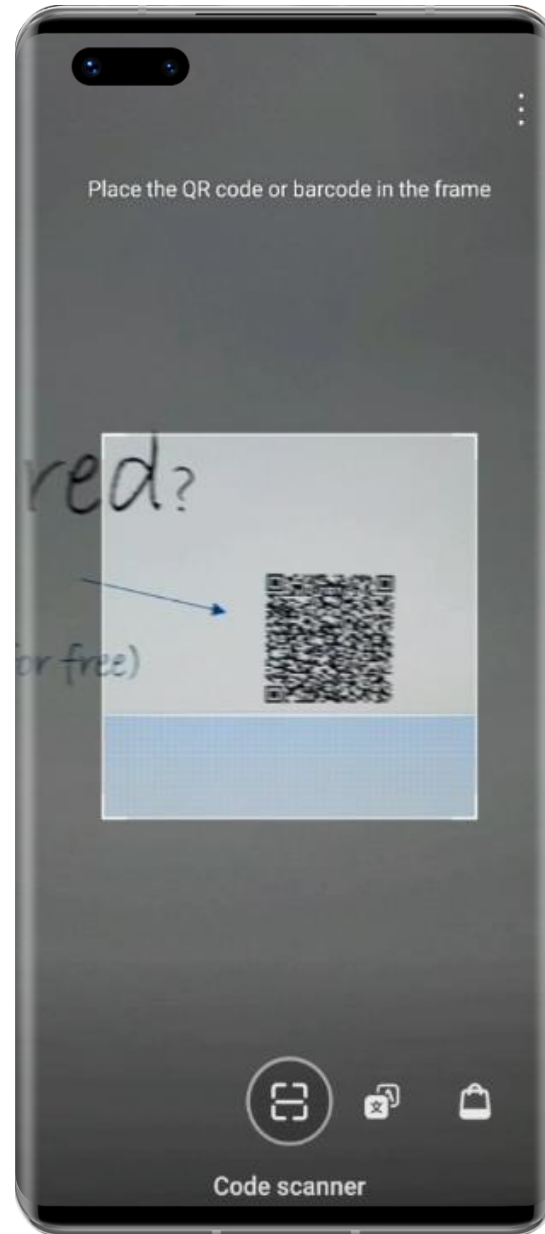
MONETIZATION

USER RETENTION

QR code & open the app

Quick app marketplaces

Recently used apps

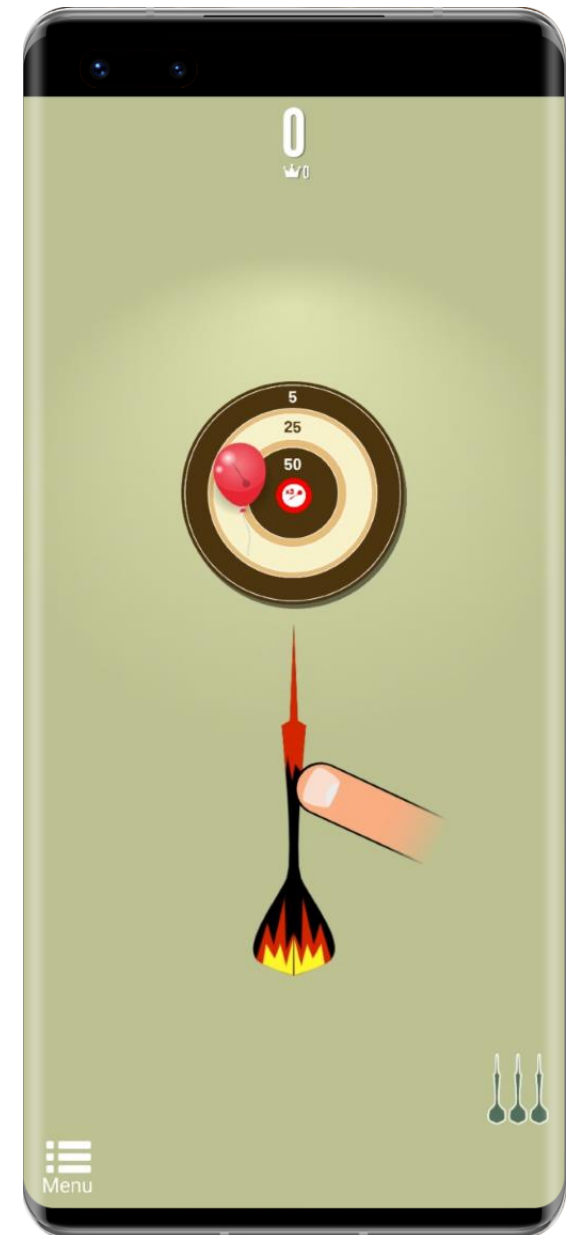
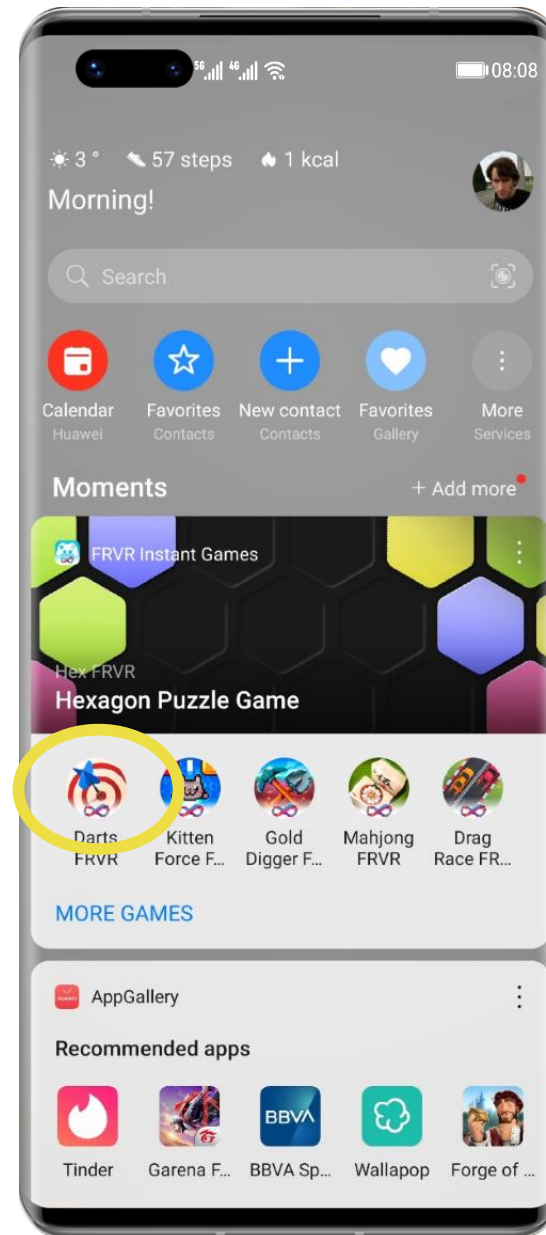


DISCOVERABILITY
USER ACQUISITION
MONETIZATION
USER RETENTION

Huge discoverability

Just one tap and access

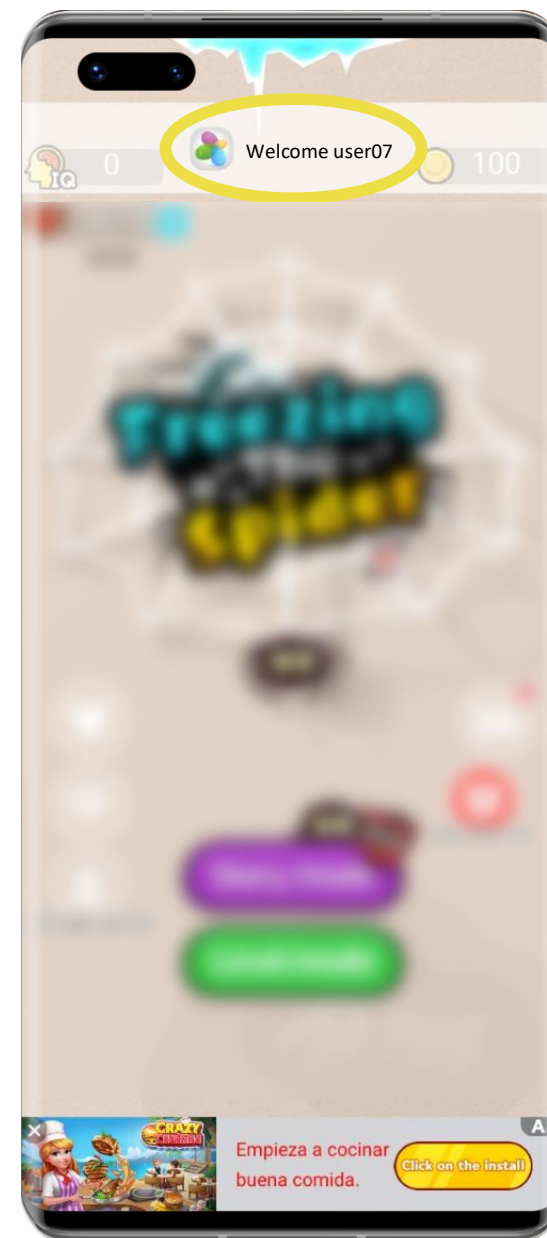
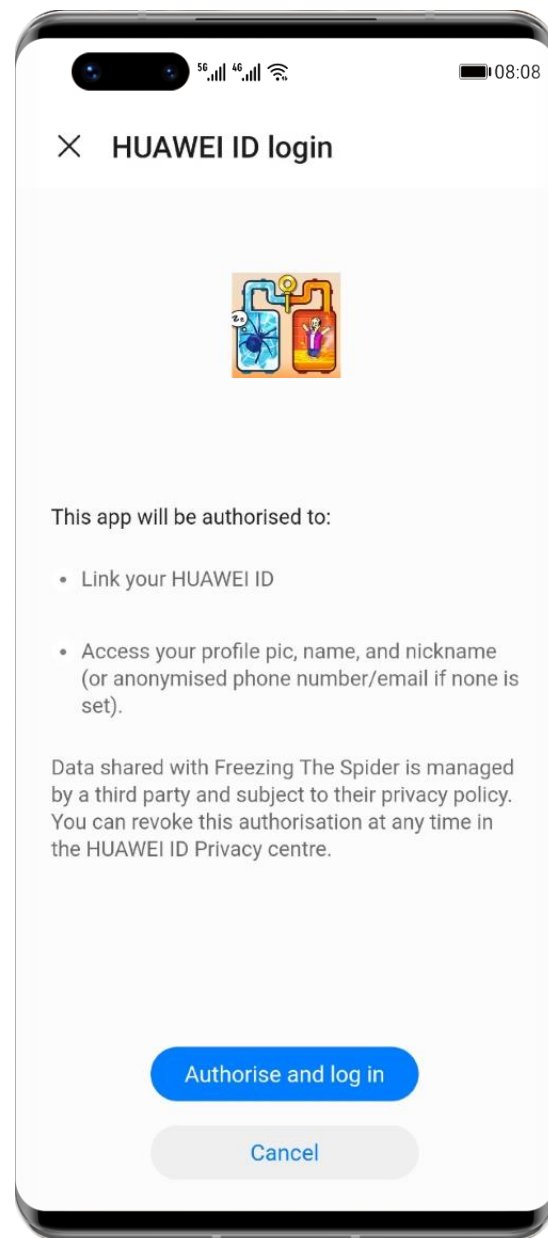
No installation required



DISCOVERABILITY
USER ACQUISITION
MONETIZATION
USER RETENTION

User identification

Open and authorize

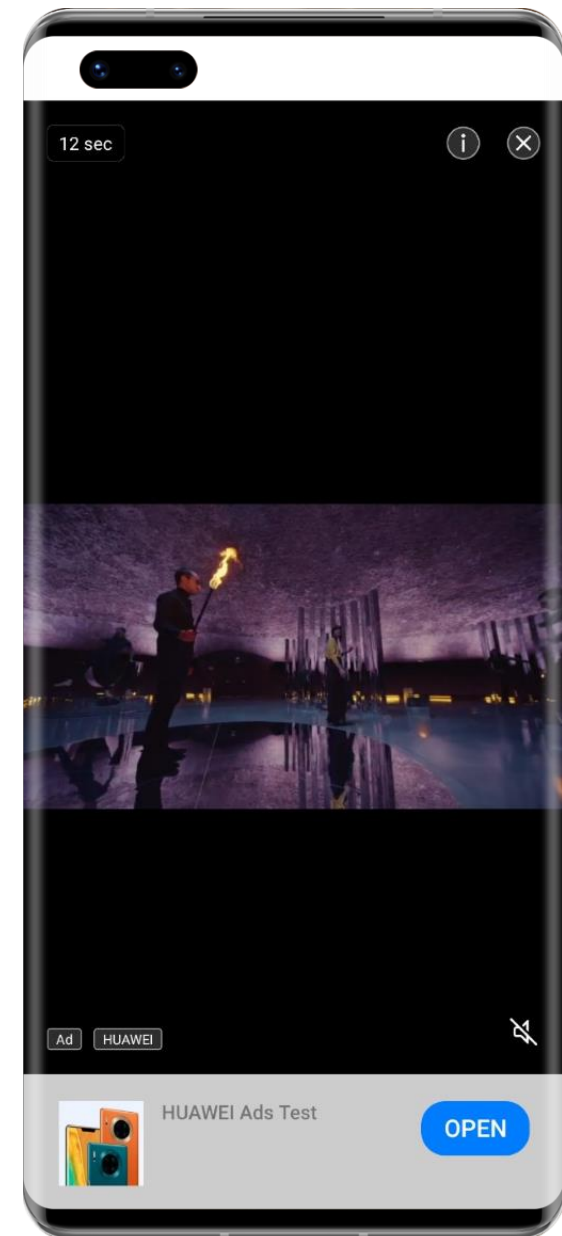
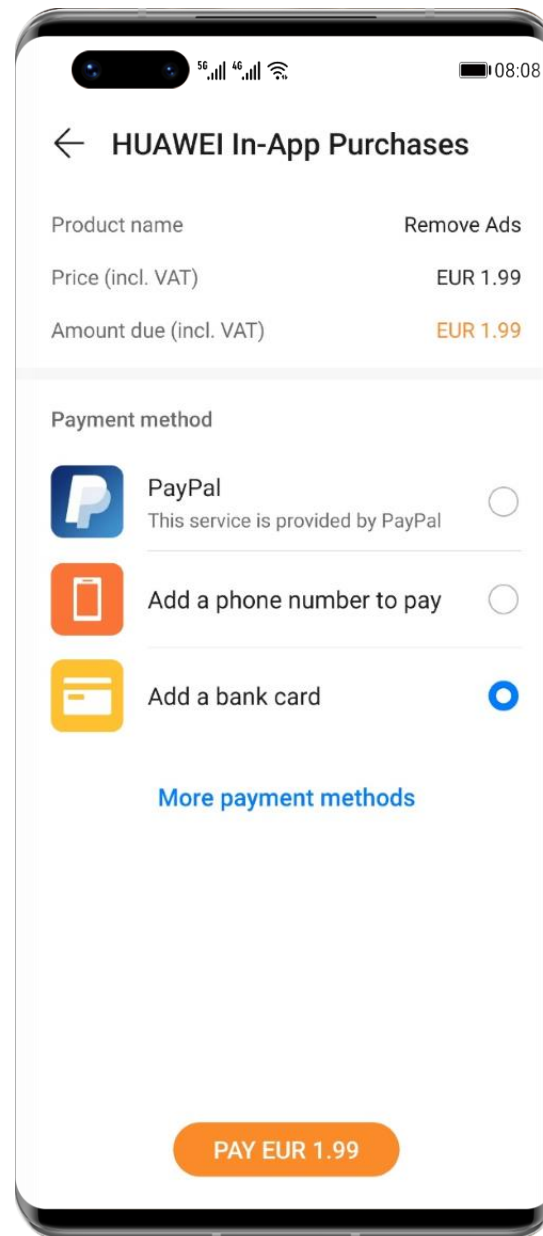


DISCOVERABILITY
USER ACQUISITION
MONETIZATION
USER RETENTION

In-app payments

In-app ads

Rewarded ad videos

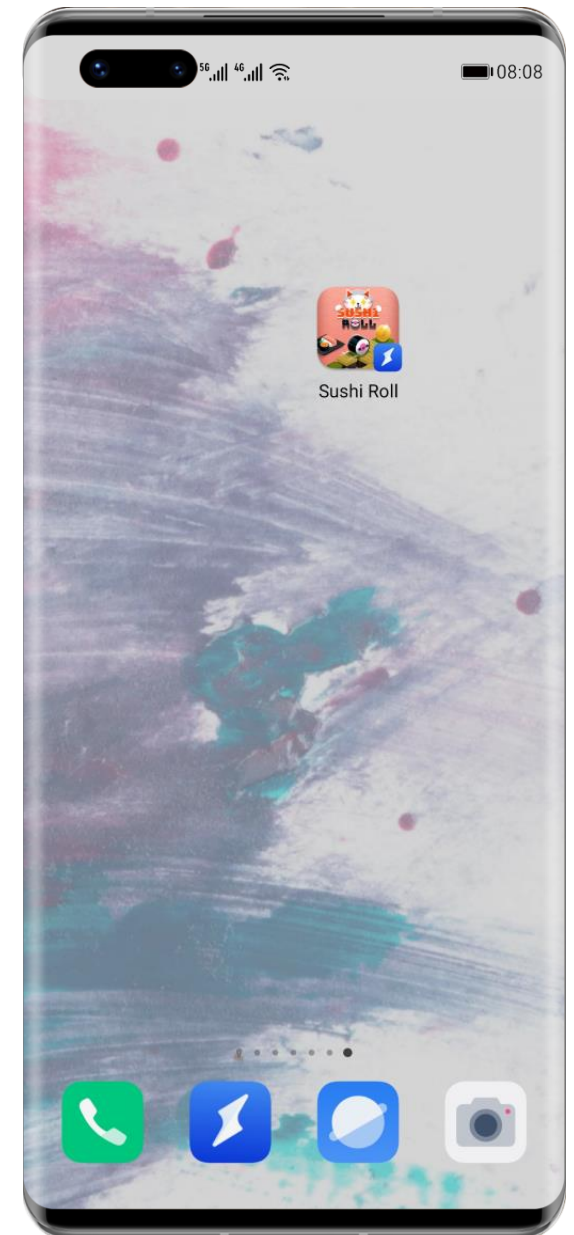
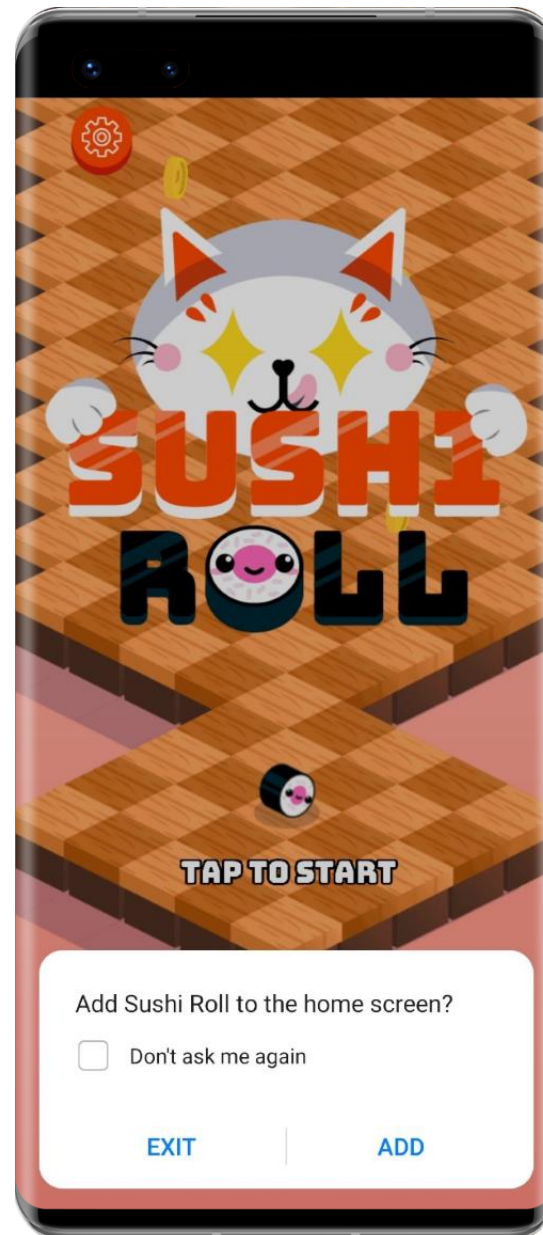


DISCOVERABILITY
USER ACQUISITION
MONETIZATION
USER RETENTION

Tap to open

Ask to save bookmark

Remember status



DISCOVERABILITY
USER ACQUISITION
MONETIZATION
USER RETENTION

Push notifications

Banners in other apps

Tap and access the app

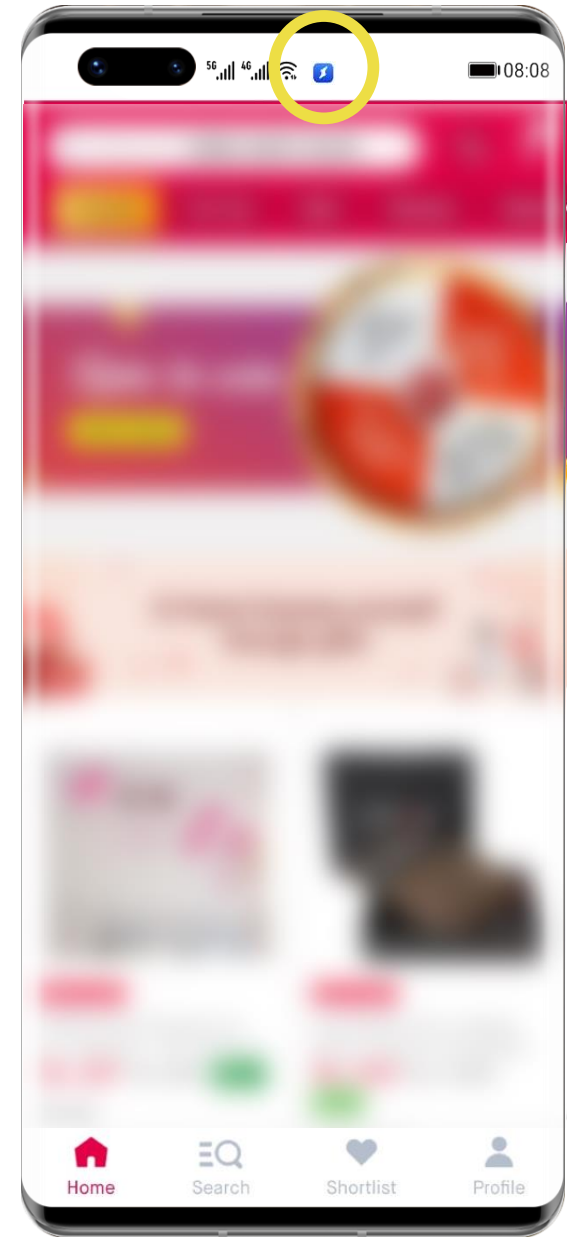
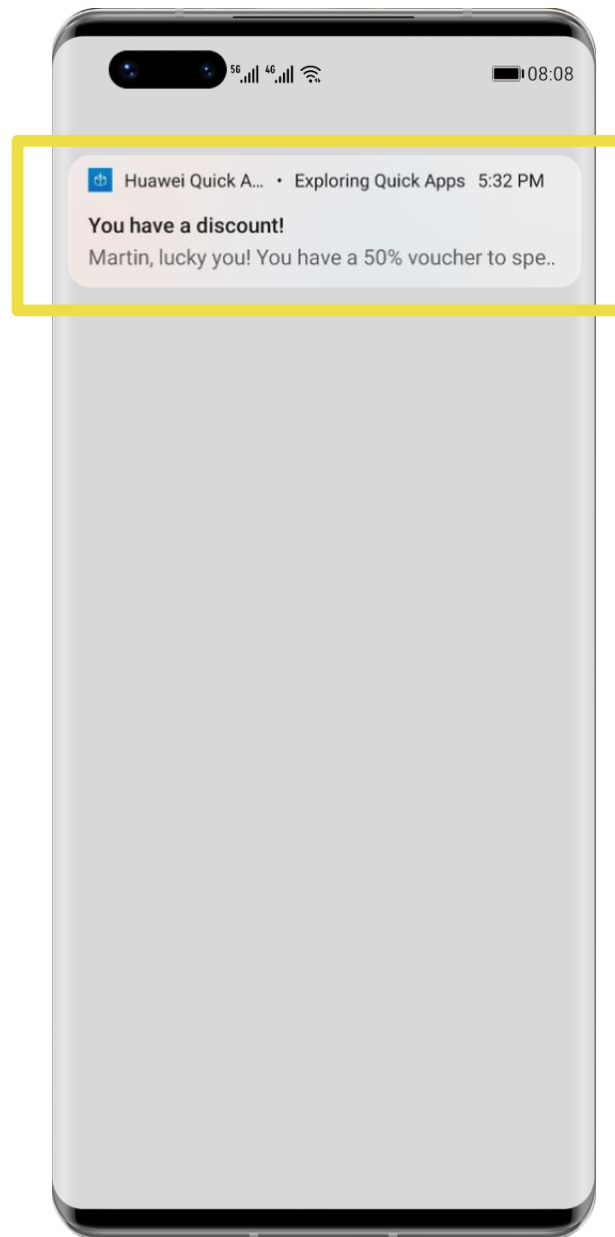




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USE CASES

Transactional services; e-commerce; quick social interactions; no-touch services; casual games; ...

PRODUCTIVITY

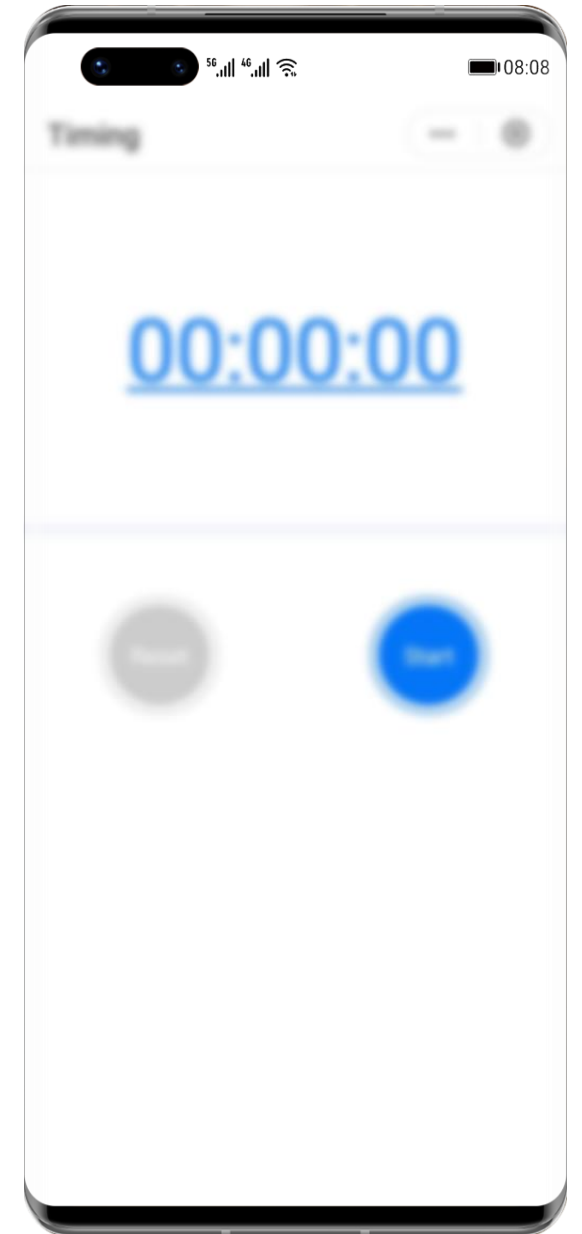
For eventual needs

Task-oriented tools

Just tap and use

Dispose after use

Light and easy-to-use



SHOPPING

Marketing campaigns

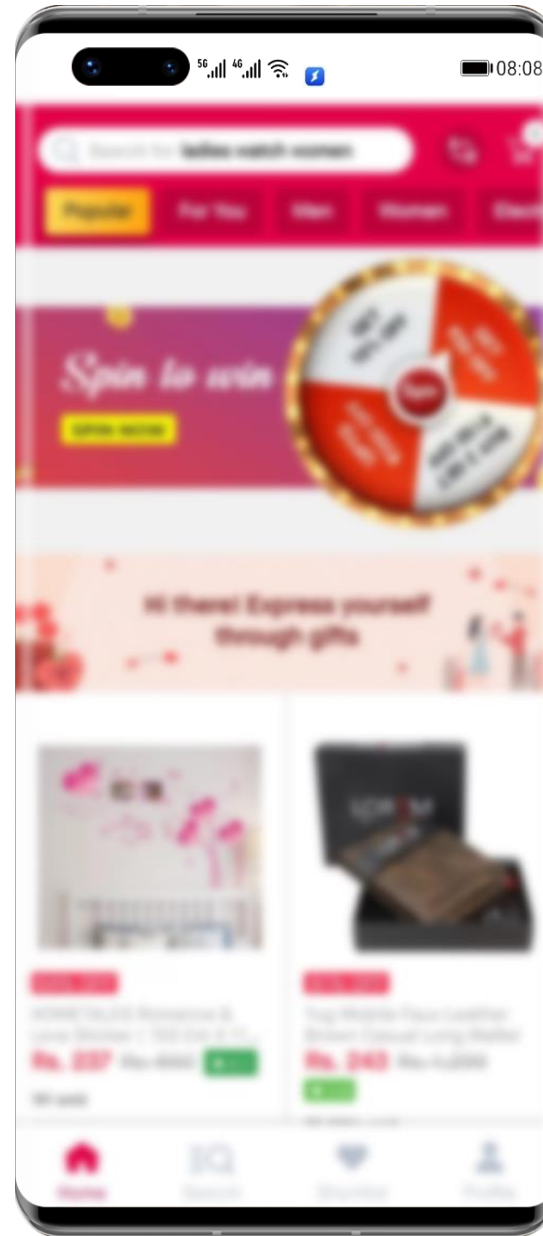
Push notifications

In-App advertising

Tap and buy

QR code and buy

Huawei ID in one tap



COVID-19

Touchless services

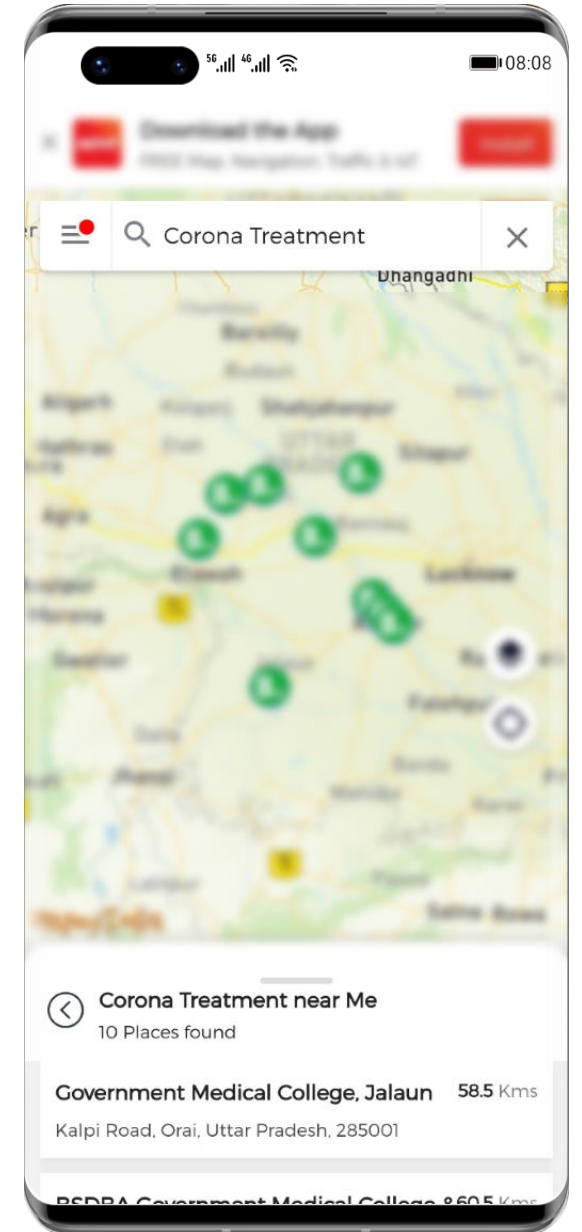
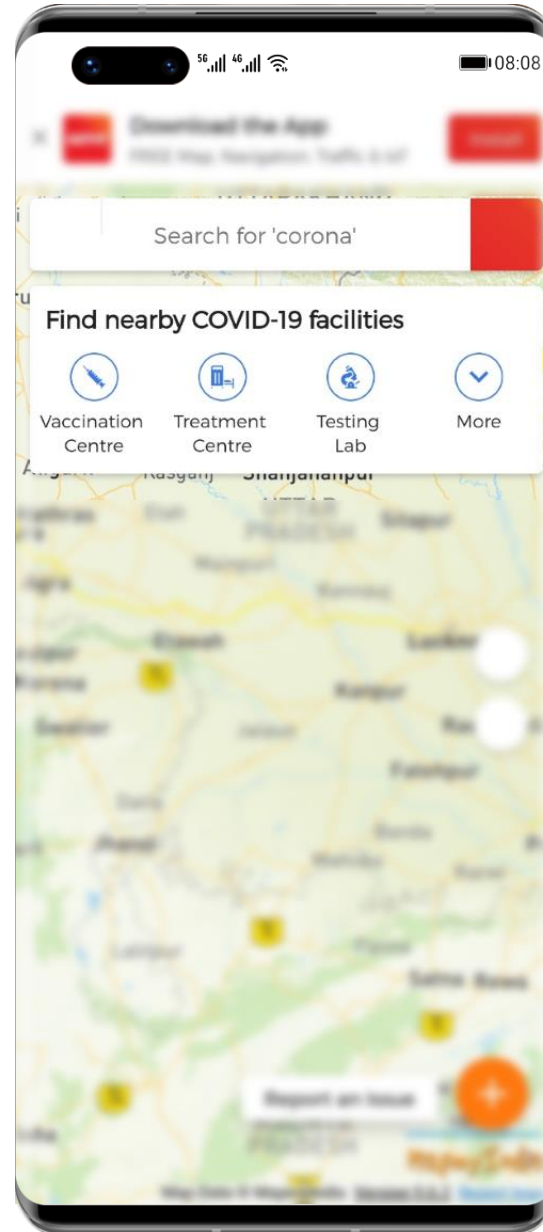
Emergencies

Nearby facilities & services

Alert notifications

Exposure warnings

First aid



PUBLIC SERVICES

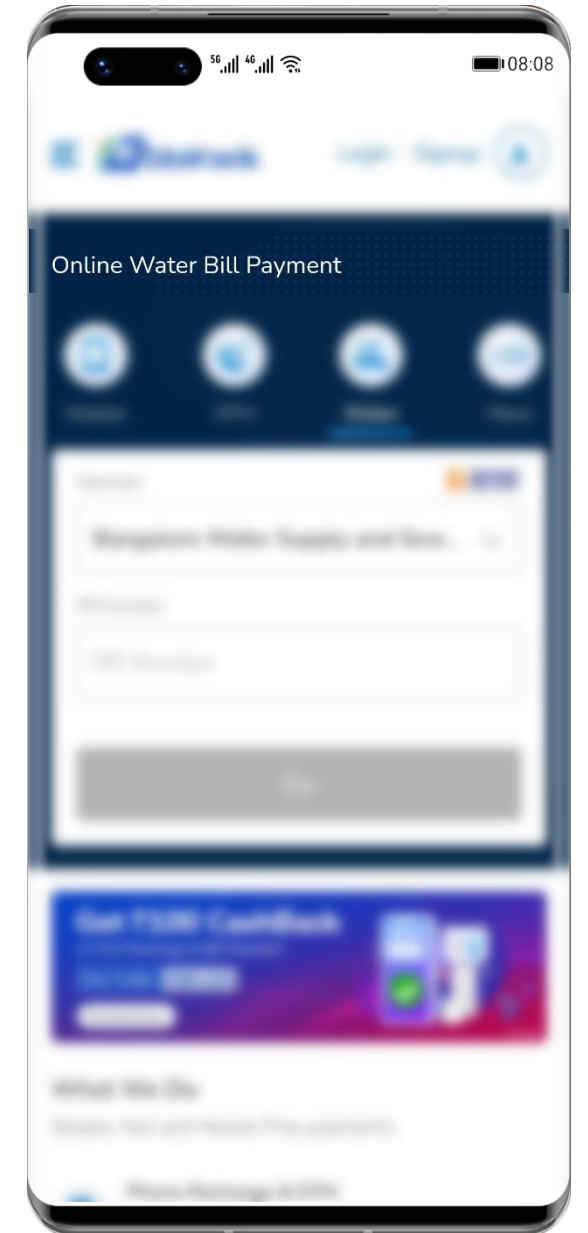
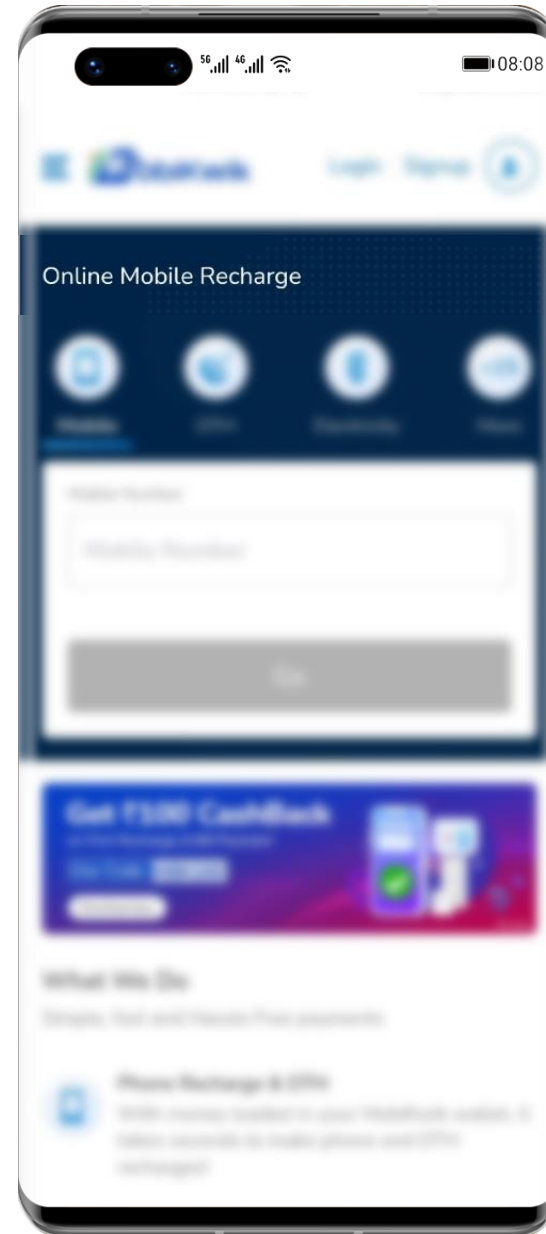
Touchless, online services

Covering citizens' needs

Scan QR-code and access

Utility, taxes payments

Smart city productivity



QUICK GAMES

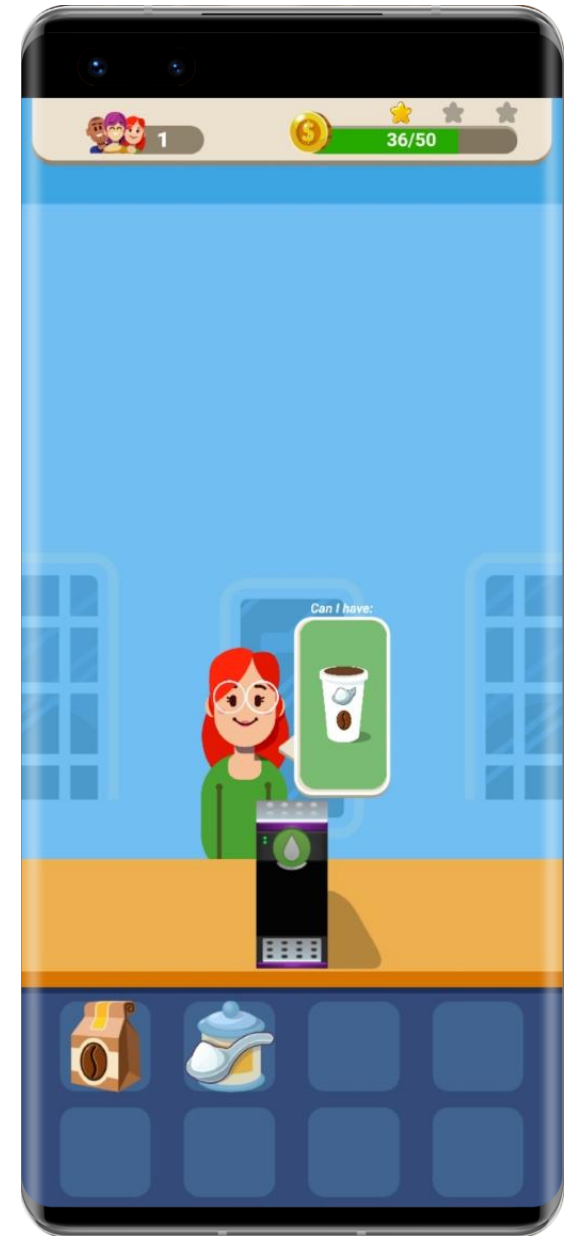
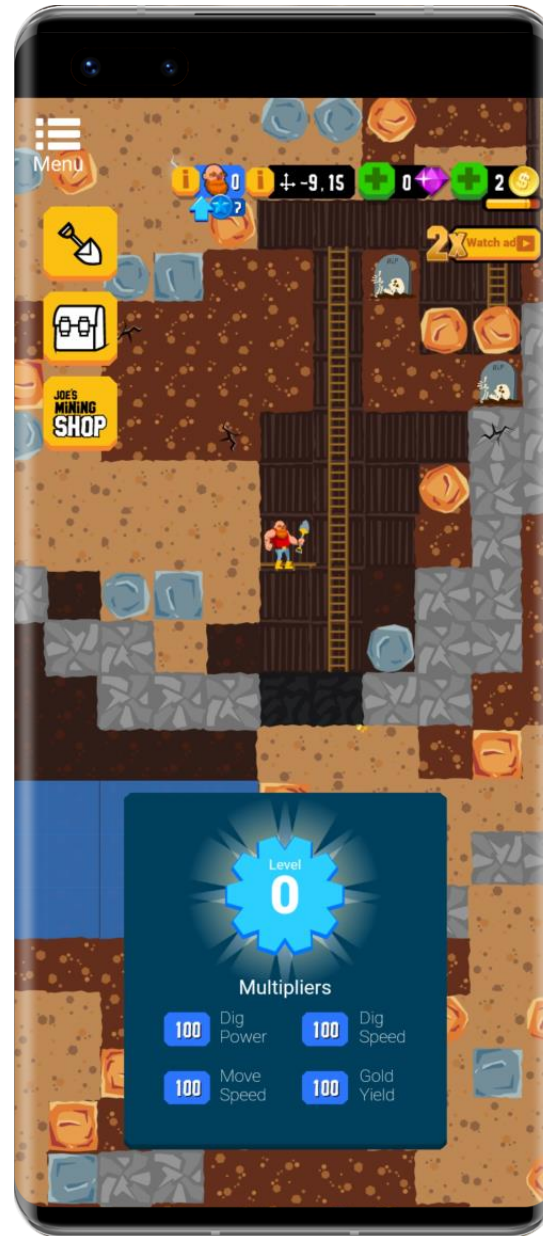
Casual light games

Easy to discover and play

May include Ads and iAPs

One-click authentication

Social interactions



QUICK GAMES

High user acquisition

Simplified version

Trial, preview version



RESTAURANTS & BARS

Touchless service

QR code and access menu

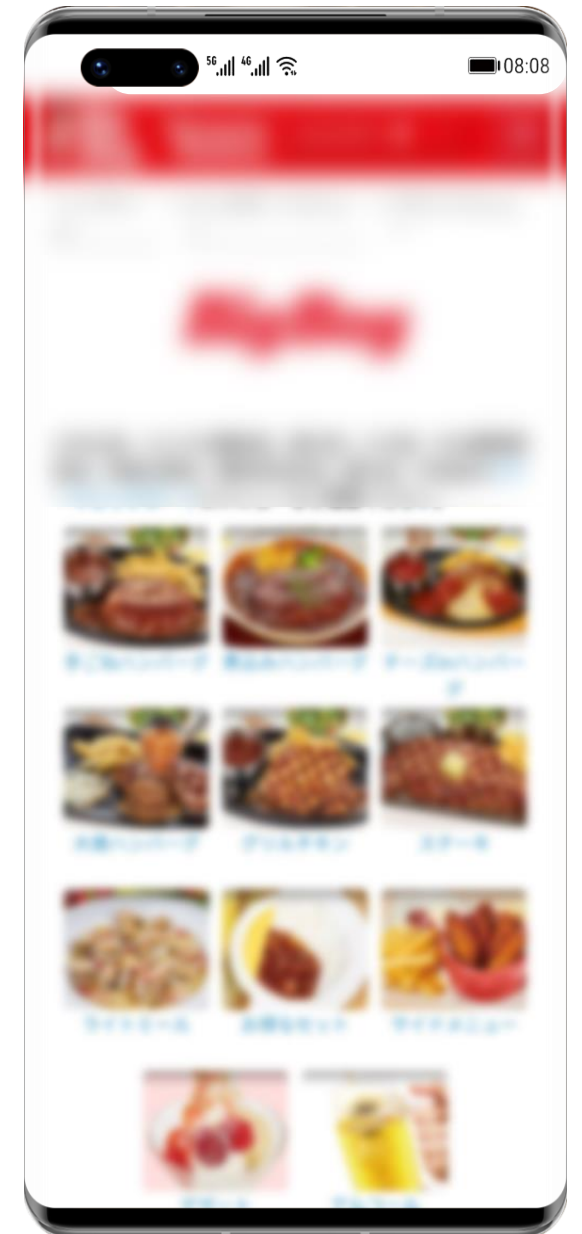
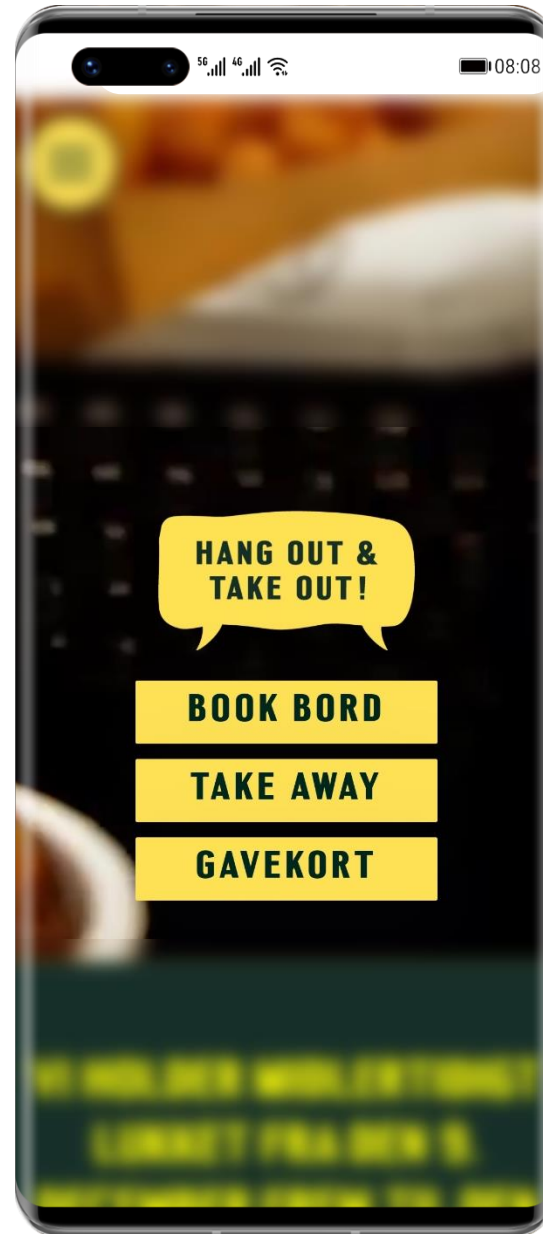
Targeted discounts

Recommendations

Complete dish information

Access to location, orders

Book, order, pay



TRANSPORT

Booking on the go

QR-code, book and pay

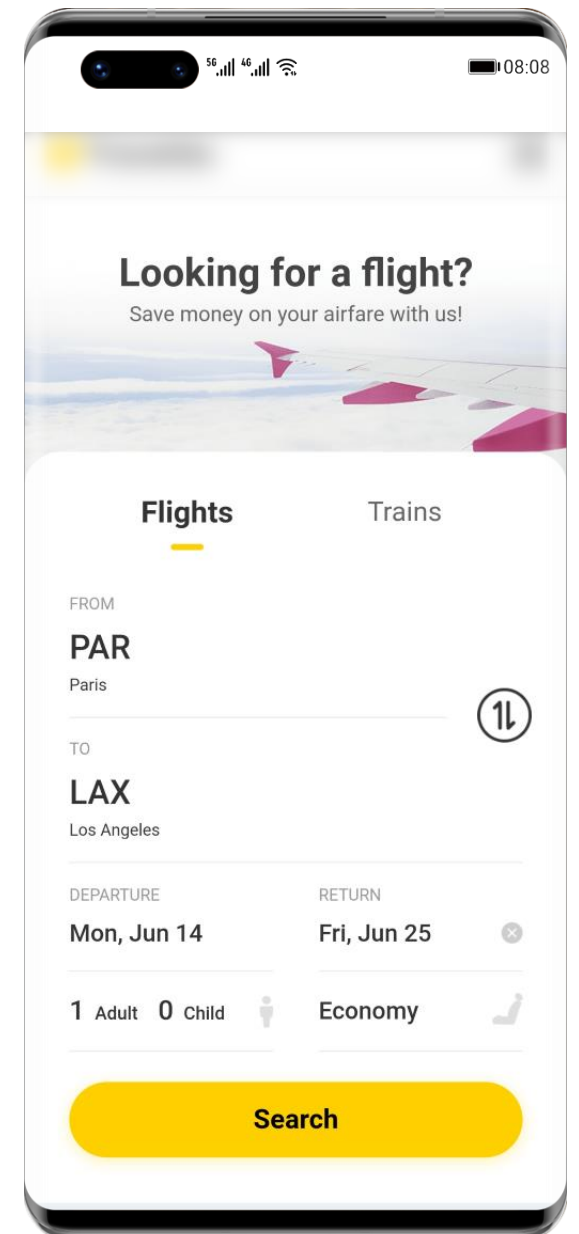
In-journey information

Context based on location

Real-time alerts

Status of the service

Push notifications



IN-VEHICLE INFORMATION & ENTERTAINMENT

Third-party apps on the car's head unit

In-car entertainment functions:

- *reading news;*
- *listening to stories;*
- *watching videos;*
- *playing games;*
- ...



ALSO AS WIDGETS

Display on the home screen

Direct user interaction

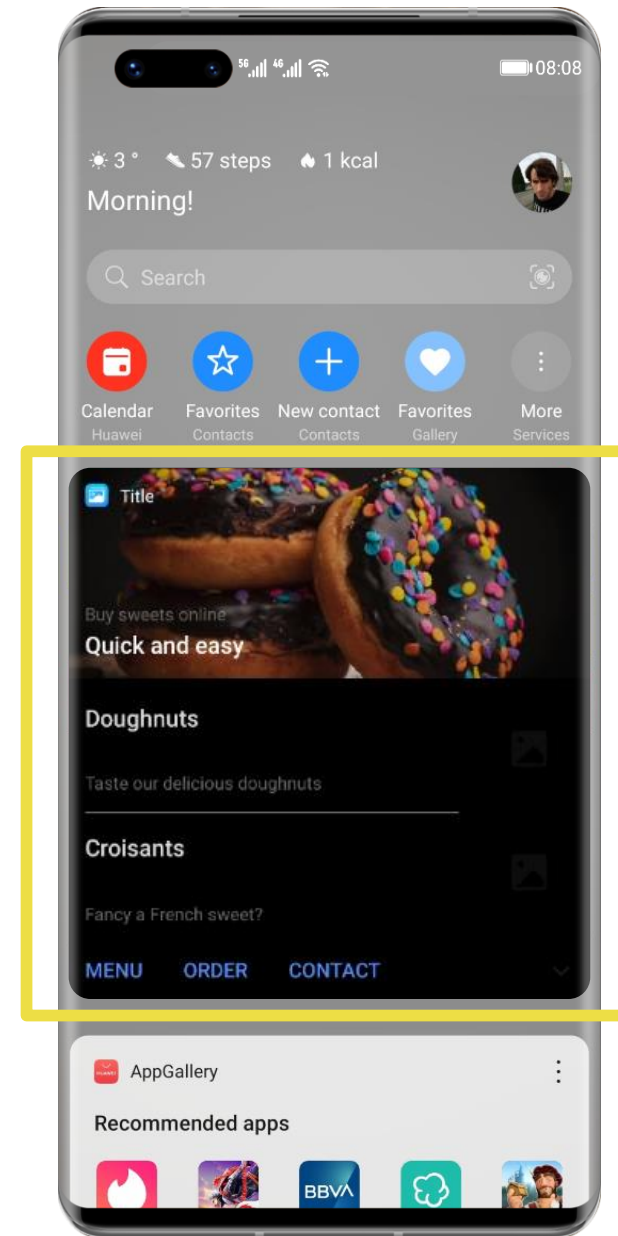




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QUICK APP DEVELOPMENT

Features; IDE; MVVM framework; UI components; packaging; distribution...

KEY FEATURES

MVVM framework based on development trends

W3C standard based on HTML, JS, CSS

Declarative UI

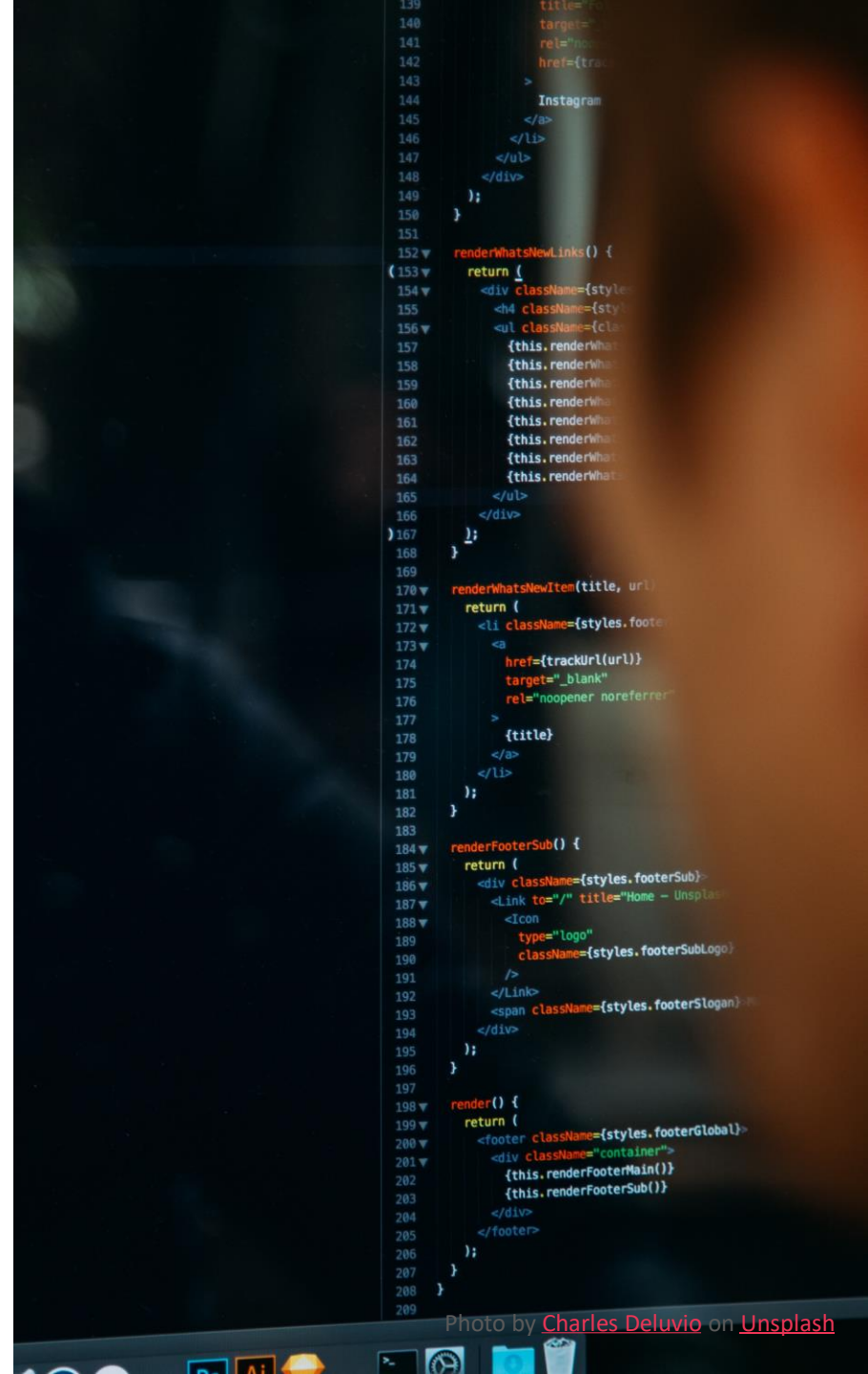
Native features (calendar, hardware...)

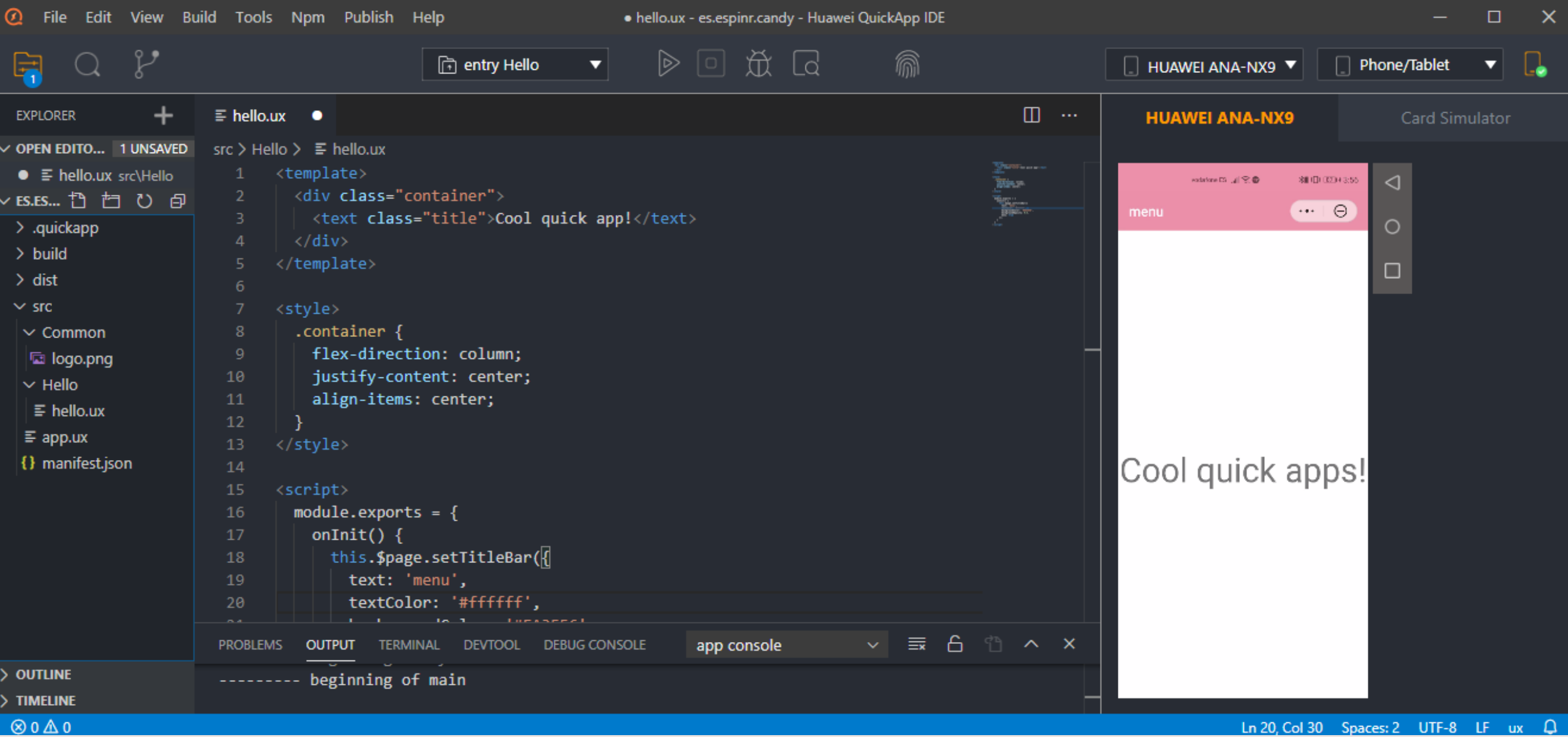
Supported by 25% of device vendors

Ready-to-use modules

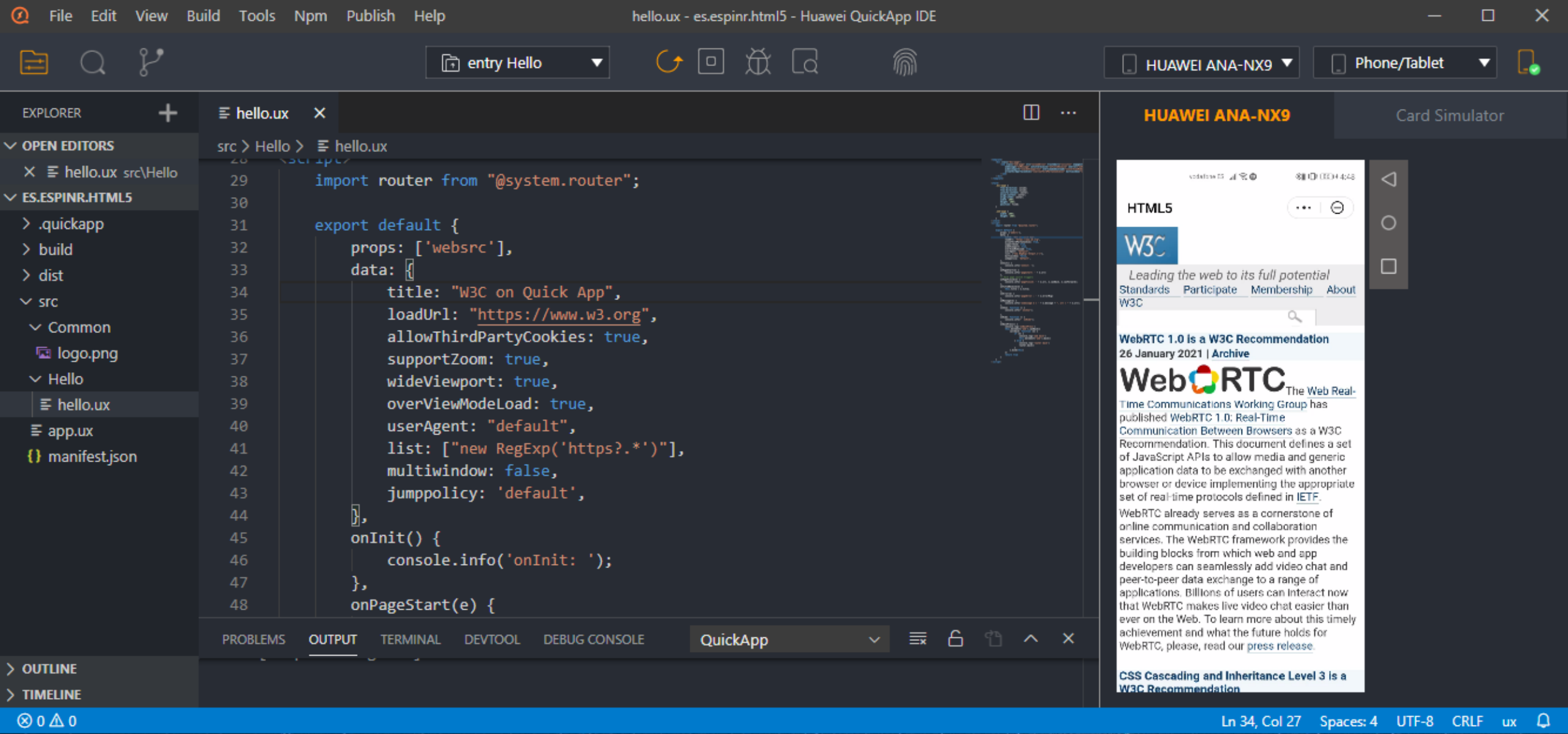
Low learning curve

Easy to convert Web Apps to Quick Apps

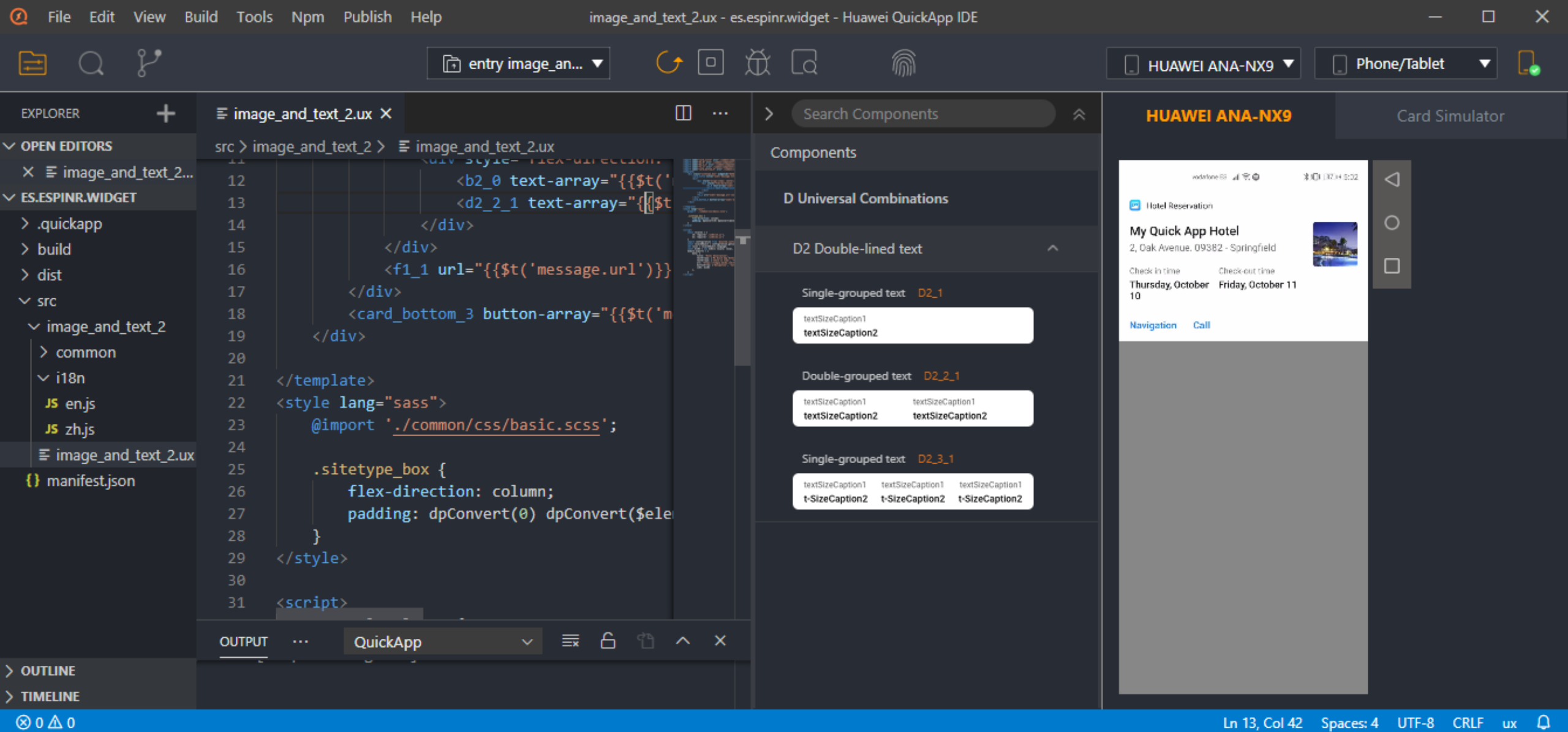




IDE WITH TEMPLATES



HTML5 TO QUICK APP IN SECONDS



CUSTOMIZED WIDGETS: VISUAL UI DEVELOPMENT

MVVM FRAMEWORK

Vue.js-like

Declarative rendering

Reusable UI components

Reactive HTML templates

One-way data flow

Event binding

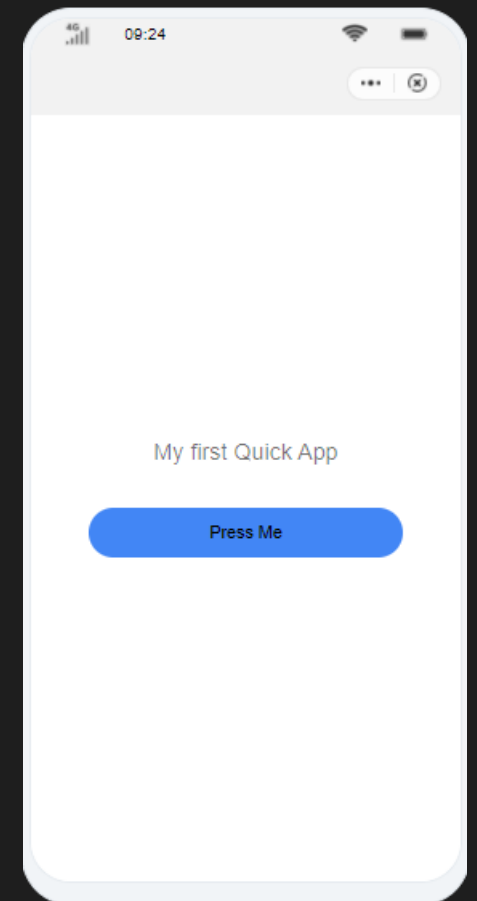
Virtual DOM manipulation

CSS Stylesheets

```
<template>
  <div class="main-page">
    <text class="title">{{title}}</text>
    <input class="btn" type="button" value="Press Me" onclick="changeText" />
  </div>
</template>
```

```
<script>
export default {
  private: {
    title: 'My first Quick App'
  },
  changeText () {
    this.title = 'hello world'
  }
}
</script>
```

```
<style>
.main-page {
  flex-direction: column;
  justify-content: center;
  align-items: center;
}
.btn {
  width: 550px;
  height: 86px;
  margin-top: 75px;
  border-radius: 43px;
  background-color: #4286f5;
  font-size: 30px;
  color: #000000;
}
</style>
```



QUICK PROTOTYPING

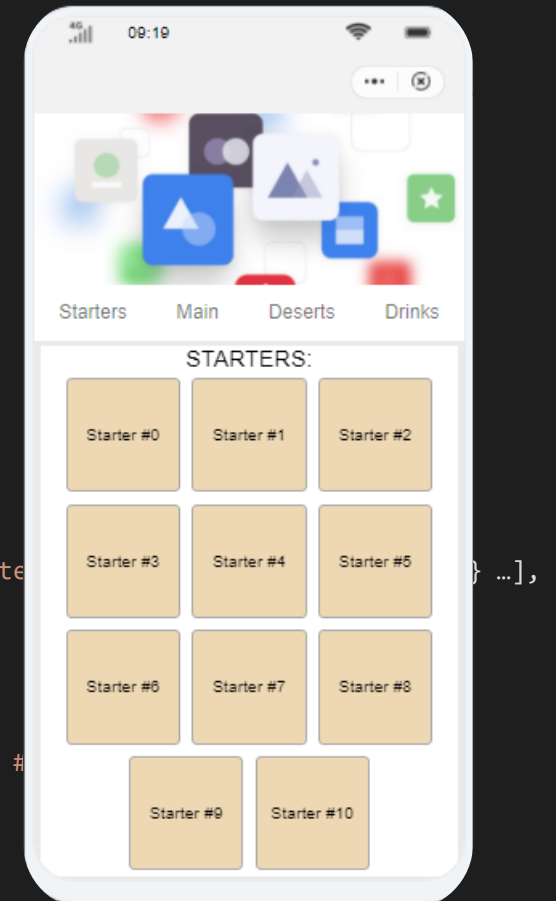
Conditionals and loops

HTML-like markup

UI components

```
<template>
  <div class="main-page">
    <image src="https://...image.jpg" class="image"></image>
    <div>
      <tabs>
        <tab-bar class="tab-bar" >
          <text for="{{tabs}}">{{$item.title}}</text>
        </tab-bar>
        <tab-content class="tab-content" >
          <div class="tab-content-section" for="{{tabs}}">
            <text class="title">{{$item.content}}</text>
            <div class="content {{$item.classname}}">
              <div class="box" for="{{$item.bboxes}}">
                <text>{{$item.name}}</text>
              </div>
            </div>
          </div>
        </tab-content>
      </tabs>
    </div>
  </div>
</template>

<script>
export default {
  private: {
    title: 'My first Quick App',
    tabs: [
      {
        title: 'Starters',
        classname: 'starter',
        bboxes: [ { name: 'Starter #0' }, { name: 'Starter #1' }, { name: 'Starter #2' }, { name: 'Starter #3' }, { name: 'Starter #4' }, { name: 'Starter #5' }, { name: 'Starter #6' }, { name: 'Starter #7' }, { name: 'Starter #8' }, { name: 'Starter #9' }, { name: 'Starter #10' } ],
        content: 'STARTERS:'
      },
      {
        title: 'Main',
        classname: 'main',
        bboxes: [ { name: 'Main #1' }, { name: 'Main #2' }, { name: 'Main #3' }, { name: 'Main #4' }, { name: 'Main #5' }, { name: 'Main #6' }, { name: 'Main #7' }, { name: 'Main #8' }, { name: 'Main #9' }, { name: 'Main #10' } ],
        content: 'MAIN COURSES:'
      }
    ],
    ...
  }
}
</script>
```



SIMPLE APP SETUP

Configuration in manifest

Description of the app

Main look-and-feel

Per-page customization

Permissions declaration

Per-page routing

```
{
  "package": "org.example.quickapp",
  "name": "My first quick app",
  "icon": "/Common/my-local-logo.png",

  "display": {
    "backgroundColor": "#FFFFFF",
    "titleBarBackgroundColor": "#007DFF",
    "titleBarTextColor": "#ffffff",
    "menu": true,
    "textSizeAdjust": "auto",
    "pages": {
      "main": {
        "fullScreen": true,
        "orientation": "landscape",
        "menu": false,
        "titleBar": false
      },
    },
  },

  "features": [
    { "name": "system.alarm" },
    { "name": "system.clipboard" },
    { "name": "system.router" },
    { "name": "system.contact" },
    { "name": "service.push" }
  ],

  ...
}
```

```
...

"router": {
  "entry": "main",
  "pages": {
    "main": {
      "component": "main"
    },
    "component/checkout": {
      "component": "index"
    }
  },
},

"trustedSslDomains": [
  "expired.badssl.com"
],
}
```

APP LIFECYCLE

Main app-level events

Granular page-level events

Global methods

Global variables

```
<script>
  module.exports = {
    onCreate() {
      console.info('Application onCreate')
    },
    onRequest() {
      console.info('Application onRequest')
    },
    onShow() {
      console.info('Application onShow')
    },
    onHide() {
      console.info('Application onHide')
    },
    onDestroy() {
      console.info('Application onDestroy')
    },
    onError(error) {
      console.info('Application onError')
    },
    // Method exposed to all pages
    methodApp() {
      console.info('This is a app-level method')
    },
    // Data exposed to all pages
    dataApp: {
      name: 'this is app-level data'
    }
  }
</script>
```

ADVANCED FEATURES

Internationalization

Multilingual strings

Access to system's locale

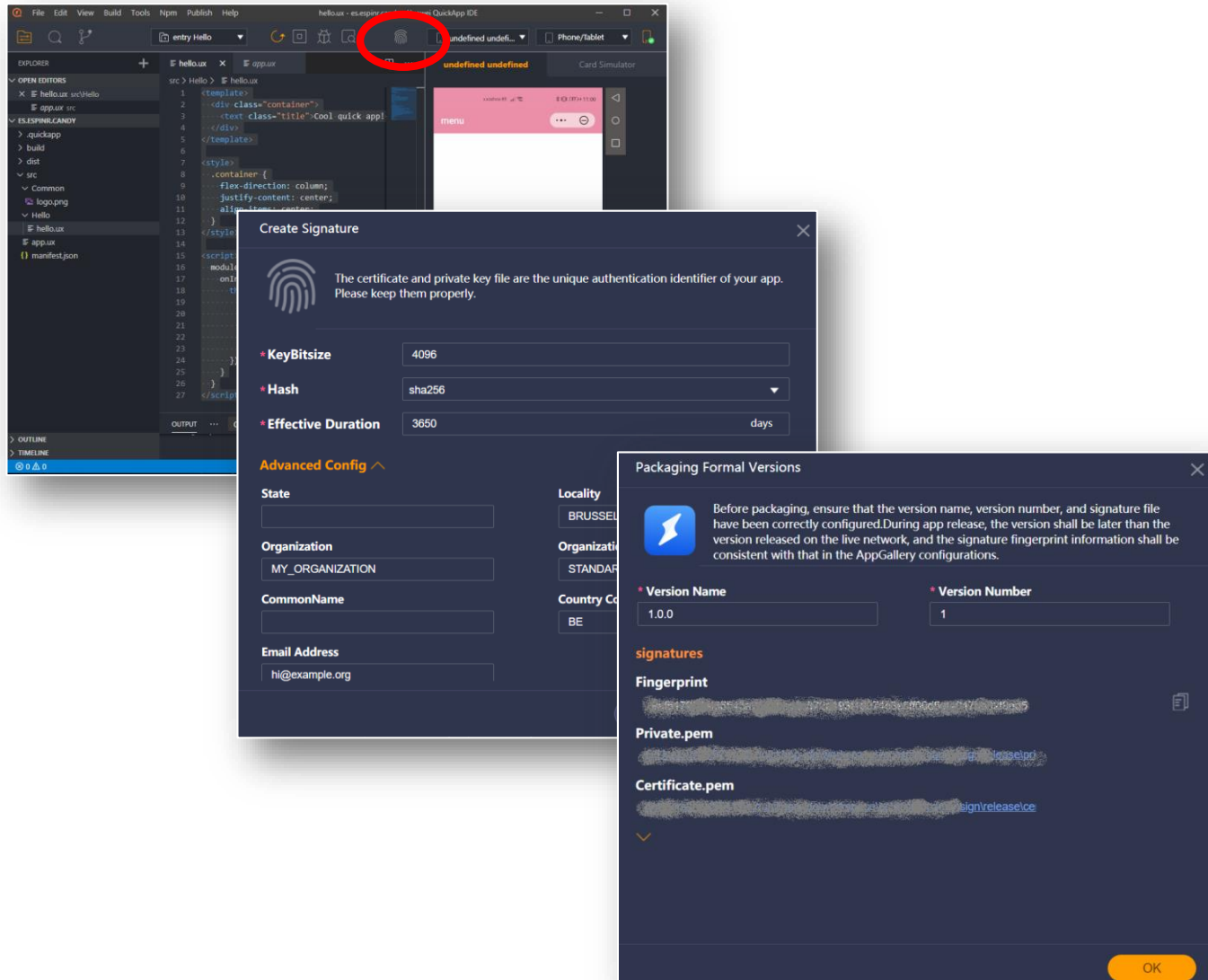
```
<template>
  <div>
    <text>{{t('message.mainComponent.title')}}</text>
  </div>
</template>

<script>
  import configuration from '@system.configuration'
  export default {
    onReady () {
      console.info(configuration.getLocale().language)
    }
  }
</script>
```

```
<!-- /i18n/en-US.json -->
{
  "message": {
    "appName": "My First Quick App",
    "mainComponent": {
      "title": "This is my quick app"
    },
    ...
  }
}
```

```
<!-- /i18n/zh-CN.json -->
{
  "message": {
    "appName": "我的第一个快速应用程序",
    "mainComponent": {
      "title": "这是我的第一个快速应用程序 "
    },
    ...
  }
}
```

PACKAGING & DISTRIBUTION



Development

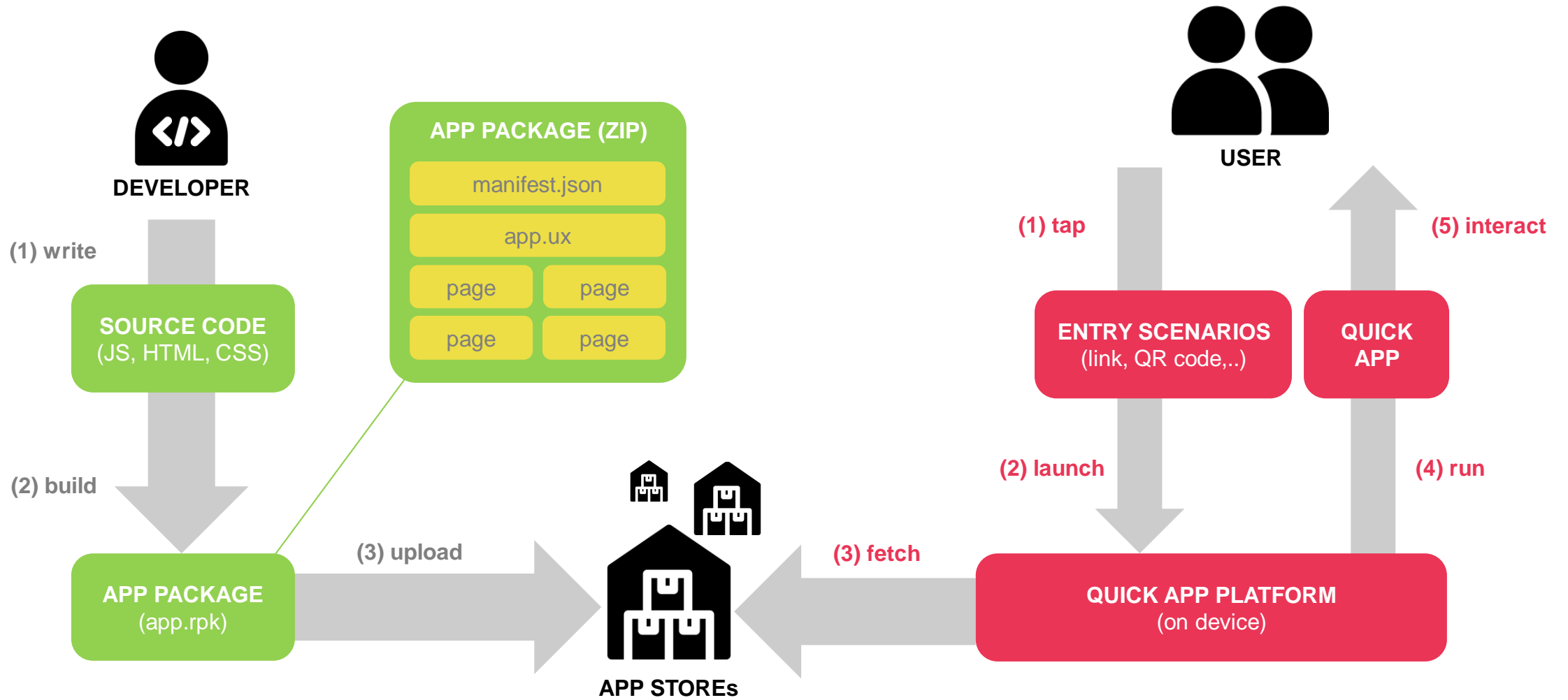
Simulation & Testing

[Generate signature]

Build and sign package

Signed release (RPK)

Ready to publication



Icons: [Larea](#) from the Noun Project

DISTRIBUTION FLOW



A/B Testing

Change how your app works and looks without requiring user updates.

[View documents](#)



My apps



My projects



App analytics



AppGallery Download

APP GALLERY CONNECT: PROMOTE THE APP

Release app ^

App information

Version information ^

1.0.1 Removed by de

Version/Upgrade

My records ^

Version history New

App information

This information will be displayed on HUAWEI AppGallery. Any changes will be released with the next version of the app.

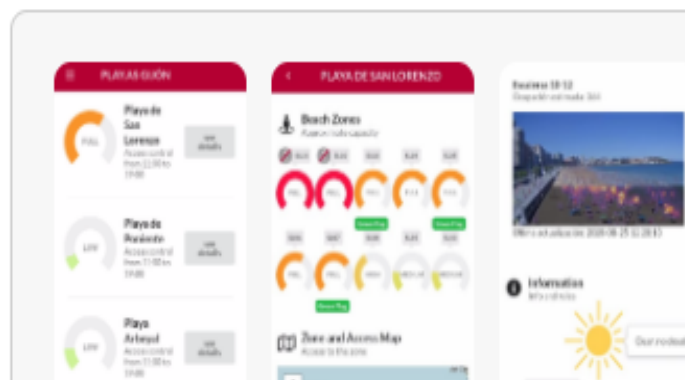
Save

✓ The app information has been modified. Please continue to fill in the version information. [Submit version](#)

* Visual assets

Upload visual assets that will be displayed on the app details page. Uploading in-app screenshots is mandatory. Other visual assets, such as videos, are optional but will greatly improve the display effect of your app in HUAWEI AppGallery.

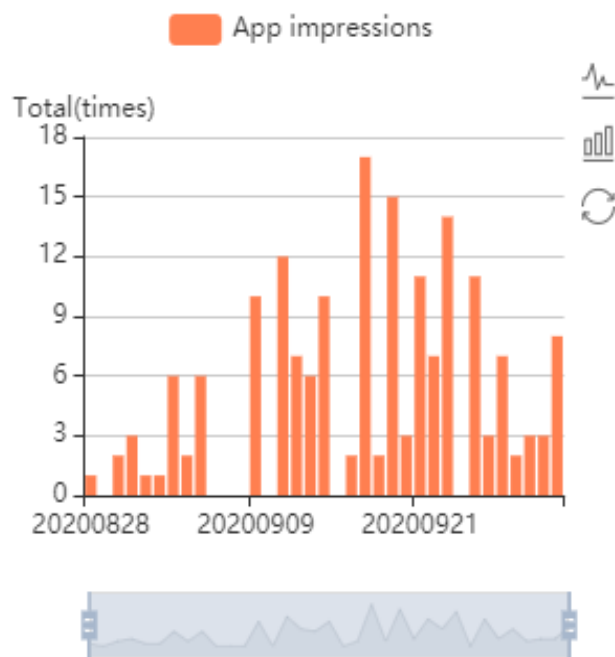
* Screenshots



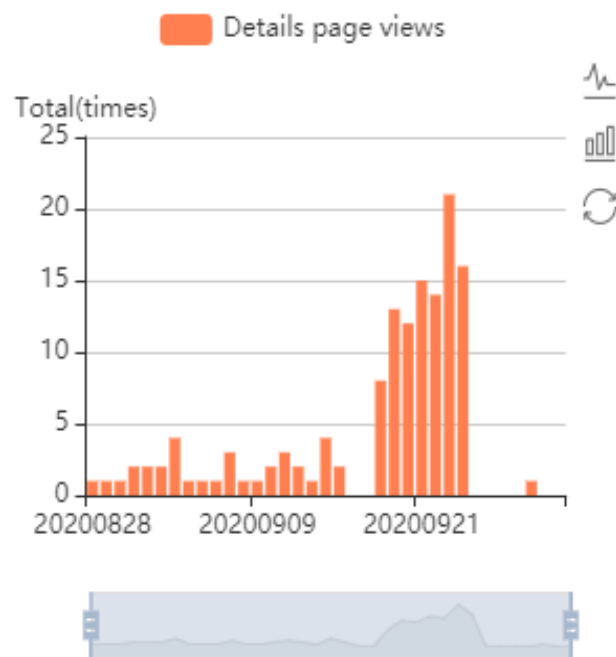
APP GALLERY CONNECT: MANAGE VERSIONS

HUAWEI Analytics provides you with data such as impressions, downloads, and in-app purchases, as well as the description of some fields. For details about the indicators, please refer to [Guide for Checking Analysis Data in AppGallery Connect](#).

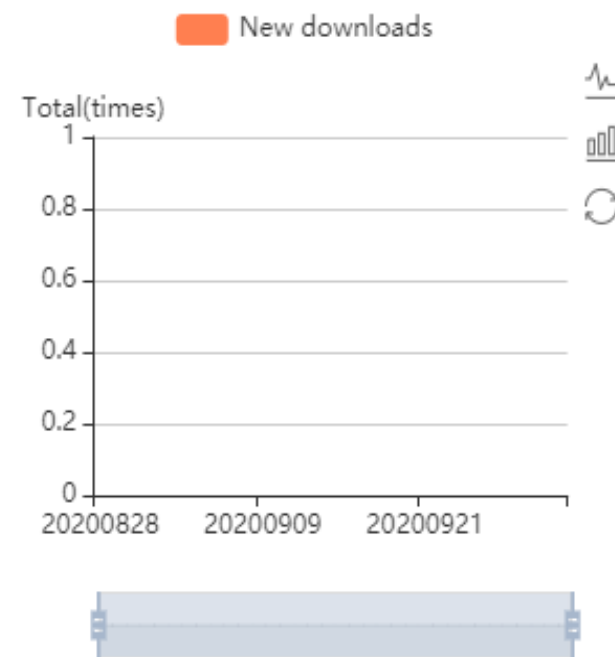
App impressions 175 ?



Details page views 135 ?



New downloads 0 ?



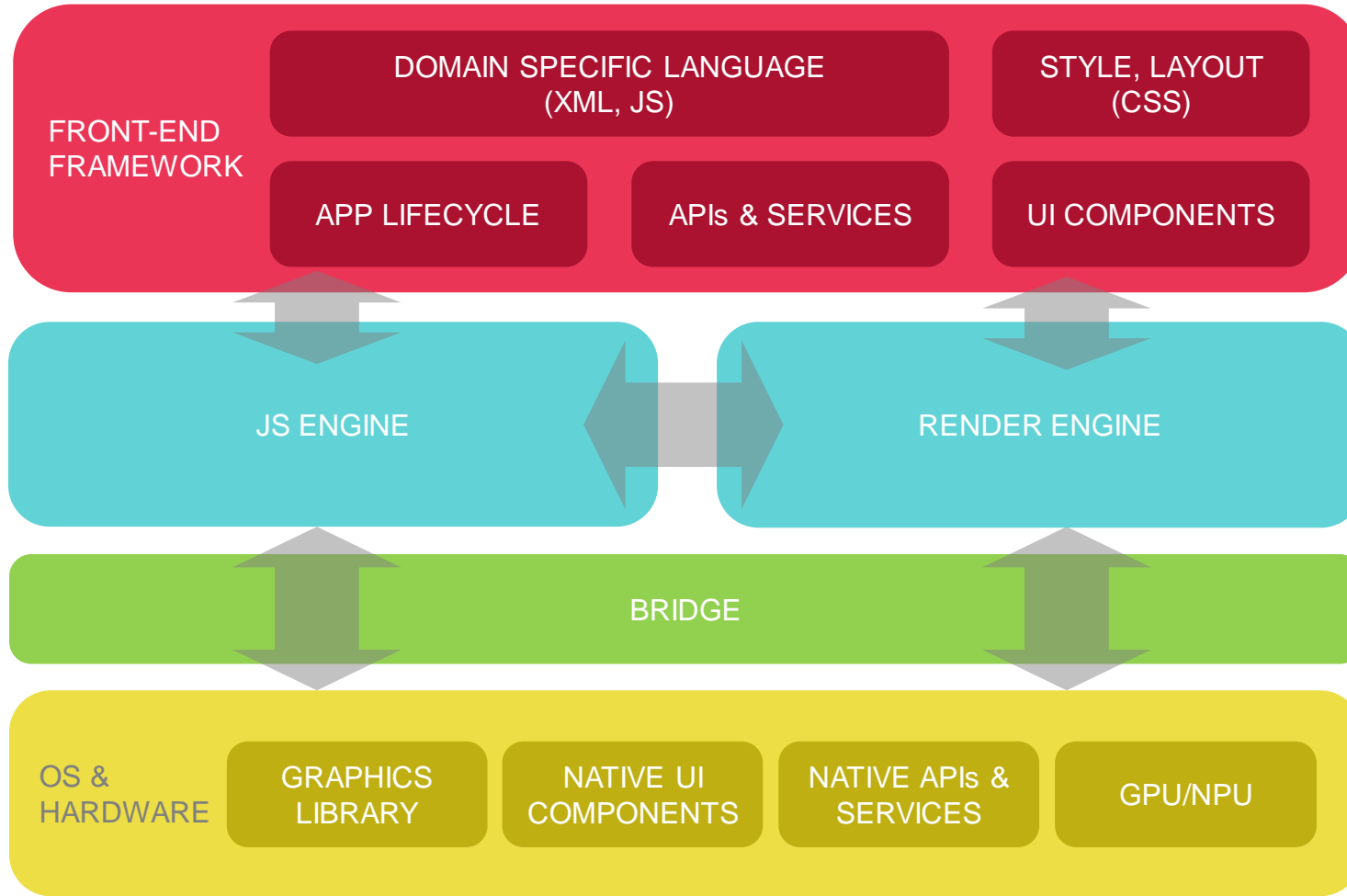
APP GALLERY CONNECT: KPI ANALYSIS



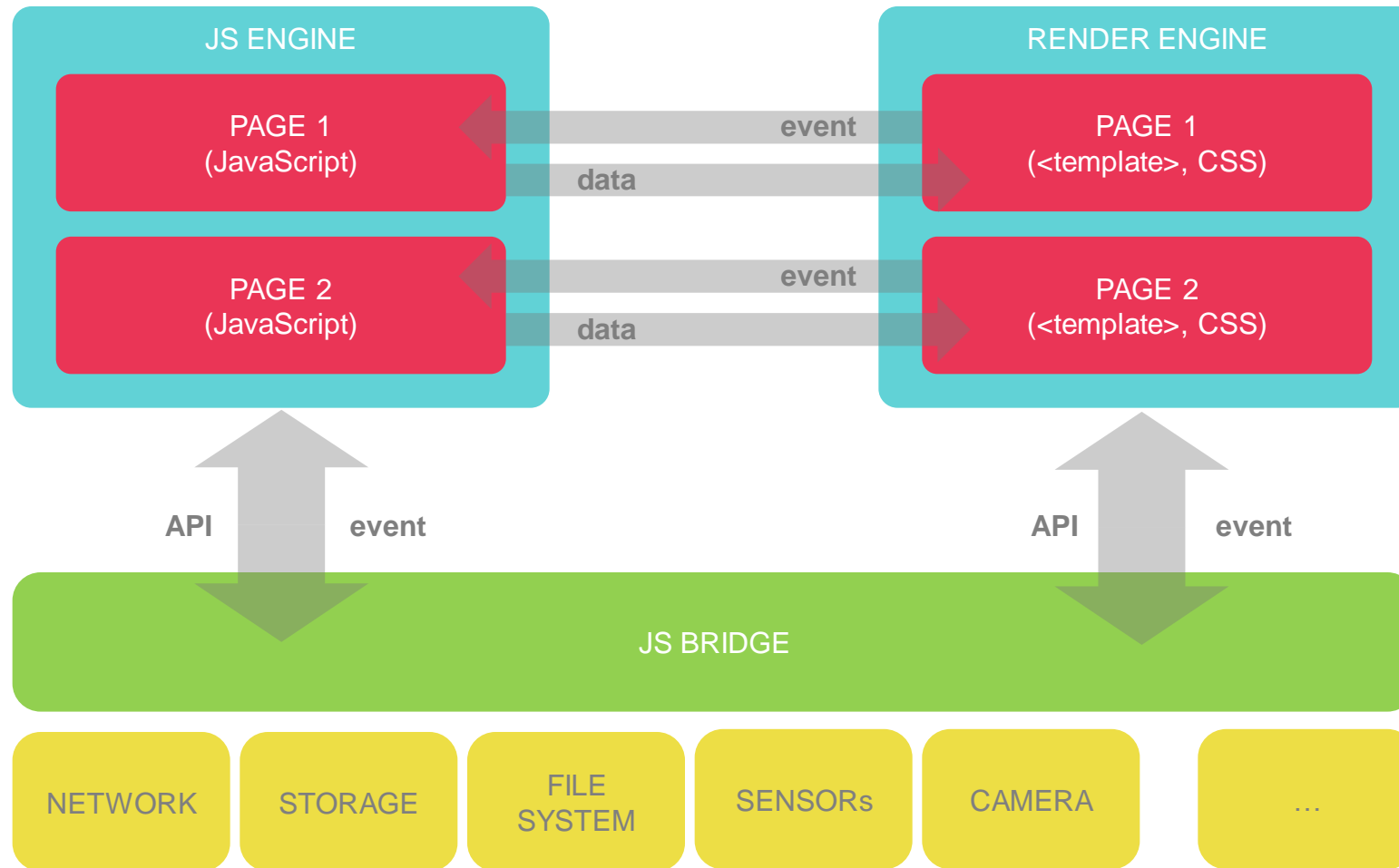
Photo by HalGatewood.com on Unsplash

QUICK APP ARCHITECTURE

Implementation; components; basic APIs; ...



QUICK APP PLATFORM ARCHITECTURE



RUNTIME FRAMEWORK

BASIC COMPONENTS

A

WEB

PROGRESS

RATING

SPAN

TEXT

MARQUEE

IMAGE

CONTAINERS

DRAWER

RICHTEXT

LIST

STACK

POPOP

SWIPER

REFRESH

TABS

FORMS

INPUT

LABEL

OPTION

PICKER

SELECT

SLIDER

SWITCH

TEXTAREA

VIDEO

CAMERA

CANVAS

SLIDE VIEW

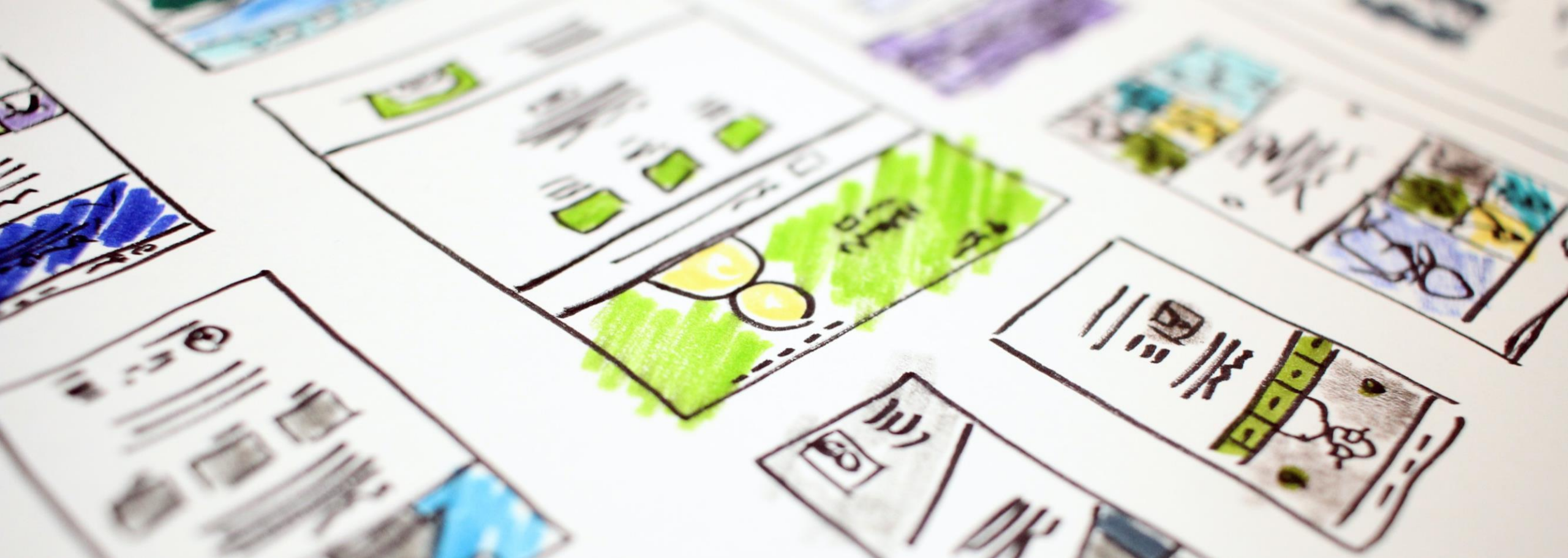
MAP

CUSTOM MARKER

QUICK APP BUILT-IN UI COMPONENTS

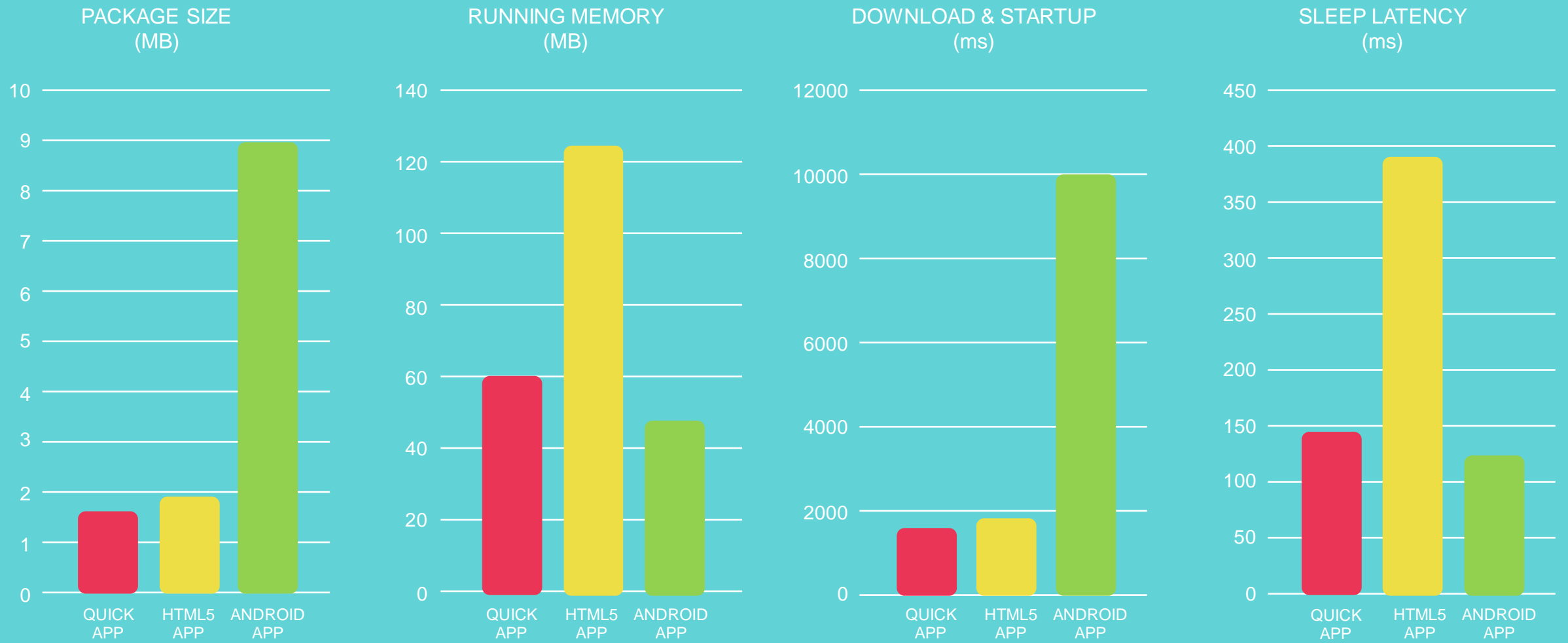
SYSTEM & NETWORK		INPUT - OUTPUT		DEVICE FEATURES		VENDOR SERVICES
RUN IN BACKGROUND	CRYPTOGRAPHY	QR CODE	QUICK APPS SHARING	NETWORK STATUS	DEVICE AUDIO VOLUME	(AI) TEXT TRANSLATION
SHORTCUT (INSTALLATION)	ZIP MANAGEMENT	AUDIO RECORDINGS	CLIPBOARD	BATTERY	DEVICE ALARMS	(AI) SPEECH RECOGNITION
SYSTEM CONFIGURATION	STORAGE	CANVAS	EXTERNAL SHARING	BRIGHTNESS	CONTACTS	PAYMENTS
PACKAGE MANAGEMENT	FILE SYSTEM	ANIMATIONS	PUSH NOTIFICATIONS	GEOLOCATION	CALENDAR	AUTH.
APP INFO	WEB SOCKETS	IMAGES	WEB VIEW	SENSORS	SMS	STATISTICS
ROUTING	FETCH	AUDIO	DIALOGS	VIBRATOR	WIFI	ADS
DEVICE INFO	UPLOAD DOWNLOAD	VIDEO	IN-APP NOTIFICATIONS	DAILY STEPS	BLUETOOTH	USER ACCOUNT

APIs & SERVICES



PERFORMANCE

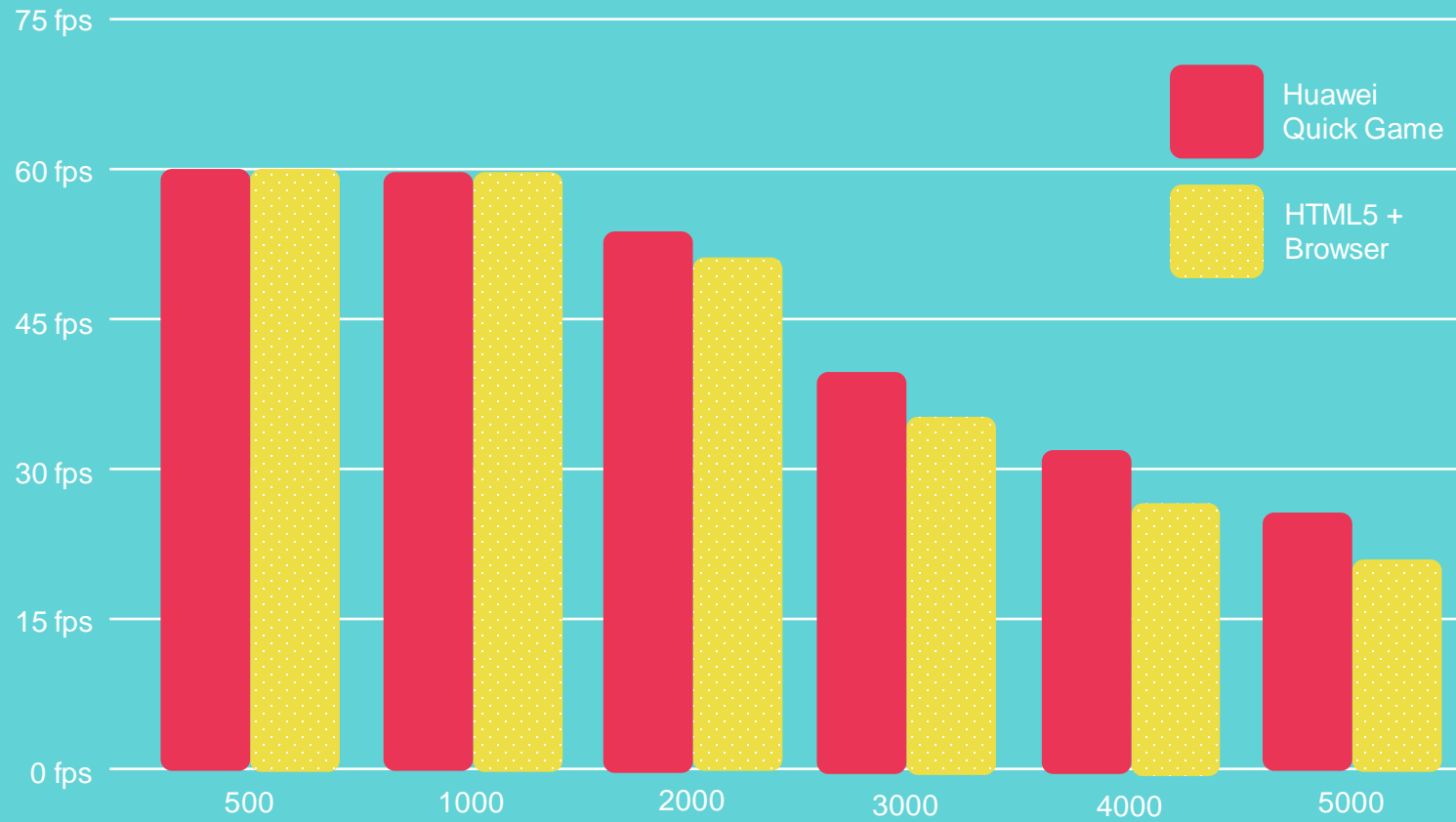
*Benchmark: Quick Apps, Web applications,
Android apps, and games*



Comparison of applications performing the same function (source: Huawei 2019)

PERFORMANCE OF QUICK APPS

GAME SPRITES IN USE
PERFORMANCE (in frames per second)



(Source: Huawei 2019)

PERFORMANCE OF QUICK GAMES

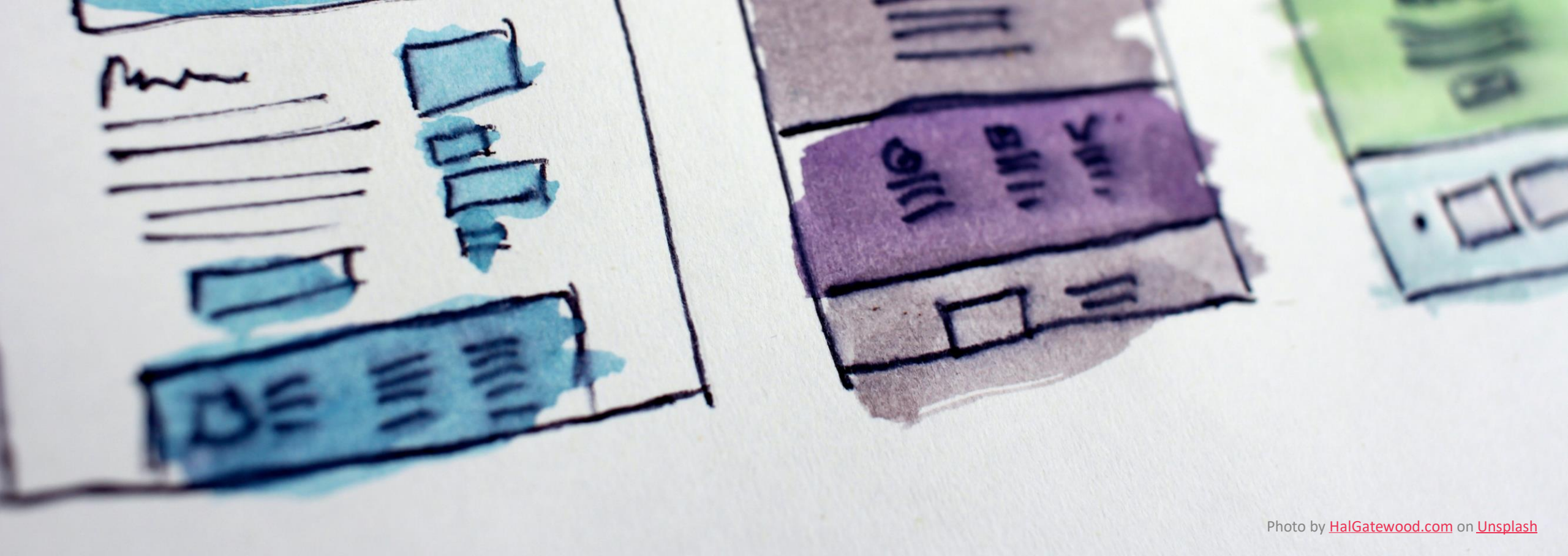


Photo by [HalGatewood.com](https://www.unsplash.com/profile/HalGatewood.com) on [Unsplash](https://www.unsplash.com/)

THANK YOU

Quick App Initiative

<https://quick-app-initiative.ow2.io>

