

# **Firebase**

## **Back-end as a Service**



# 박종욱

(주)뉴로어소시에이츠 CTO

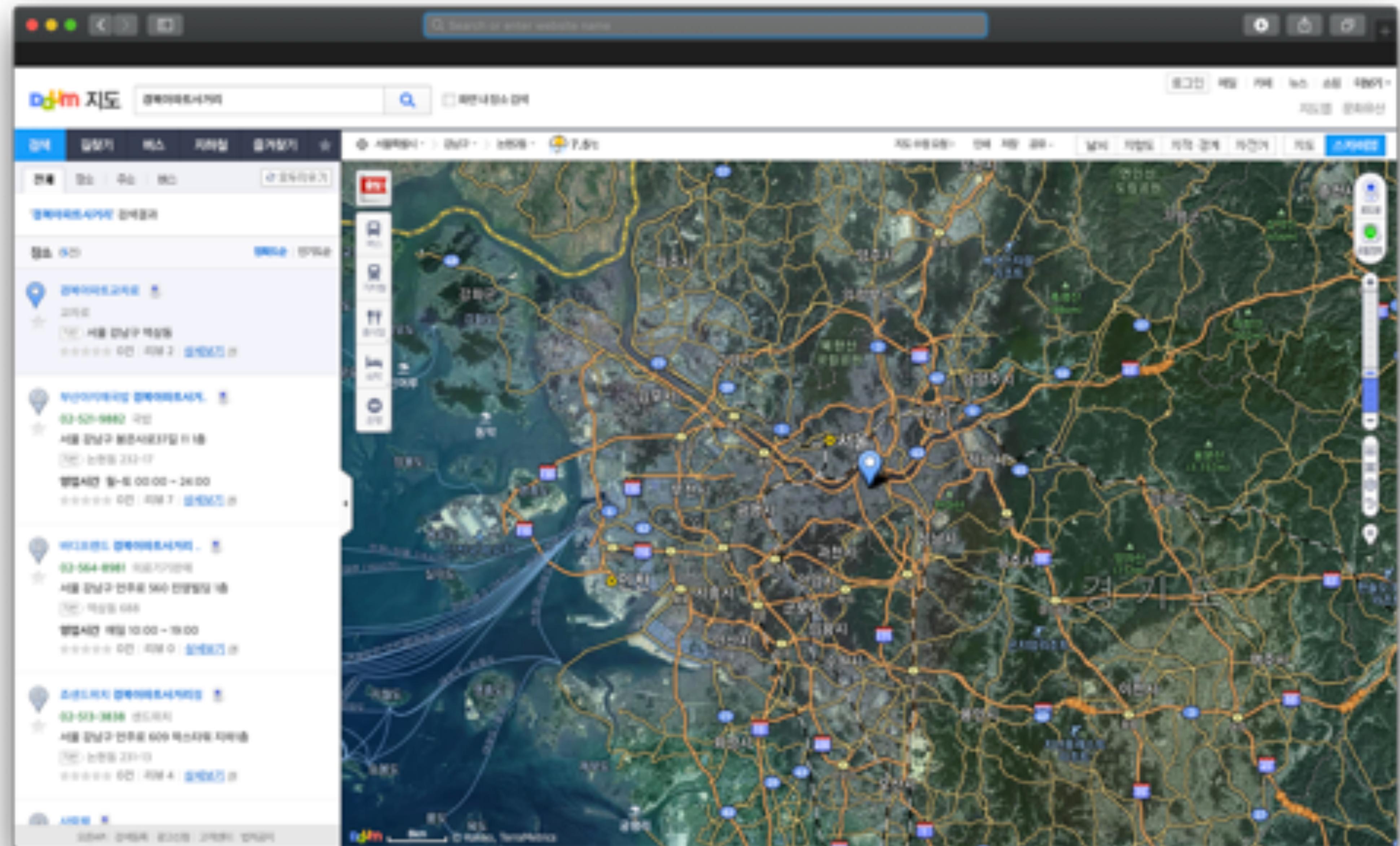
[nedpark@outlook.com](mailto:nedpark@outlook.com)

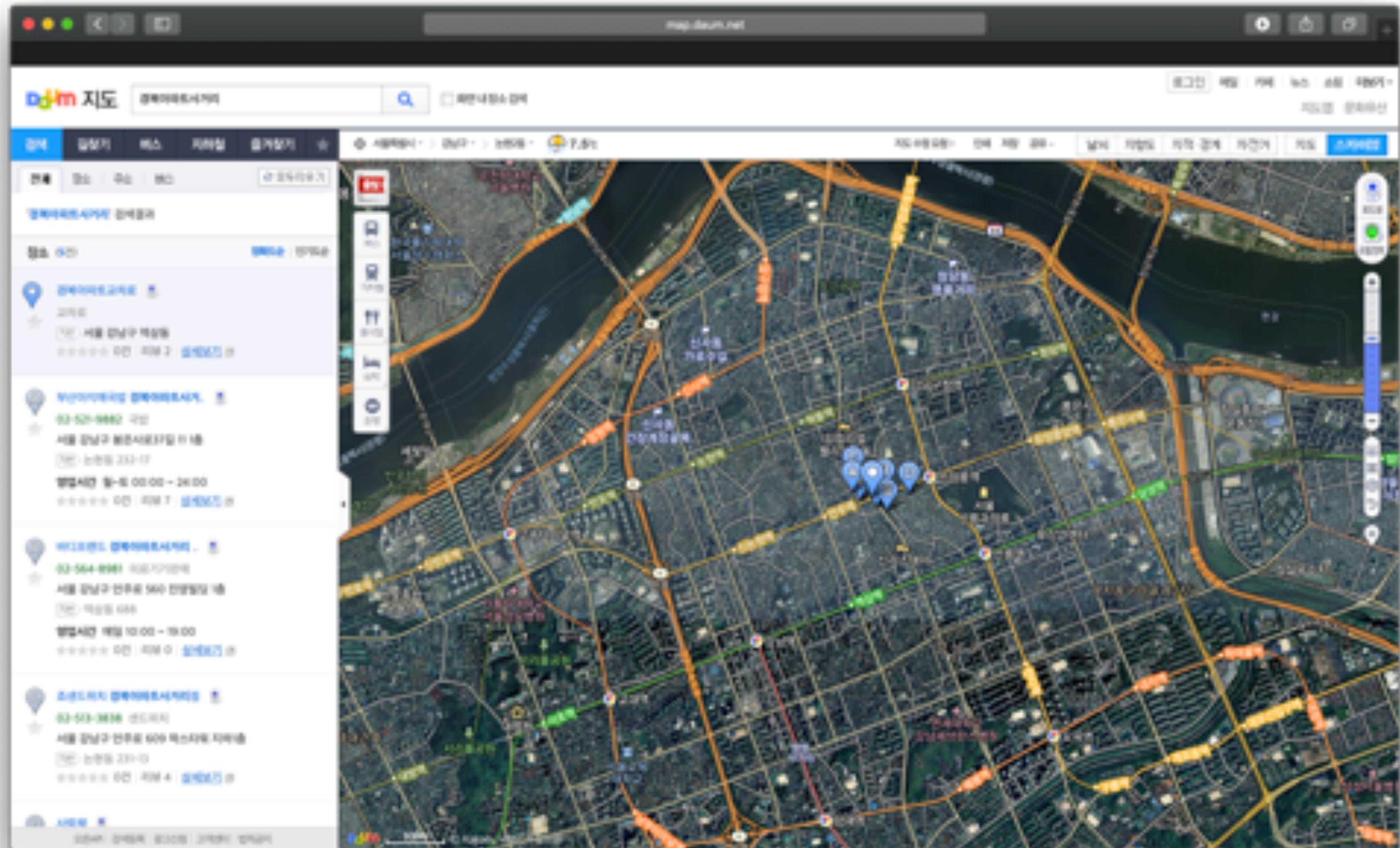
2002~2008 작은(?) 회사에서 웹 개발, 운영

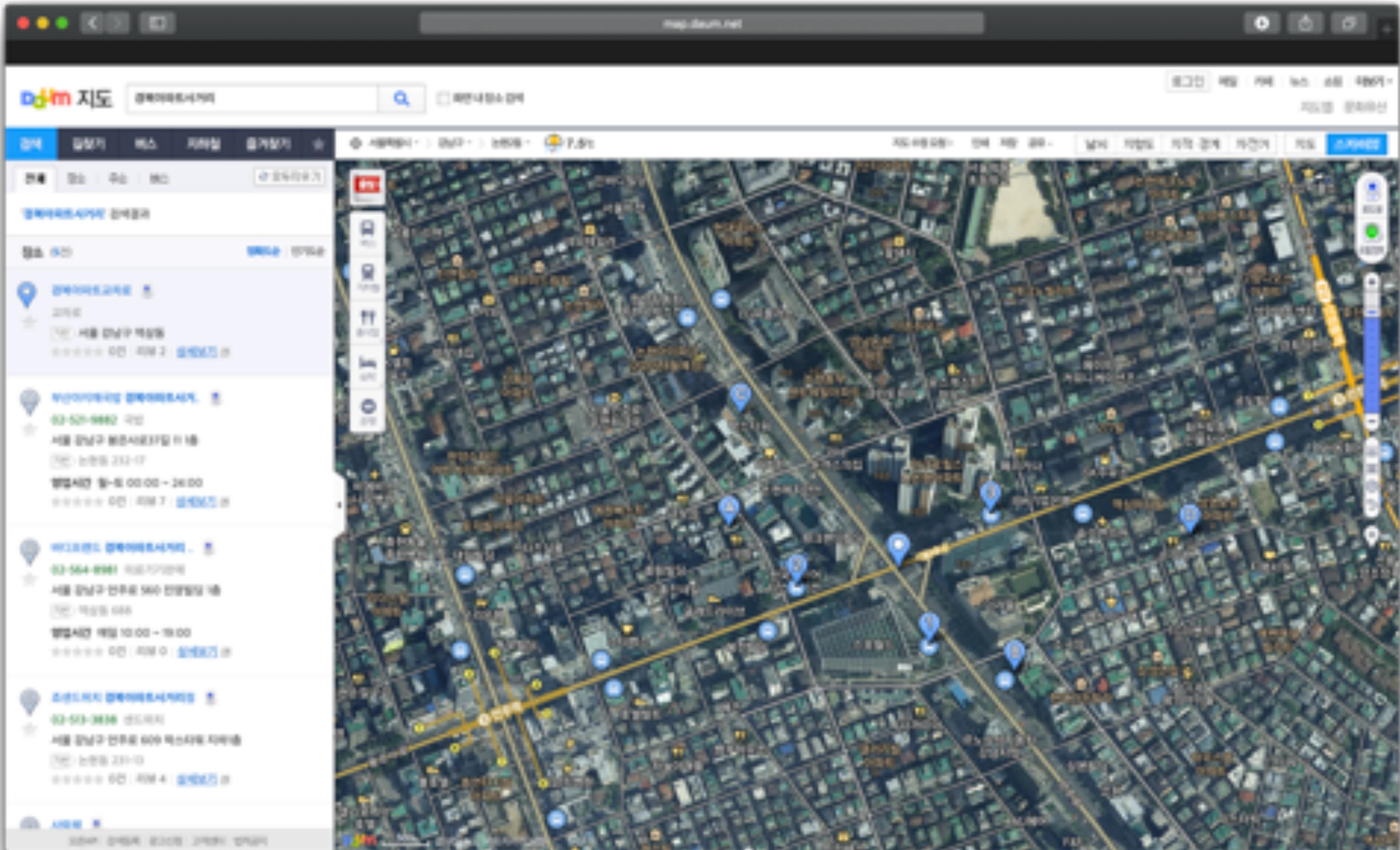
2008~2013 네오위즈, SK플래닛에서 iOS앱 개발

2014~ 다시 작은 회사에서 개발 + 경영!!ㅠㅠ













**LG U+**



**ubwcall**  
Human Communication Pioneer









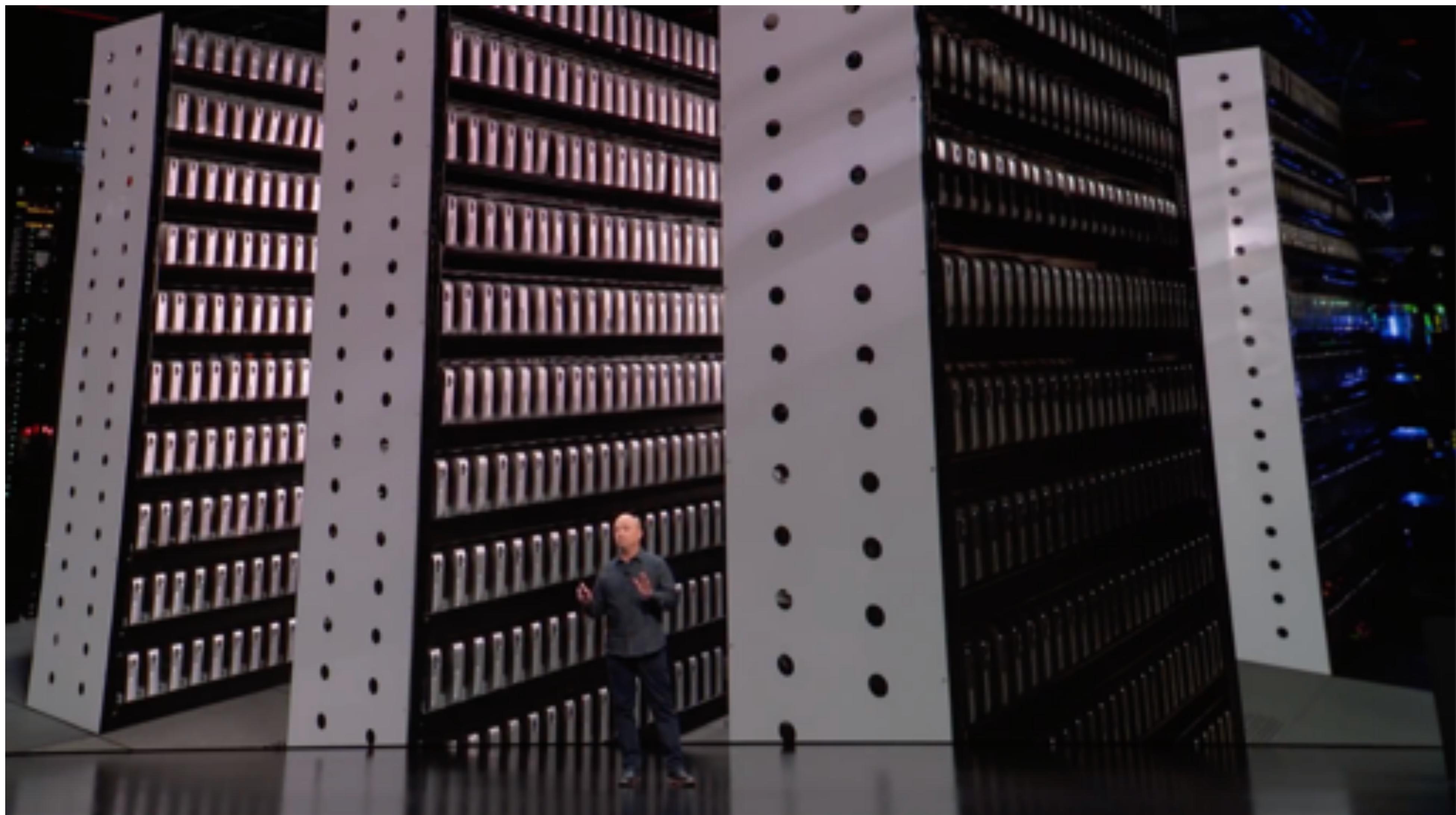


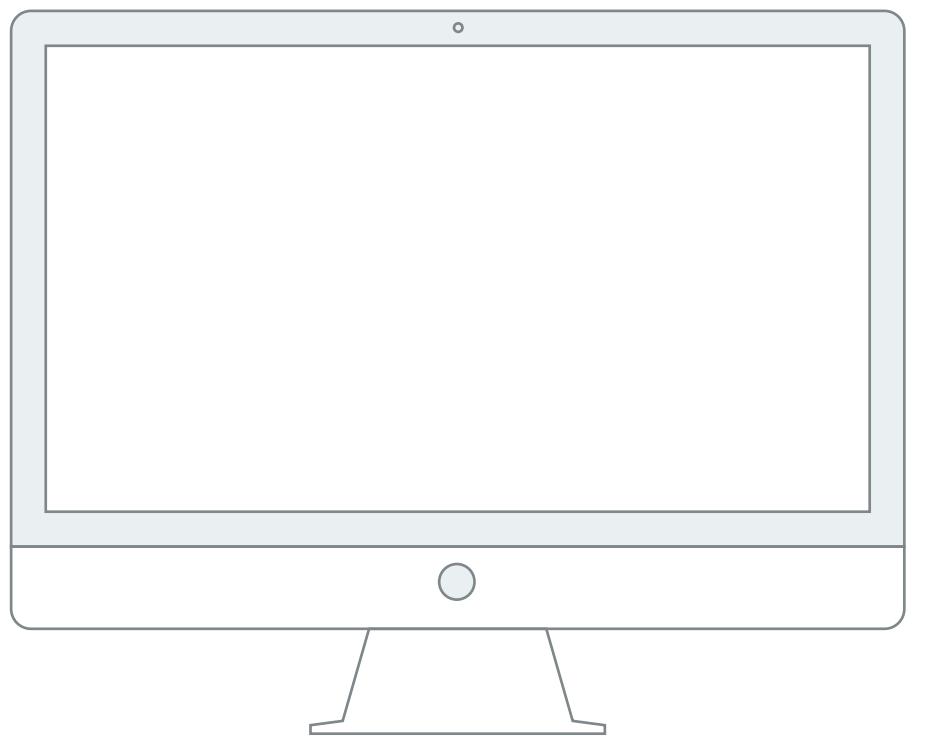
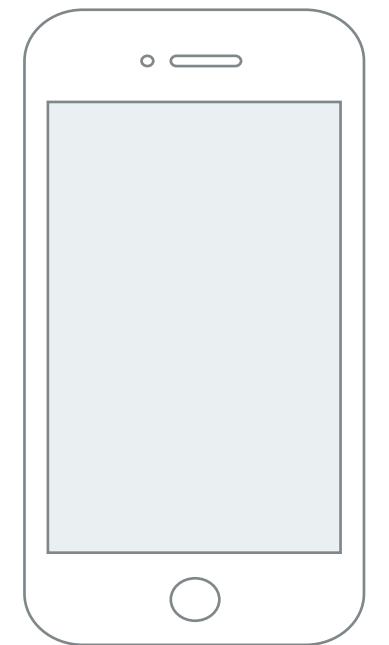




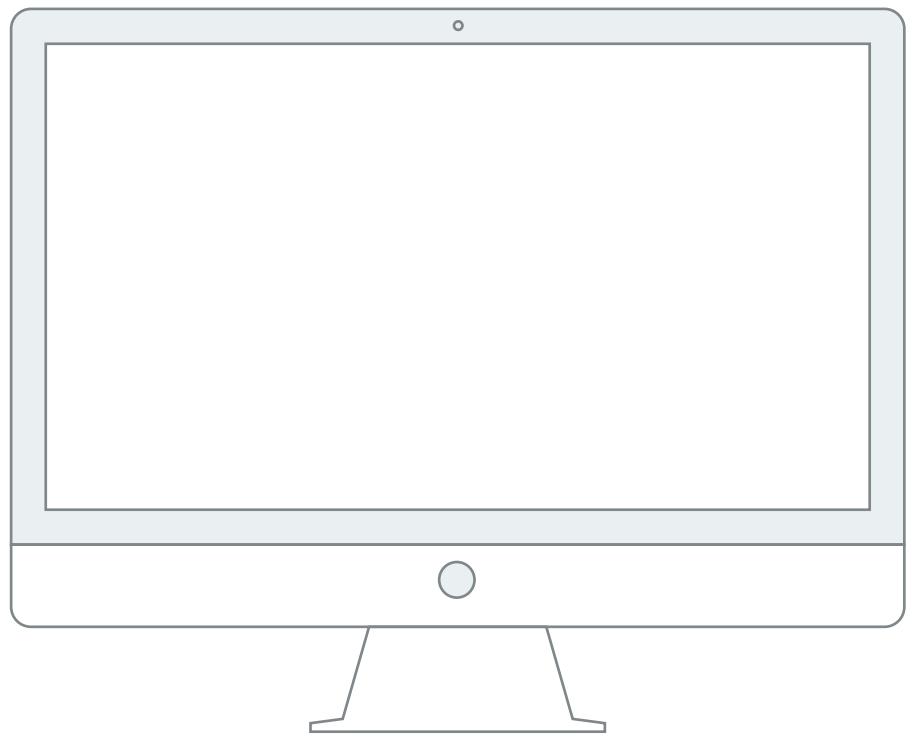
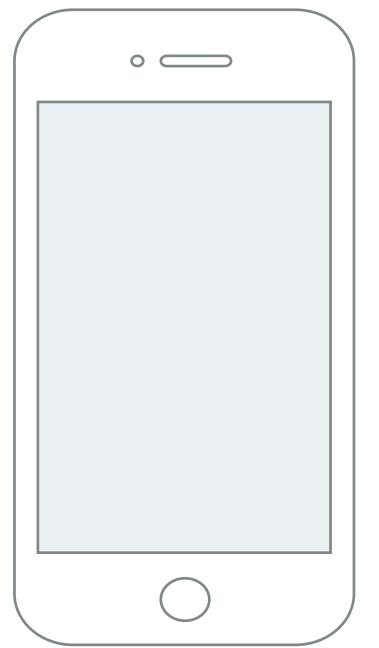




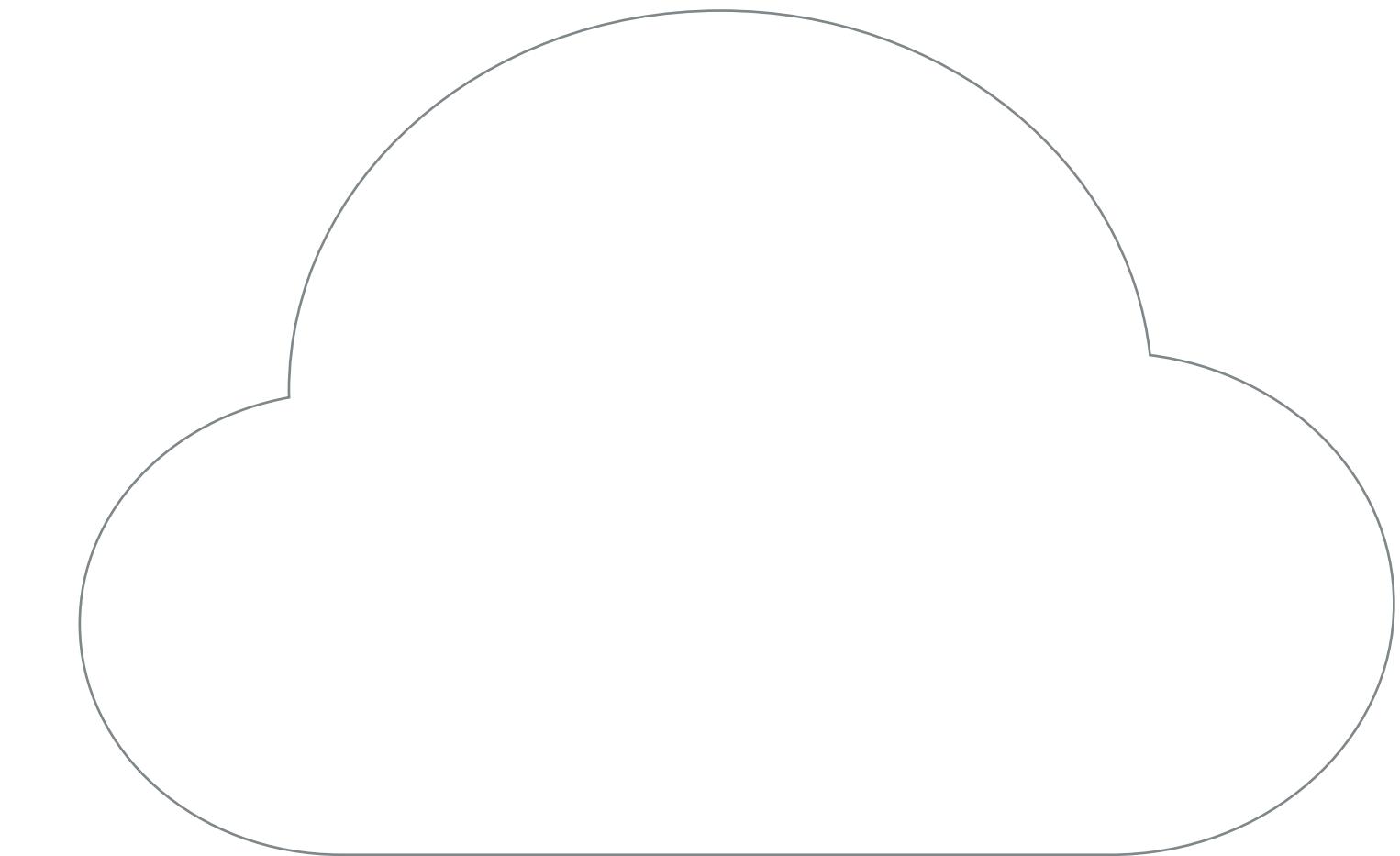




**Client**  
**Front-end**

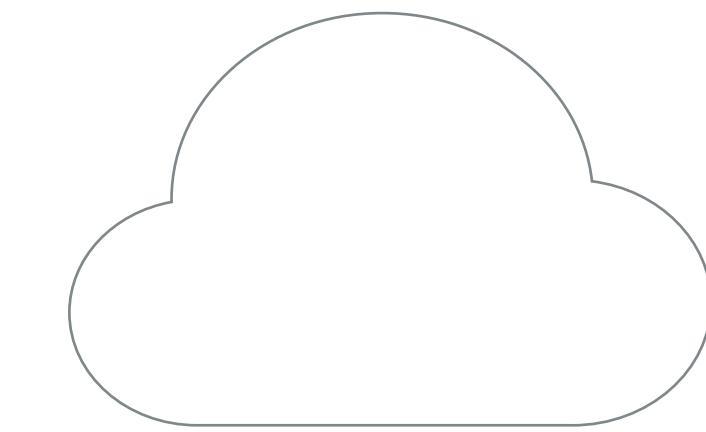
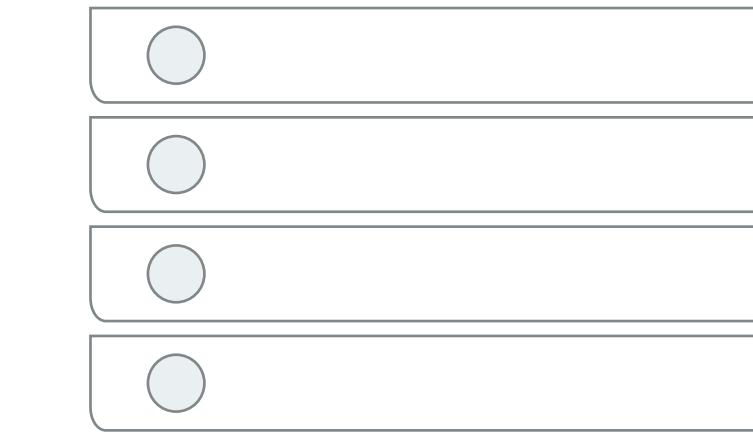
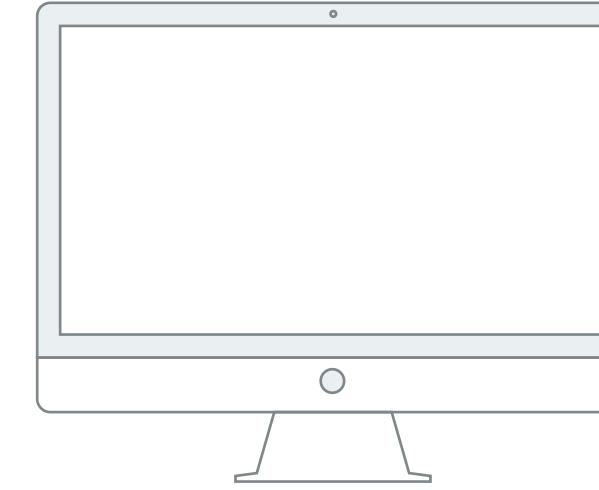
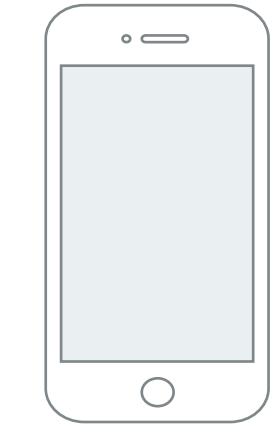


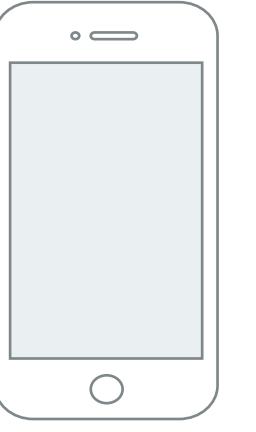
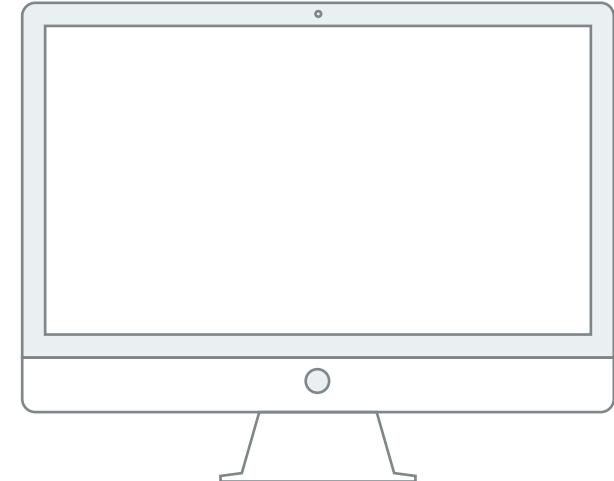
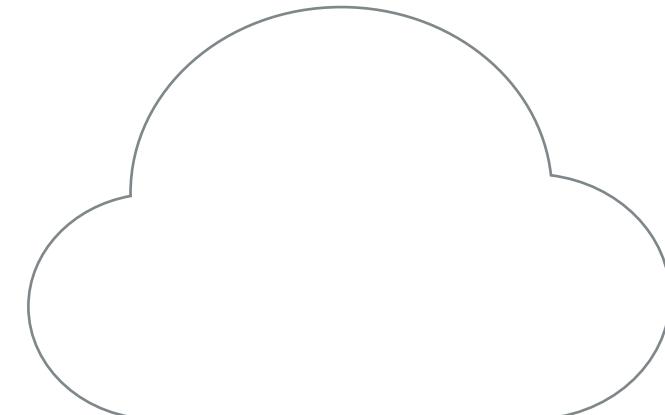
**Client**  
**Front-end**



**Server**  
**Back-end**

	<b>iPhone</b>	<b>Mac</b>	<b>On-Promise Server</b>	<b>Cloud</b>
Storage	64GB	256GB	3TB	Unlimited
CPU	A12	Intel i5	Intel Xeon	Intel AMD ARM  Customs for AI and Quantum
Role	Personal Client	Personal Client	Private Server	Server for Everyone from Start-up to Government



				
	<b>iPhone</b>	<b>Mac</b>	<b>On-Promise Server</b>	<b>Cloud</b>
OS	iOS	macOS	Linux Unix Windows Server	Linux on visual servers
Framework	Cocoa Touch	Cocoa	J2EE .NET	?
Programming Language	Swift Objective-C	Swift Objective-C C/C++	Java C# PHP	?

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Give your app intelligent autosuggest options for searches.

### Bing Entity Search

Enrich your experiences by identifying and augmenting entity information from the web.

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Search for news and get comprehensive results.

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Detect and correct spelling mistakes in your app.

### Bing Visual Search

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Intelligent, serverless bot service that scales on demand.

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Fully managed search-as-a-service.

### Bing Custom Search

An easy-to-use, ad-free, commercial-grade search tool that lets you deliver the results you want.

### Bing Image Search

Search for images and get comprehensive results.

### Bing Speech

Convert speech to text and back again to understand user intent.

### Bing Video Search

Search for videos and get comprehensive results.

### Bing Web Search

Get enhanced search details from billions of web documents.

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Distill actionable information from images.

# The Developer's Guide to Azure

How to develop on Azure from day one using common app design scenarios

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## Develop on a cloud platform designed for you

In this update of the Developer's Guide to Azure, see how the comprehensive set of Azure app platform services fits your needs. Use it to navigate the architectural approaches and most common scenarios you face when building cloud applications. [Sign up to be notified](#) of updates to the guide to ensure you make the most of the platform's constantly evolving services and features.

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[PDF](#)

# KBS스페셜 [기계의 대화법]

[Python]

```
print("Hello World")  
print("Hello World")  
print("Hello World")  
print("Hello World")  
print("Hello World")
```

[C]

```
#include <stdio.h>  
int main() {  
    printf("Hello World\n");  
    return 0;  
}
```

[JavaScript]

```
console.log("Hello World")  
console.log("Hello World")  
console.log("Hello World")  
console.log("Hello World")  
console.log("Hello World")
```

[Pascal]

```
program HelloWorld;{$output:pp}  
begin  
    writeln("Hello World")  
end.
```

[Python 3]

```
print("Hello World")
```

[Java]

```
class HelloWorld {  
    public static void main(String args) {  
        System.out.println("Hello World");  
    }  
}
```

[Perl]

```
print "Hello World\n";
```

[Arduino]

```
void setup() {  
    Serial.begin(9600);  
    Serial.println("Hello World")  
}  
void loop() {  
}
```

[Scratch]  
KBS1...

```
when green flag clicked  
say [Hello World v1] for [5 sec]  
when green flag clicked  
say [Hello World v2] for [5 sec]  
when green flag clicked  
say [Hello World v3] for [5 sec]  
when green flag clicked  
say [Hello World v4] for [5 sec]  
when green flag clicked  
say [Hello World v5] for [5 sec]
```

[PHP]

```
<?php  
echo "Hello World";  
?>
```

# Hello World!







**django**



[perfect.org](http://perfect.org)





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**ORACLE**  
DATA BASE





**ORACLE®**  
D A T A B A S E



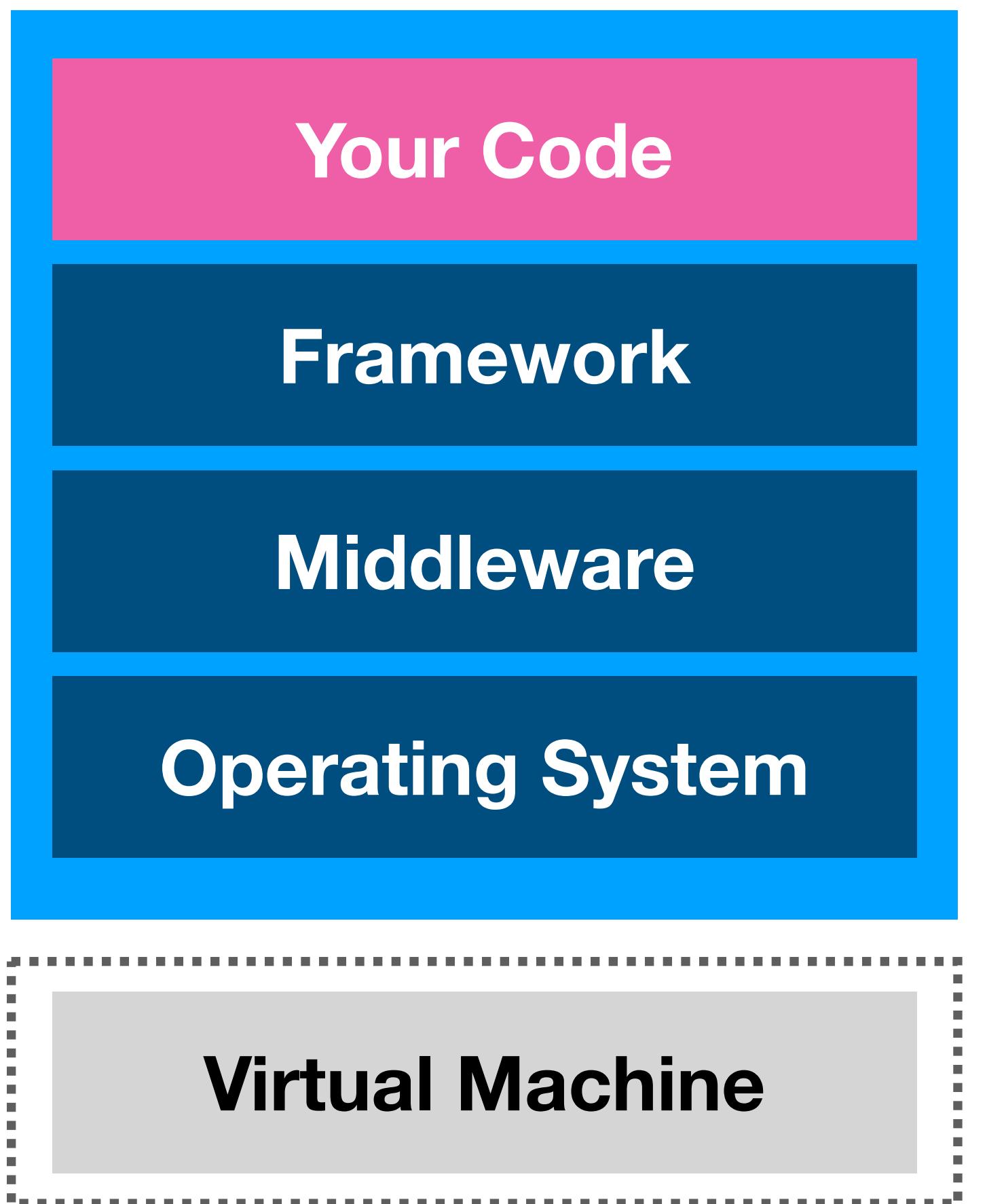






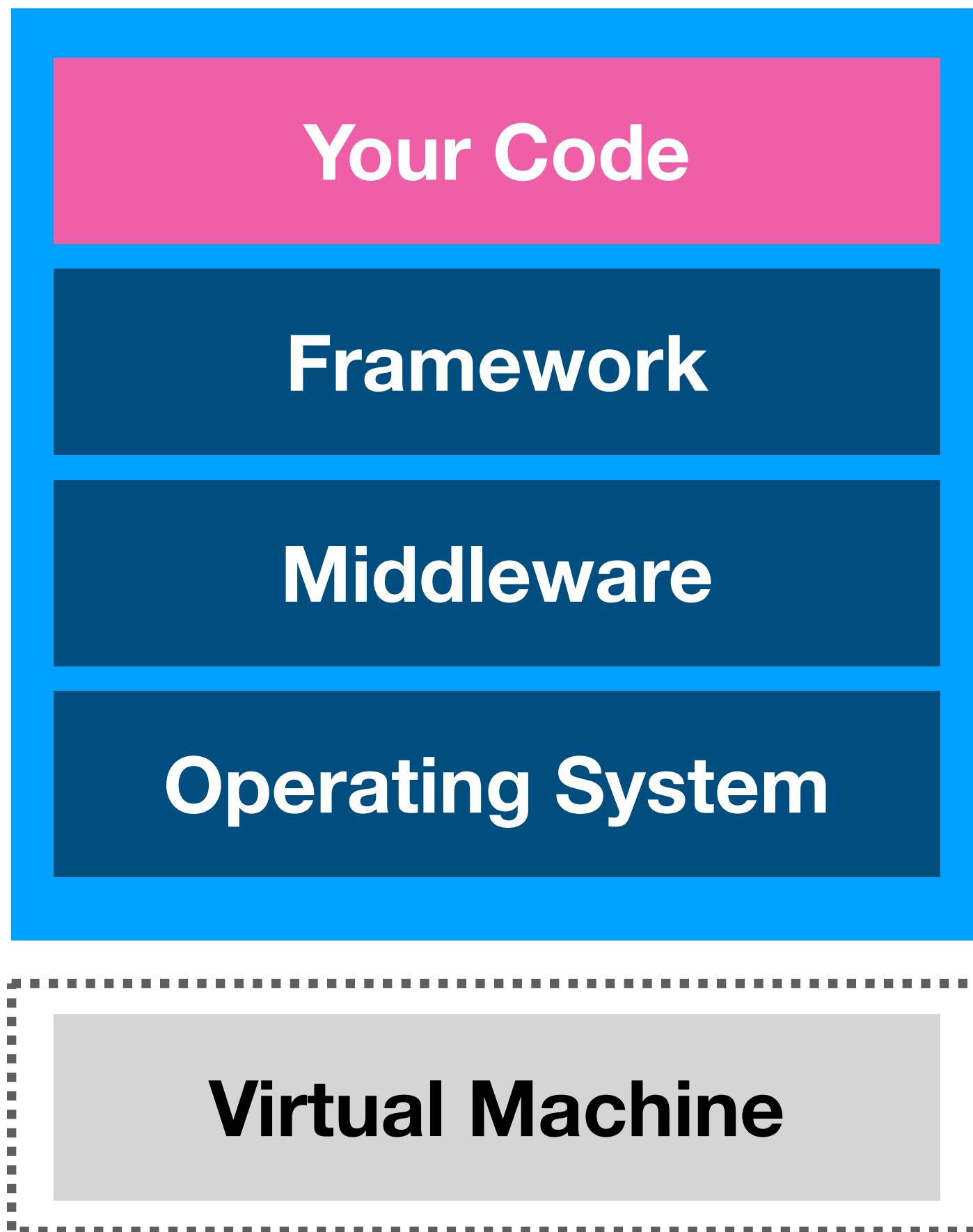
# IaaS

## Infra as-a Service



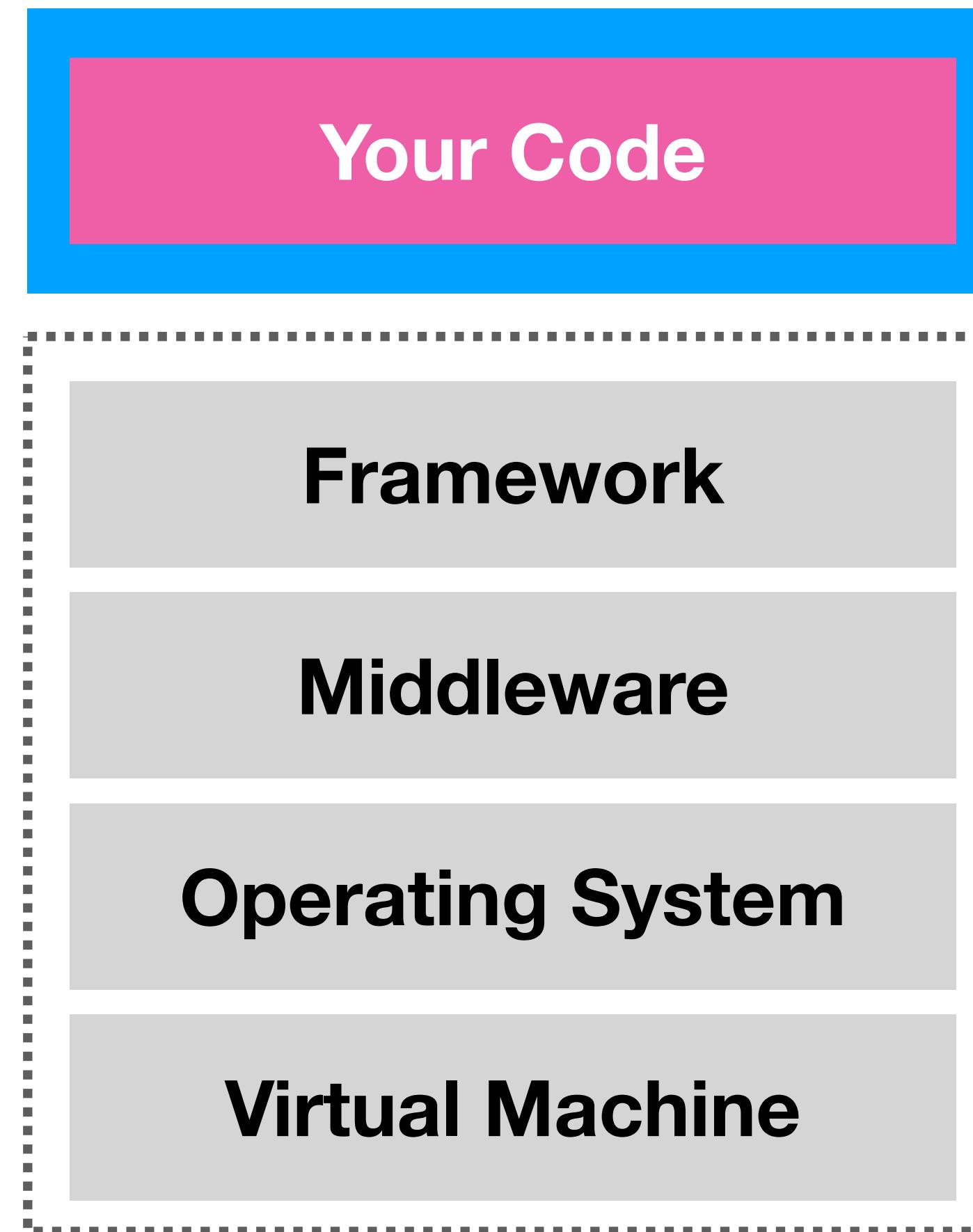
# IaaS

## Infra as-a Service



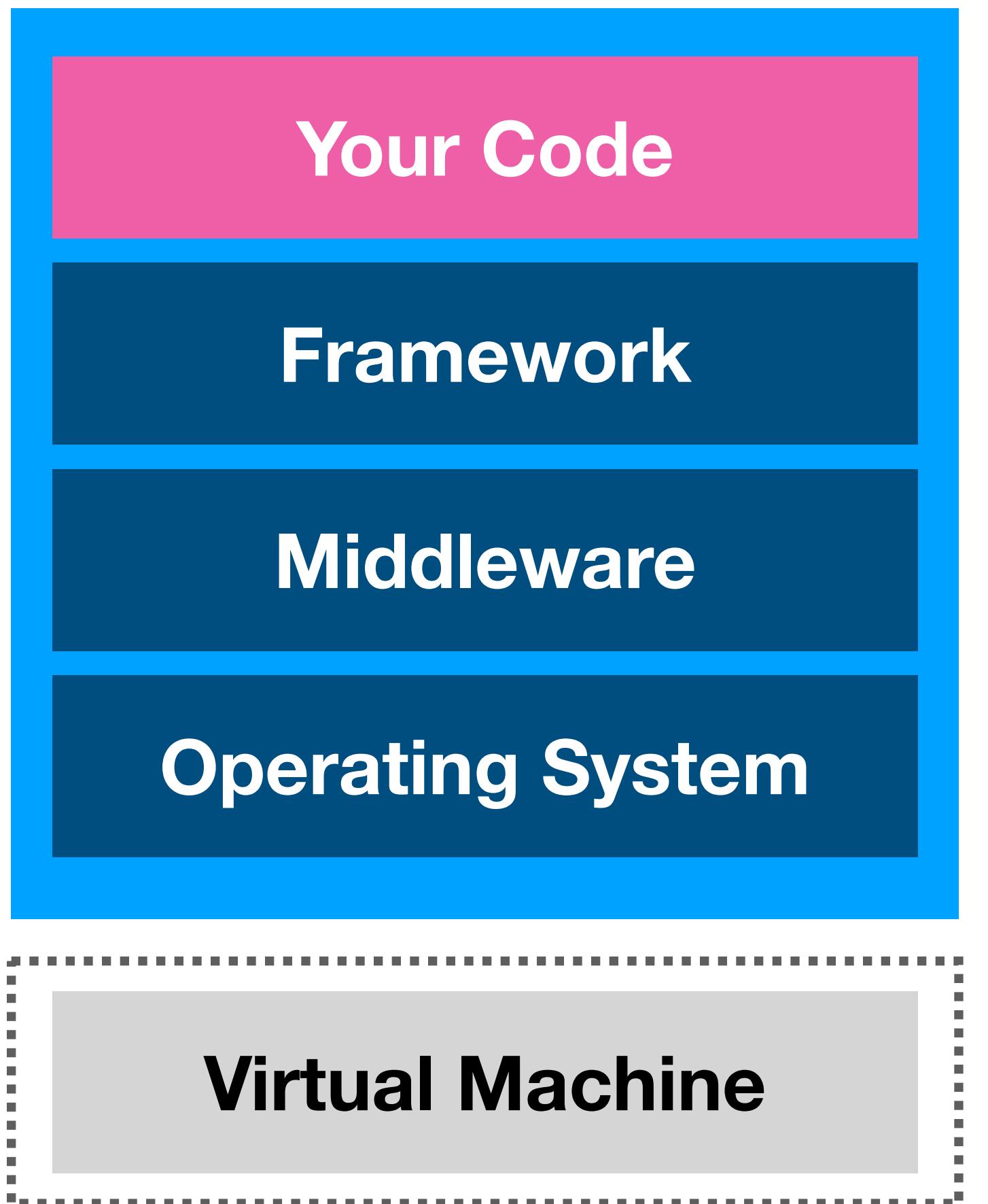
# PaaS

## Platform as-a Service



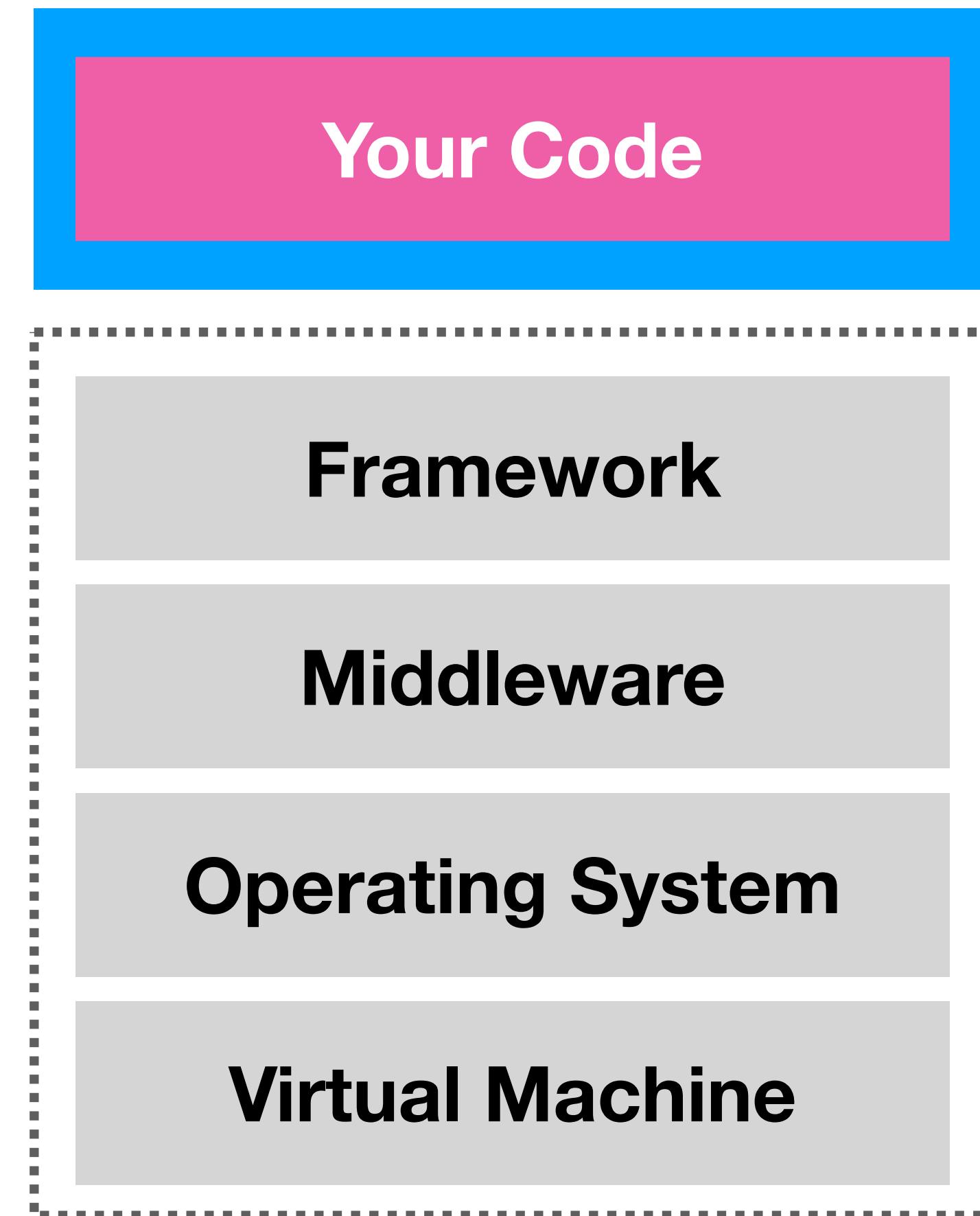
# IaaS

## Infra as-a Service



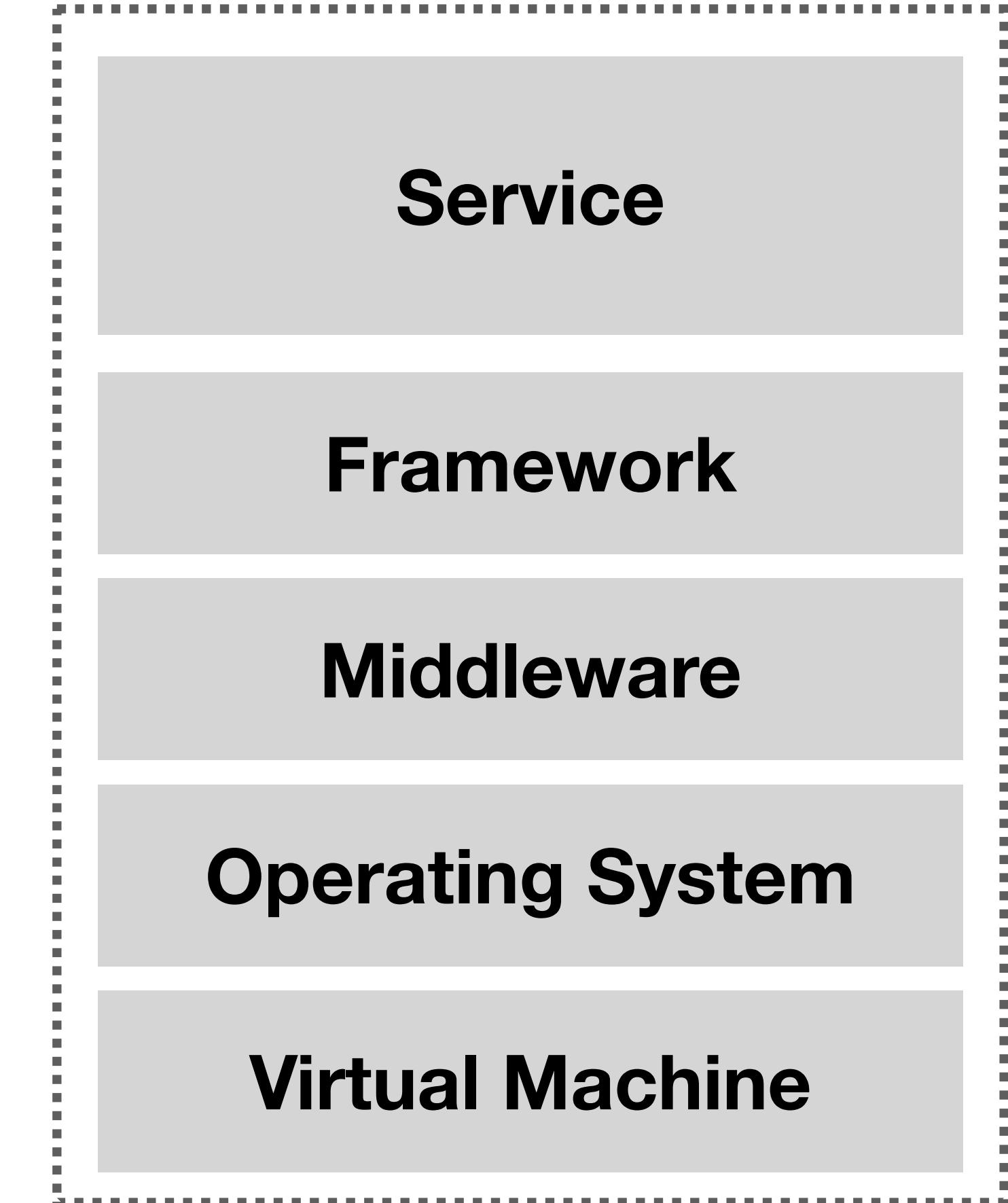
# PaaS

## Platform as-a Service



# BaaS

## Back-end as-a Service



# 보통 앱 서비스 개발 단계

기획 → 서버 개발 → 프론트엔드 개발 → 테스트

회원관리  
데이터 저장  
파일 관리  
푸시 알림  
데이터베이스 설계

# BaaS 앱 서비스 개발 단계

기획 → 프론트엔드 개발 → 테스트

# Parse

- BaaS 서비스

Parse

# Parse

- BaaS 서비스
- 2013년, 페이스북이 인수
- iOS/Android SDK 제공



# Parse

- BaaS 서비스
- 2013년, 페이스북이 인수
- iOS/Android SDK 제공
- 2016년 서비스 종료 발표 (2017년 1월 28일까지)
- 오픈소스로 공개

README.md



## Parse Server

Parse Server is an [open source version of the Parse backend](#) that can be deployed on Node.js.

Parse Server works with the Express web application framework. It can be added to any existing application or run by itself.

- [Getting Started](#)
  - [Running Parse Server](#)
    - [Locally](#)
    - [Docker](#)
    - [Saving an Object](#)
    - [Connect an SDK](#)
  - [Running elsewhere](#)
    - [Sample Application](#)
    - [Parse Server + Express](#)
  - [Logging](#)- [Documentation](#)
  - [Configuration](#)
    - [Basic Options](#)
    - [Client Key Options](#)
    - [Advanced Options](#)
    - [Logging](#)



# Parse Server made simple

Build the backend with no code, host with no infrastructure hassles and scale with no technical locks.

Sign up and build your App  
in minutes

E-mail

Password

GET STARTED!

By signing up you agree to Back4App's [Terms of Service](#) and [Privacy Policy](#).



**Firebase**

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# Google Acquires Firebase To Help Developers Build Better Real-Time Apps



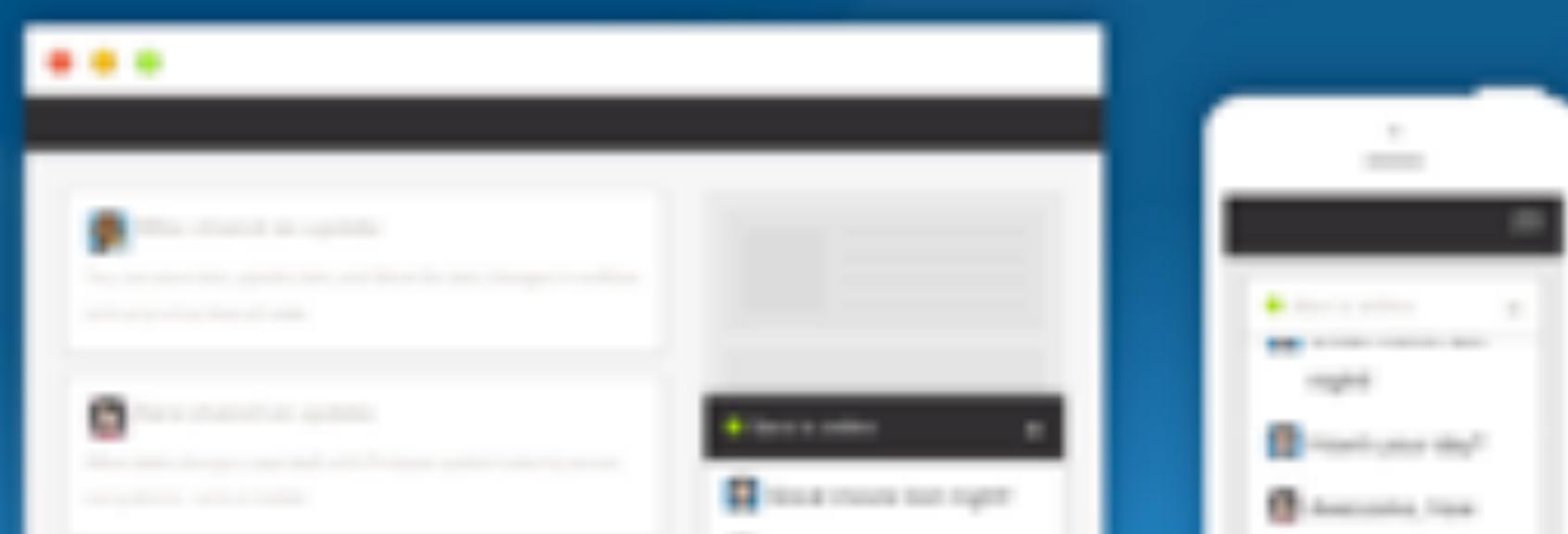
Frederic Lardinois @frederic 4 years ago

Comment

Welcome **Firebase** to Google Cloud Platform

## Build Realtime Apps

A powerful API to store and sync data in realtime.



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need that it has acquired **Firebase**, a backend service



Firebase

# **Firebase**

**Back-end as a Service  
by Google**



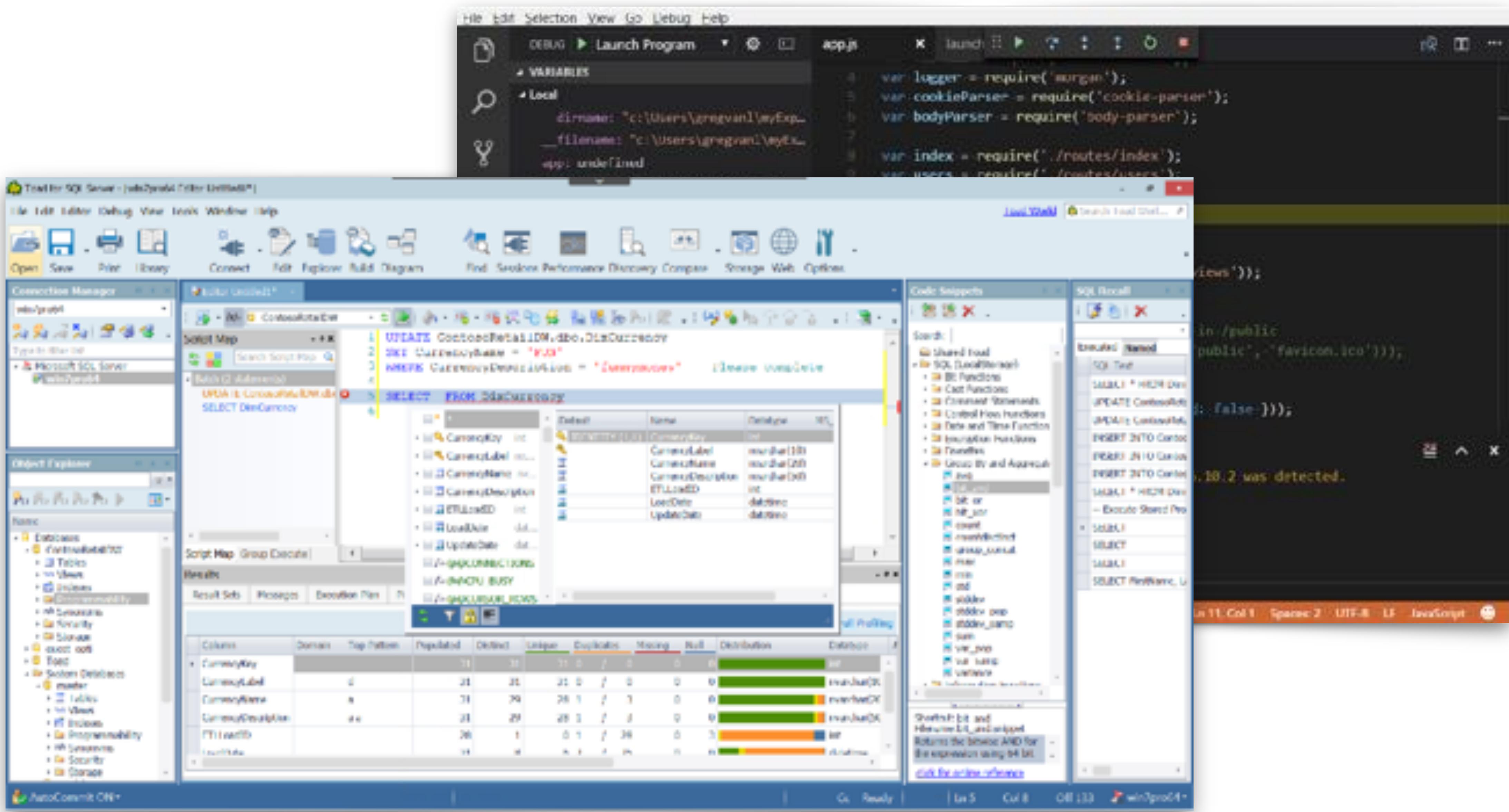
사진을 올리고  
댓글받는  
인스타그램 같은 앱

파일들을  
자유롭게 올리는  
웹 하드 같은 앱

구글, 페이스북  
이메일로  
가입받는 커뮤니티 앱

필요한 사용자들에게  
알림 보내주는 앱







## Analytics

무제한 무료 분석 솔루션

## 개발

클라우드 메시징

인증

실시간 데이터베이스

저장소

호스팅

원격 구성

Test Lab

오류 보고

## 성장

알림

앱 색인 생성

동적 링크

초대

애드워즈

## 수익 창출

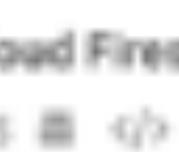
AdMob

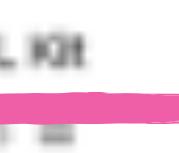
# Google Firebase





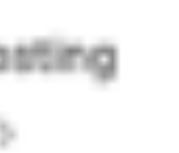
## Build your app

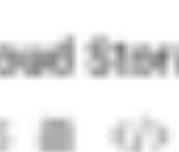
 Cloud Firestore  
iOS ■■■■■ 

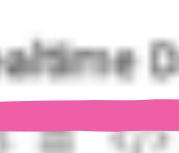
 ML Kit  
iOS ■■■■■ 

 Cloud Functions  
iOS ■■■■■ 

 Authentication  
iOS ■■■■■ 

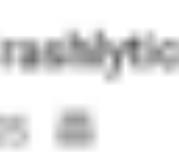
 Hosting  


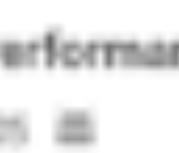
 Cloud Storage  
iOS ■■■■■ 

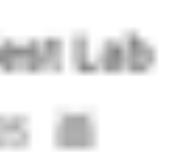
 Realtime Database  
iOS ■■■■■ 



## Improve app quality

 Crashlytics  
iOS ■■■■■ 

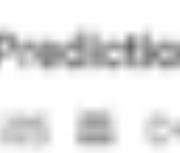
 Performance Monitoring  
iOS ■■■■■ 

 Test Lab  
iOS ■■■■■ 

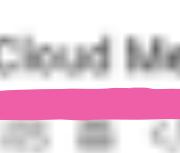


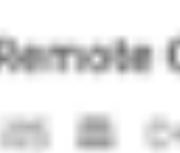
## Grow your business

 Analytics  
iOS ■■■■■ 

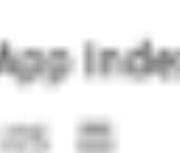
 Predictions  
iOS ■■■■■ 

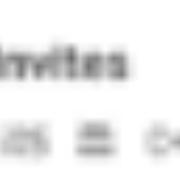
 Firebase A/B Testing  
iOS ■■■■■ 

 Cloud Messaging  
iOS ■■■■■ 

 Remote Config  
iOS ■■■■■ 

 Dynamic Links  
iOS ■■■■■ 

 App Indexing  
iOS ■■■■■ 

 Invites  
iOS ■■■■■ 

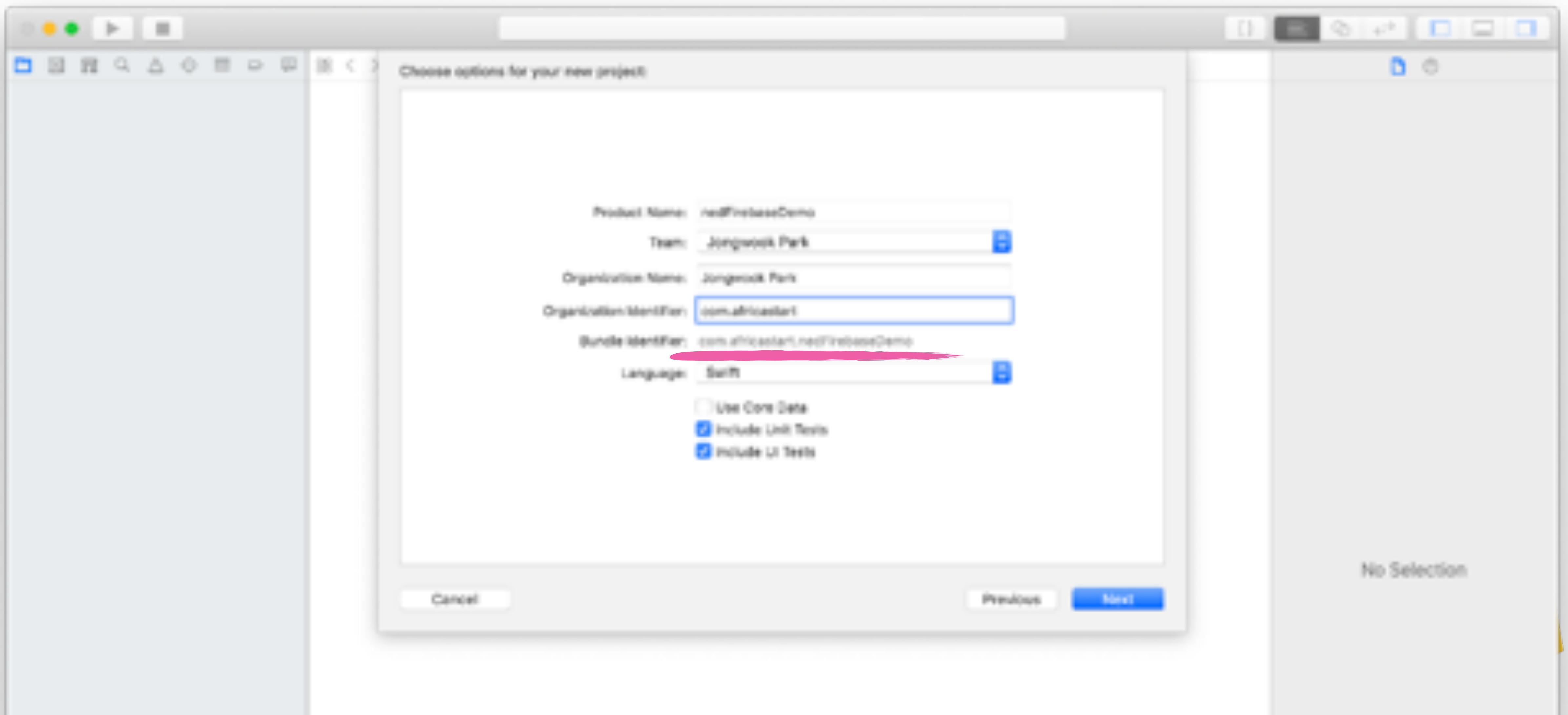


# **Demo**

**First app using Firebase**



# 1. Xcode 프로젝트 생성



**1. Xcode 프로젝트 생성**

**2. Firebase 웹사이트에서 프로젝트 추가**



## Firebase에 오신 것을 환영합니다.

Google 도구는 뛰어난 앱을 개발하고, 사용자와 소통하고, 모바일 광고를 통해 더 많은 수입을 올리는 데 도움이 됩니다.

[+ 프로젝트 만들기](#) [문서](#) [설정](#)

최근 프로젝트



프로젝트 추가



**BoostCampinterview**  
boostcampinterview

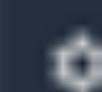
**OSXDEvent**  
osxevent

**BootcampList**  
bootcamplist-65f2e

205



## Project Overview



문서로 이동



개발

Authentication

Database

Storage

Hosting

Functions

ML Kit

품질

Crashlytics

Performance

Test Lab

매출리포트

Dashboard

Events

Conversions

Audiences

Funnels

User Retention

## Firebase Demo Project

[프로젝트 관리](#)

업데이트

Flood-It! Android

iOS Flood-It! iOS

지난 30분 동안의 사용자

39

## Analytics

일일 활성 사용자 수

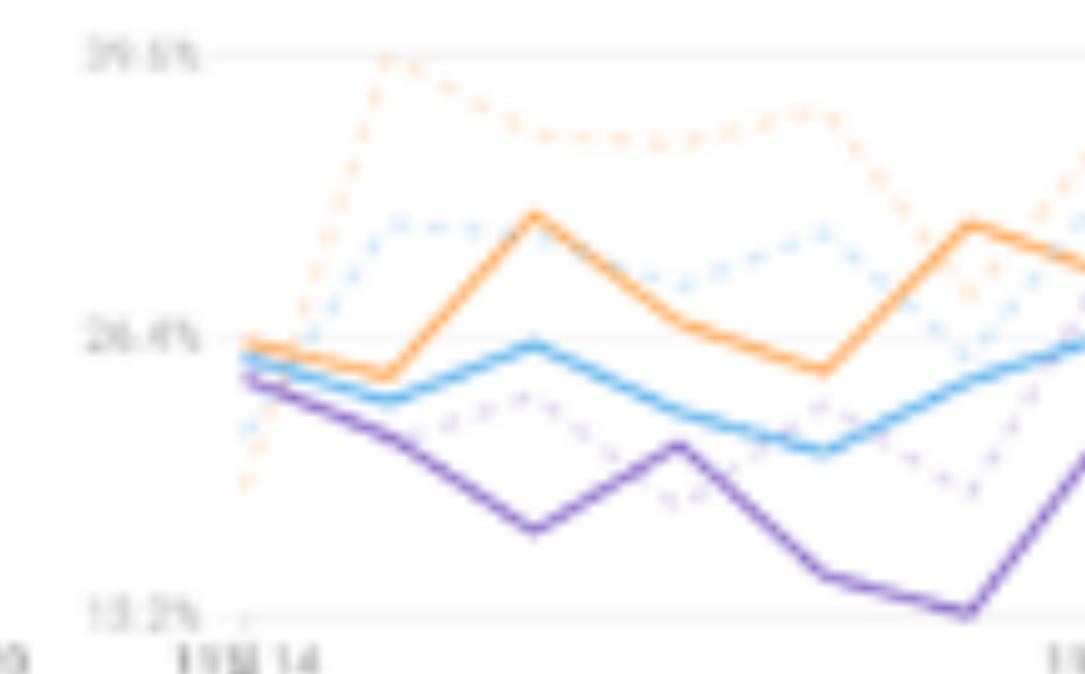
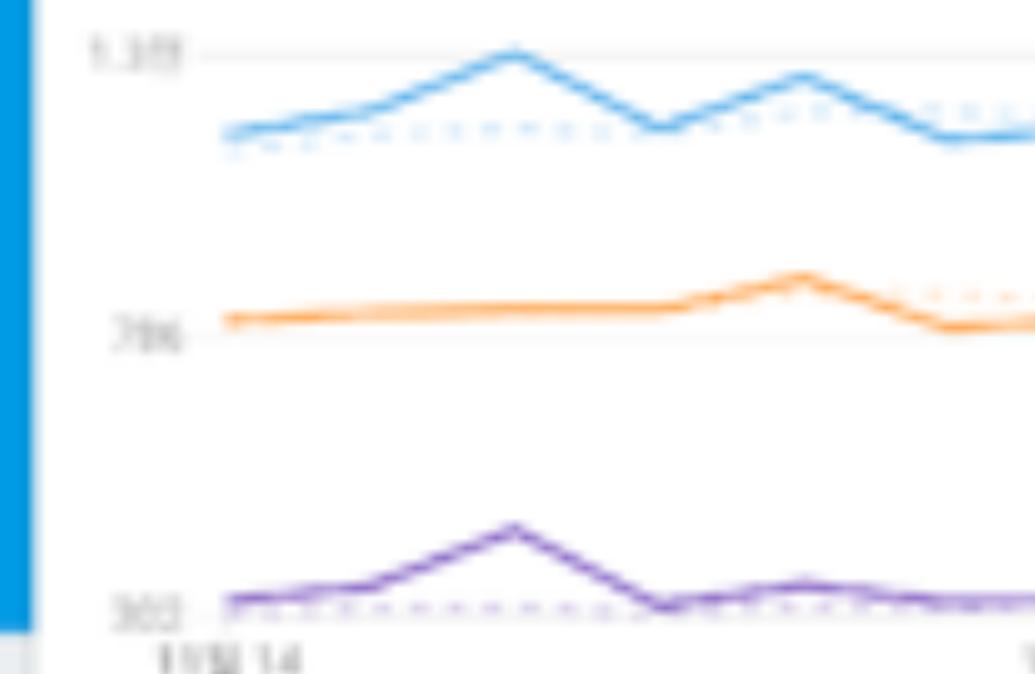
1.1천

-0.3%

1일차 유지

26.4%

-21.7%



수익

\$109.97

+6.2%



Flood-It! Android

DAU 326

1일차 유지 22.2%

수익 \$4.57

Flood-It! iOS

DAU 811

1일차 유지 29.5%

수익 \$11.47

## 품질

## Firebase에 오신 것을 환영합니다.

Google 도구는 뛰어난 앱을 개발하고, 사용자와 소통하고, 모바일 광고를 통해 더 많은 수입을 올리는 데 도움이 됩니다.

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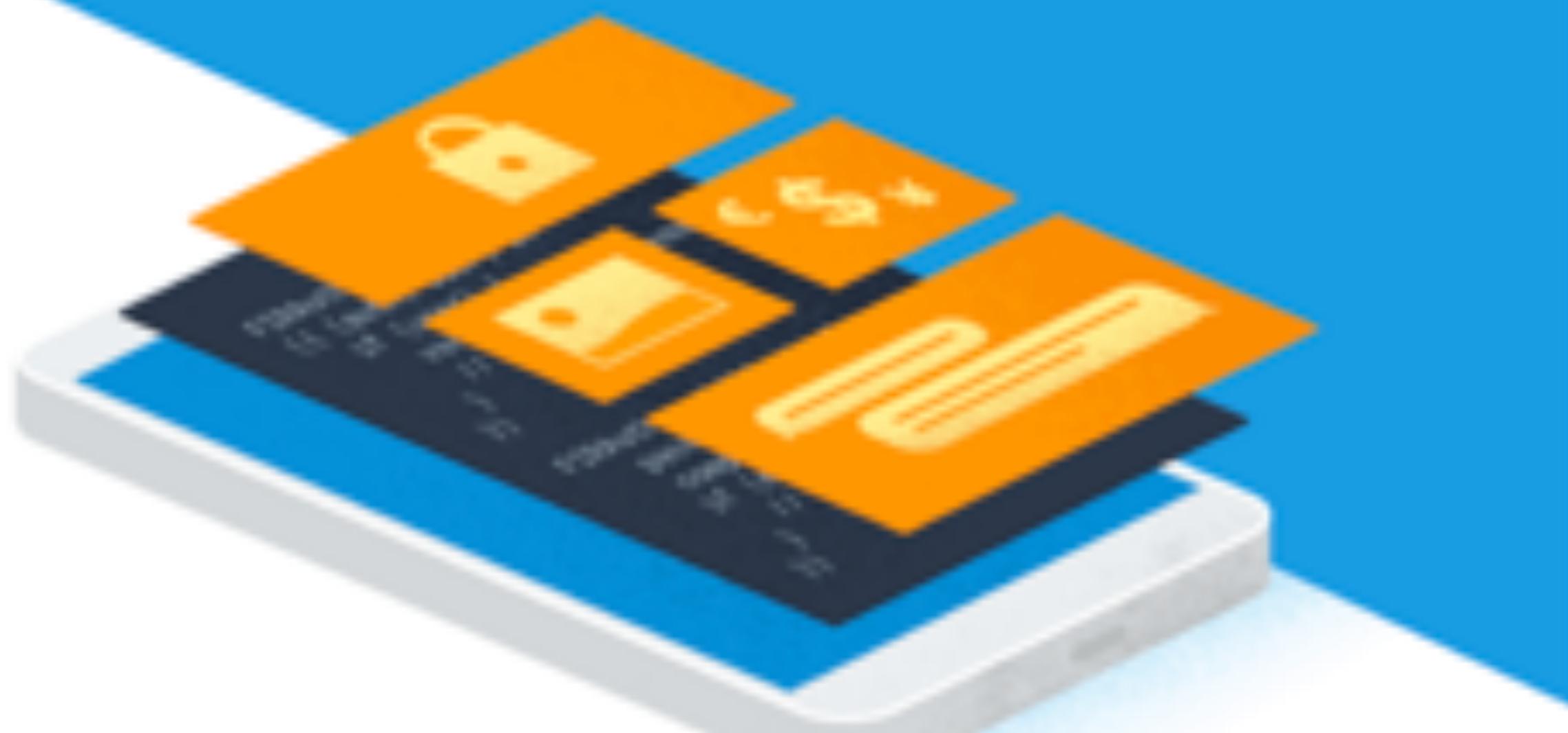
최근 프로젝트

+  
프로젝트 추가  
  
  
  
 대모 프로젝트 살펴보기

**OSXDEvent**  
osxevent

**BootcampList**  
bootcamplist-65f2e  
205

**BoostCampinterview**  
boostcampinterview



프로젝트 보기

모든

## 프로젝트 추가

X

프로젝트 이름

NedFirebaseDemo

+ iOS + ⌂

도움말: 프로젝트는 아래 설정을  
이 아래 단계를 완료합니다. ⓘ

최근 프로젝트

프로젝트 ID ⓘ

nedfirebasedemo ↗



프로젝트 추가

새로운 프로젝트 설  
정

BoostCampInterview

boostcampinterview

05

국내(프로젝트 위치) ⓘ

대한민국

Cloud Firestore 위치 ⓘ

us-central

Firebase는 Google 애널리틱스 데이터 공유에 기본 설정을 사용합니다.

- ✓ Google 계정과 서비스의 개인을 위해 Google 애널리틱스 데이터를 Google이 공유합니다.
- ✓ 기술 지원을 받기 위해 Google 애널리틱스 데이터를 Google이 공유합니다.
- ✓ 향후 데이터를 사용하기 위해 Google 애널리틱스 데이터를 Google이 공유합니다.
- ✓ Google 애널리틱스 데이터를 Google 계정 전송기와 공유합니다.

Google Cloud Storage에 등록합니다. Google 계정과 서비스의 개인을 위해 Google 애널리틱스 데이터를 공유하는 경우에 이 때문에 등록해야 합니다. [\[보기\]](#)

취소

프로젝트 만들기

- 1. Xcode 프로젝트 생성**
- 2. Firebase 웹사이트에서 프로젝트 추가**
- 3. Firebase 가이드대로 Xcode 프로젝트에 적용**



https://console.firebaseio.google.com/project/medifirebasedemo/overview

문서로 이동

## × iOS 앱에 Firebase 추가

1 앱 등록

iOS 앱 ID ⓘ  
com.africastart.firebaseiodemo

앱 네임(선택사항) ⓘ  
Freemium iOS App

App Store ID(선택사항) ⓘ  
123456789

등록하기

2 구성 파일 다운로드

3 Firebase SDK 추가

4 초기화 코드 추가

5 앱을 실행하여 설치 확인

## X iOS 앱에 Firebase 추가

### 설정

iOS 앱 ID: com.africasstart.firebaseiodemo

### 구성 파일 다운로드

Xcode에 대한 27-02(99개 항목) | More...

GoogleService-Info.plist 다운로드

받은 다운로드한 GoogleService-Info.plist 파일을 Xcode 프로젝트의 뿐만 아니라 전자에 추가하세요.



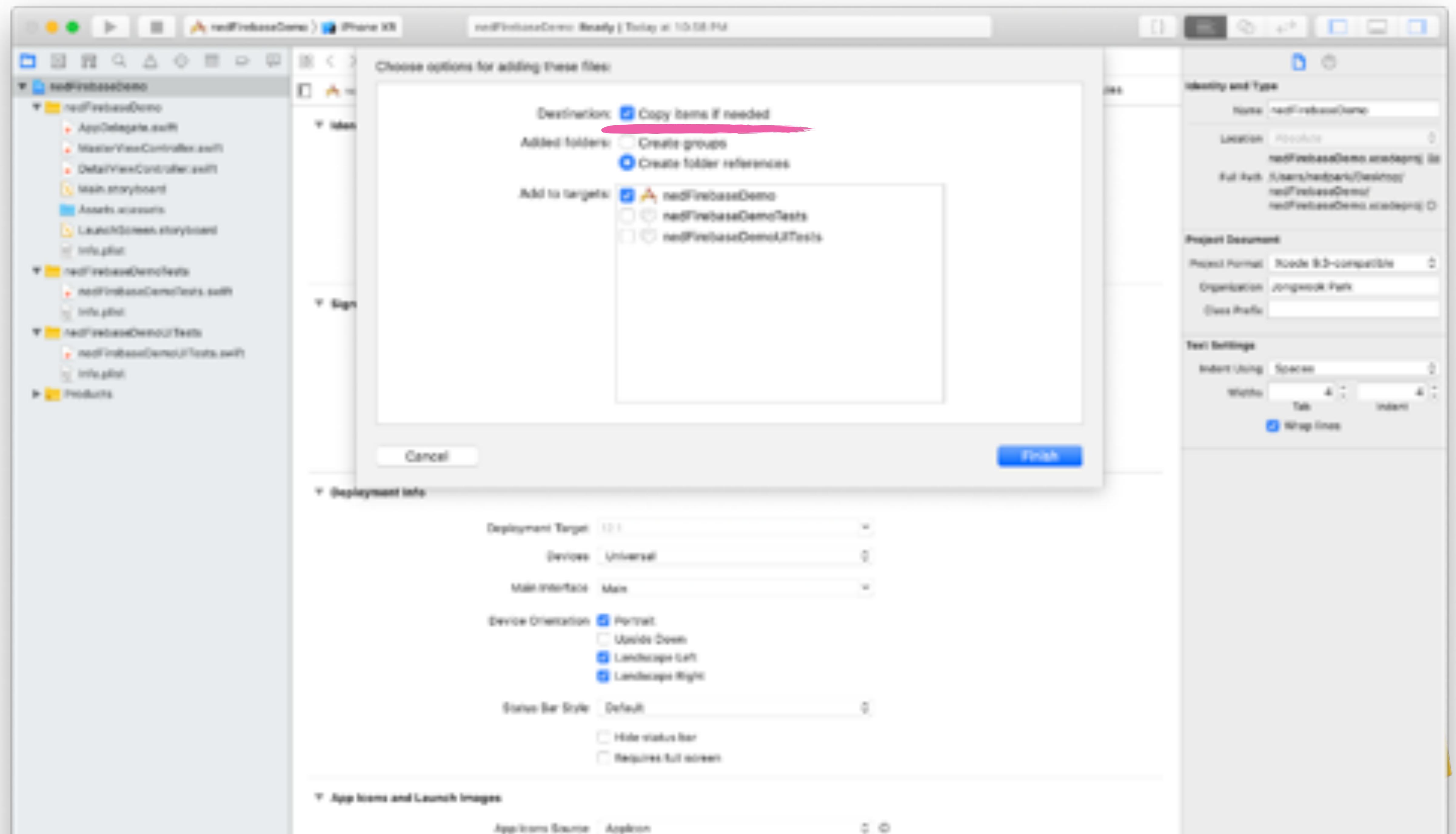
미천

다음

### Firebase SDK 추가

### 초기화 코드 추가





redFinbaseDemo (iPhone X) redFinbaseDemo - Recently | Today at 10:58 PM

redFinbaseDemo

General Capabilities Resource Tags Info Build Settings Build Phases Build Rules

**Identity**

Display Name: redFinbaseDemo  
Bundle Identifier: com.uicoder.redFinbaseDemo  
Version: 1.0  
Build: 1

**Signing**

Automatically manage signing (Selects team and updates profiles, app IDs, and certificates.)  
Team: Zongrock Park  
Provisioning Profile: Xcode Managed Profile (None)  
Signing Certificate: iPhone Developer: Zongrock Park (XXXXXXXXXX)

**Deployment Info**

Deployment Target: 12.1  
Devices: Universal  
Main Interface: Main  
Device Orientation:  Portrait  
 Landscape Down  
 Landscape Left  
 Landscape Right  
Status Bar Style: Default  
 Hide Status Bar  
 Requires Full Screen

**App Icons and Launch Images**

AppIcon Source AppIcon

Identity and Type  
Name: redFinbaseDemo  
Location: /Users/  
redFinbaseDemo.xcodeproj/  
Build Artifacts: /Users/  
redFinbaseDemo/  
redFinbaseDemo.xcodeproj/  
Project Document  
Project Format: Xcode 8.3-compatible  
Organization: Zongrock Park  
Issue Tracker:  
Test Settings  
Insert Using: Source  
Width: 4  
Height: 4  
Tab: Insert  
Wrap Lines

## X iOS 앱에 Firebase 추가



앱 등록

iOS 앱 ID: com.africahart.firebaseiodemo



구성 파일 다운로드



Firebase SDK 추가

CocoaPods [선택] | [다운로드](#) [Unity SDK](#)

Google 서비스는 [CocoaPods](#) 를 사용하여 품속 항목을 설치하고 관리합니다. 티머널 창을 열어 업적  
Xcode 프로젝트가 있는 위치로 이동하세요.

Podfile이 없는 경우 다음 명령어로 새로 만드세요.

\$ pod init



Podfile을 참고 다음 코드를 추가하세요.

pod 'Firebase/Core'



기본적으로 Firebase 프로젝트입니다.

\$ pod install



업에 사용할 .xcworkspace 파일이 생성됩니다. 이후 애플리케이션의 모든 개발 작업에 이 파일을 사용하세요.

미완

다음

추가의 코드 추가



# SEARCH\*



\* Type here to search by name, author and summary.

## WHAT IS COCOAPODS

CocoaPods is a dependency manager for Swift and Objective-C Cocoa projects. It has over 54 thousand libraries and is used in over 3 million apps. CocoaPods can help you scale your projects elegantly.

## INSTALL

## GET STARTED

## CREATE A POD

CocoaPods is built with Ruby and is installable with the default Ruby available on OS X. We recommend you use the default ruby.

Using the default Ruby install can require you to use `sudo` when installing gems. Further installation instructions are in [the guides](#).

```
# Xcode 8 + 9  
$ sudo gem install cocoapods
```

We also have a [Mac app](#) for CocoaPods. It only gets major releases ATM though.

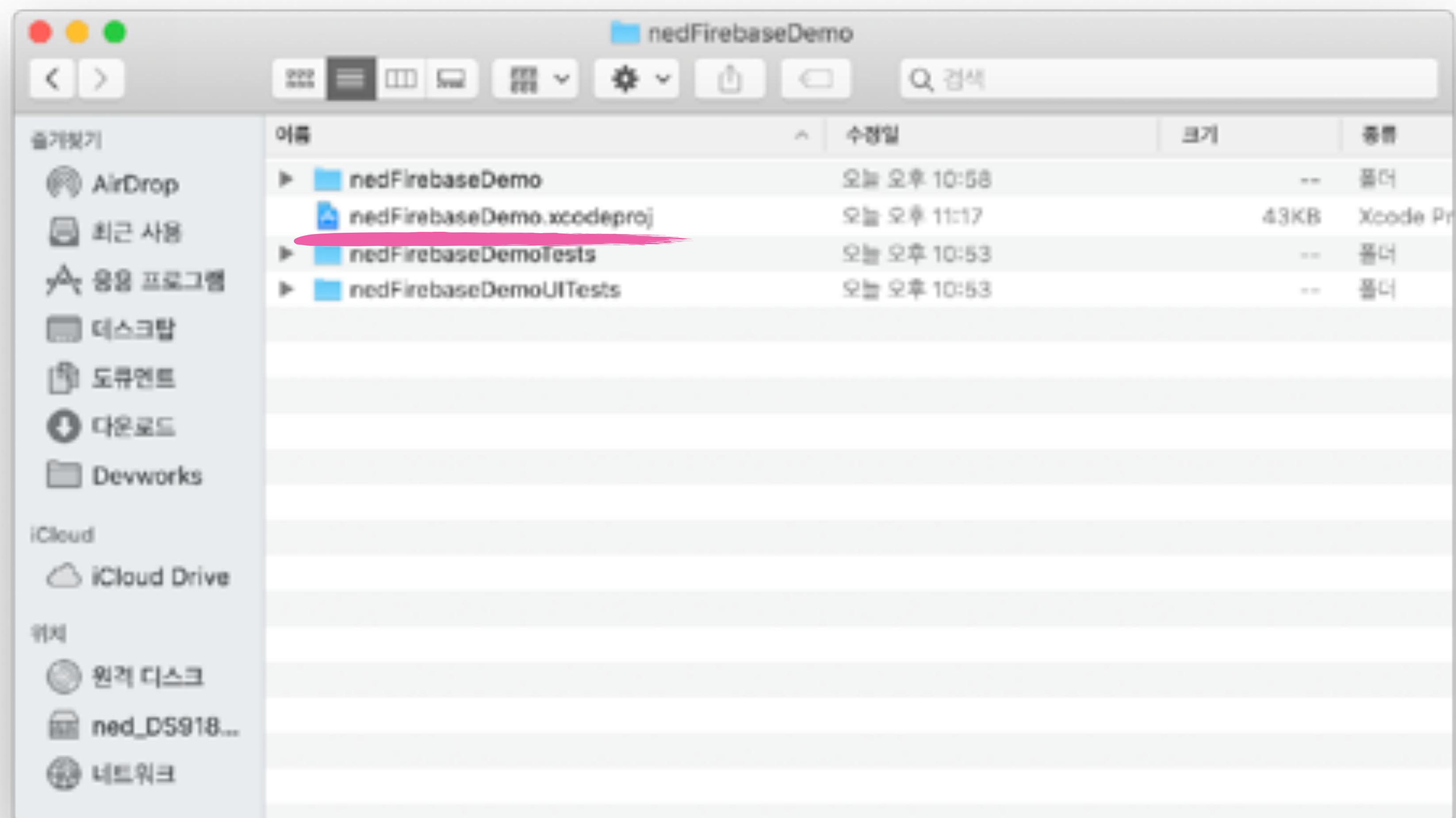


```
nedpark@ned-iMac:~$ sudo gem install cocoapods
```



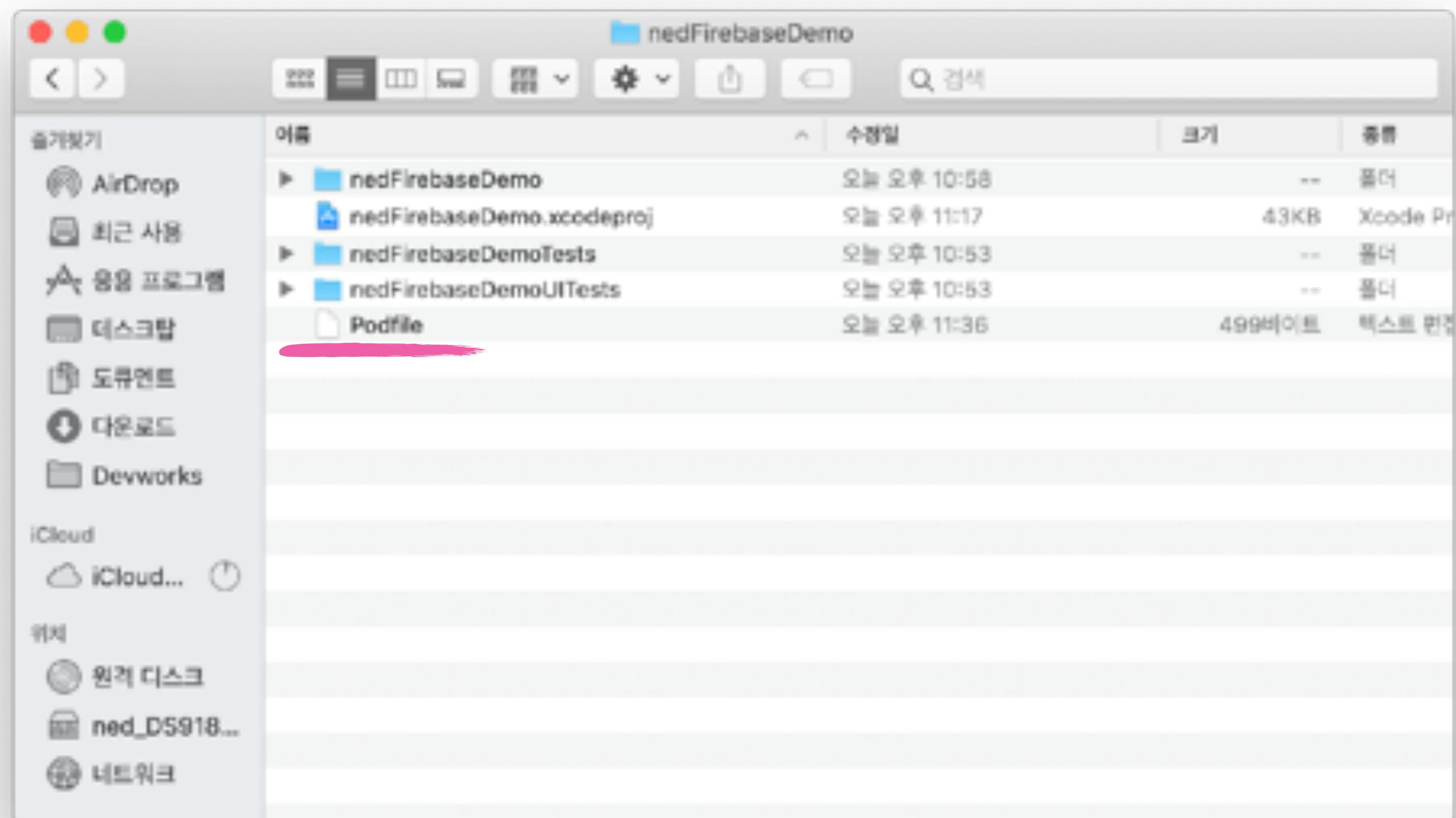
```
nedpark — bash — 80x24
Parsing documentation for colored2-3.1.2
Installing ri documentation for colored2-3.1.2
Parsing documentation for nanaimo-0.2.6
Installing ri documentation for nanaimo-0.2.6
Parsing documentation for xcodeproj-1.7.0
Installing ri documentation for xcodeproj-1.7.0
Parsing documentation for escape-0.0.4
Installing ri documentation for escape-0.0.4
Parsing documentation for fourflusher-2.0.1
Installing ri documentation for fourflusher-2.0.1
Parsing documentation for gh_inspector-1.1.3
Installing ri documentation for gh_inspector-1.1.3
Parsing documentation for ruby-macho-1.3.1
Installing ri documentation for ruby-macho-1.3.1
Parsing documentation for cocoapods-1.5.3
Installing ri documentation for cocoapods-1.5.3
Done installing documentation for concurrent-ruby, i18n, thread_safe, tzinfo, activesupport, nap, fuzzy_match, cocoapods-core, claide, cocoapods-deintegrate, cocoapods-downloader, cocoapods-plugins, cocoapods-search, cocoapods-stats, netrc, cocoapods-trunk, cocoapods-try, molinillo, atomos, CFPPropertyList, colored2, nanaimo, xcodeproj, escape, fourflusher, gh_inspector, ruby-macho, cocoapods after
21 seconds
28 gems installed
nedpark@ned-iMac:~$
```





```
nedFirebaseDemo — bash — 80x24
Installing ri documentation for colored2-3.1.2
Parsing documentation for nanaimo-0.2.6
Installing ri documentation for nanaimo-0.2.6
Parsing documentation for xcodeproj-1.7.0
Installing ri documentation for xcodeproj-1.7.0
Parsing documentation for escape-0.0.4
Installing ri documentation for escape-0.0.4
Parsing documentation for fourflusher-2.0.1
Installing ri documentation for fourflusher-2.0.1
Parsing documentation for gh_inspector-1.1.3
Installing ri documentation for gh_inspector-1.1.3
Parsing documentation for ruby-macho-1.3.1
Installing ri documentation for ruby-macho-1.3.1
Parsing documentation for cocoapods-1.5.3
Installing ri documentation for cocoapods-1.5.3
Done installing documentation for concurrent-ruby, i18n, thread_safe, tzinfo, activesupport, nap, fuzzy_match, cocoapods-core, claide, cocoapods-deintegrate, cocoapods-downloader, cocoapods-plugins, cocoapods-search, cocoapods-stats, netrc, cocoapods-trunk, cocoapods-try, molinillo, atomos, CPropertyList, colored2, nanaimo, xcodeproj, escape, fourflusher, gh_inspector, ruby-macho, cocoapods after
21 seconds
28 gems installed
nedpark@ned-iMac:~$ cd Desktop/nedFirebaseDemo/
nedpark@ned-iMac:~/Desktop/nedFirebaseDemo$ pod init
```





```
nedFirebaseDemo — vi Podfile — 80x24
# Uncomment the next line to define a global platform for your project
# platform :ios, '9.0'
platform :ios, '12.0'

target 'nedFirebaseDemo' do
    # Comment the next line if you're not using Swift and don't want to use dynamic frameworks
    use_frameworks!

    # Pods for nedFirebaseDemo
    pod 'Firebase/Core'

    target 'nedFirebaseDemoTests' do
        inherit! :search_paths
        # Pods for testing
    end

    target 'nedFirebaseDemoUITests' do
        inherit! :search_paths
        # Pods for testing
    end

end
:wq!
```



[Podfile](#)[Root Options](#)[Dependencies](#)[Target configuration](#)[platform](#)[project](#)[xcodetproj](#)[link\\_with](#)[inhibit\\_all\\_warnings!](#)[use\\_modular\\_headers!](#)[use\\_frameworks!](#)[Workspace](#)[Sources](#)[Hooks](#)[+ Single Page](#)

# platform

Specifies the platform for which a static library should be built.

CocoaPods provides a default deployment target if one is not specified. The current default values are **4.3** for iOS, **10.6** for OS X, **9.0** for tvOS and **2.0** for watchOS.

If the deployment target requires it (iOS < **4.3**), **armv6** architecture will be added to **ARCHS**.

## Parameters

**name**: Symbol

The name of platform, can be either **:osx** for OS X, **:ios** for iOS, **:tvos** for tvOS, or **:watchos** for watchOS.

**target**: String, Version

The optional deployment. If not provided a default value according to the platform name will be assigned.

## Examples:

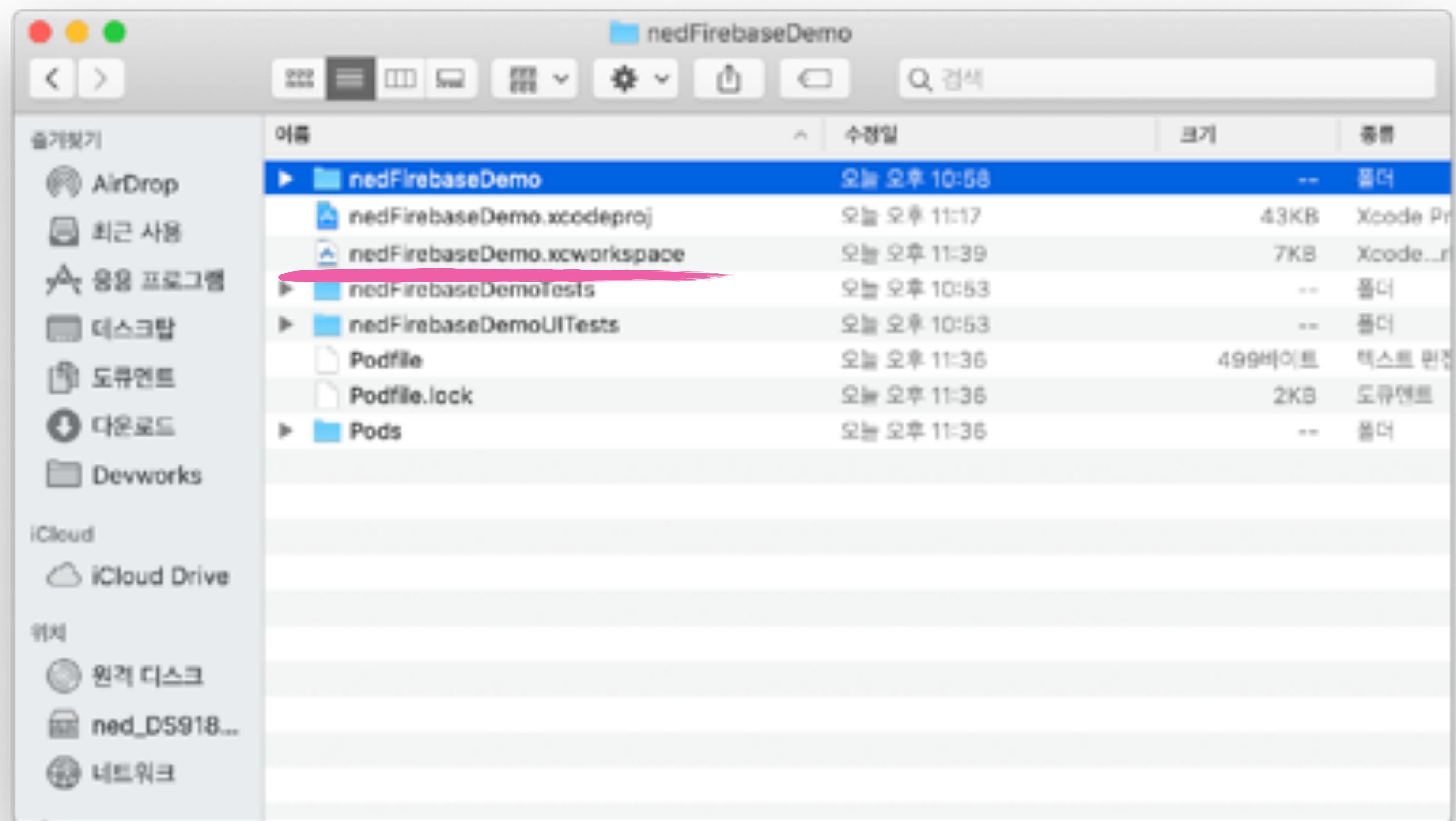
**Specifying the platform**

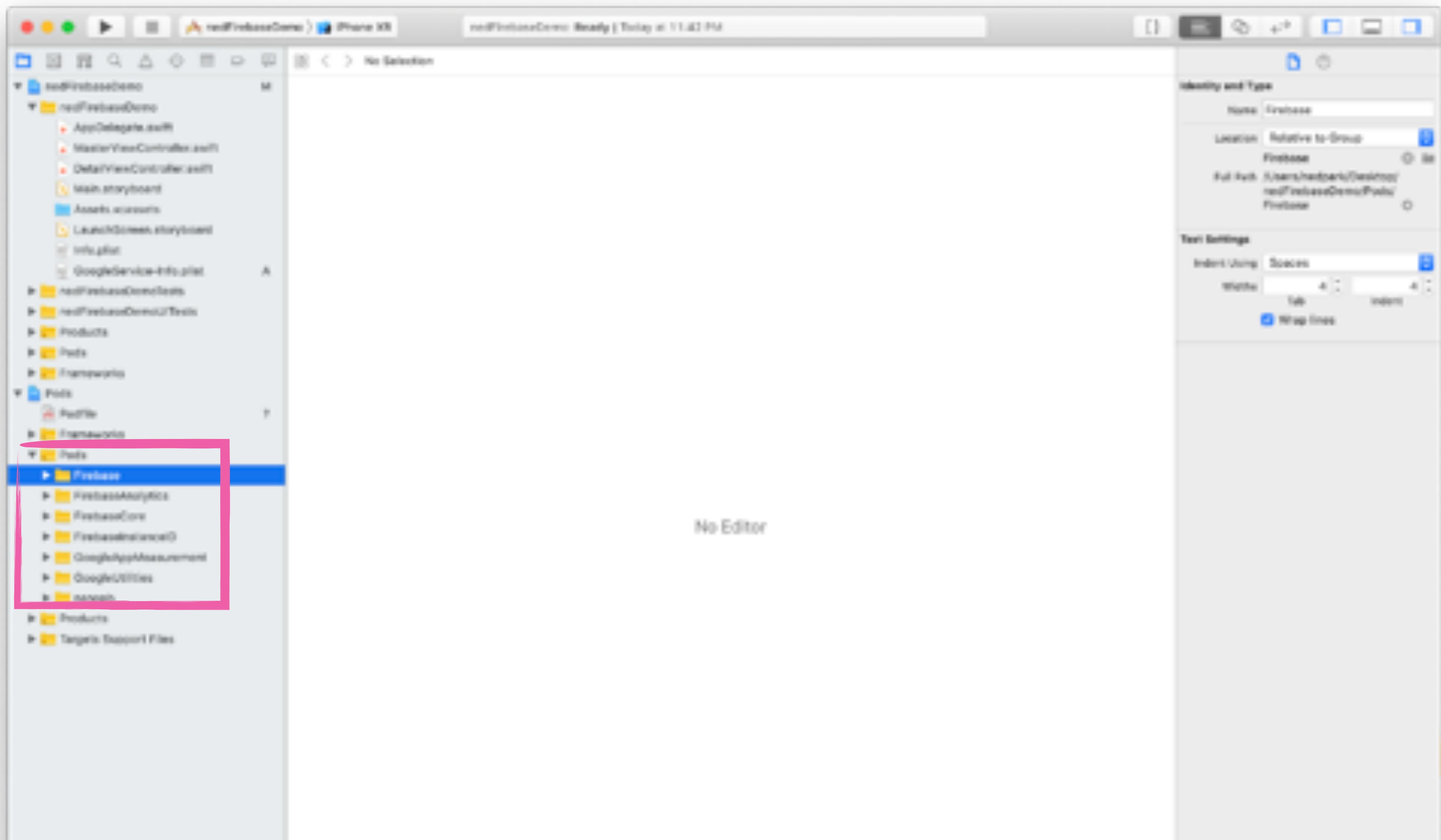
```
platform :ios, '4.0'  
platform :ios
```

```
nedpark@ned-iMac:~/Desktop/nedFirebaseDemo$ pod install
Analyzing dependencies
Downloading dependencies
Installing Firebase (5.13.0)
Installing FirebaseAnalytics (5.3.0)
Installing FirebaseCore (5.1.8)
Installing FirebaseInstanceID (3.3.0)
Installing GoogleAppMeasurement (5.3.0)
Installing GoogleUtilities (5.3.6)
Installing nanopb (0.3.901)
Generating Pods project
Integrating client project

[!] Please close any current Xcode sessions and use `nedFirebaseDemo.xcworkspace` for this project from now on.
Sending stats
Pod installation complete! There is 1 dependency from the Podfile and 7 total pods installed.
nedpark@ned-iMac:~/Desktop/nedFirebaseDemo$
```







#### × iOS 앱에 Firebase 추가

- 1 앱 등록  
iOS 번호: com.aliceart.firebaseioDemo
  - 2 구글 플레이 다운로드
  - 3 Firebase SDK 추가
  - 4 초기화 코드 추가

마지막으로 Firebase에 연결하기 위해 AppDelegate 클래스에 아래의 코드를 추가하세요.

Swift Objective-C

```
import UIKit
import Firebase

@UIApplicationMain
class AppDelegate: UIResponder, UIApplicationDelegate {

    var window: UIWindow?

    func application(_ application: UIApplication,
        didFinishLaunchingWithOptions launchOptions: [UIApplicationLaunchOptionsKey: Any]?) -> Bool {
        FirebaseApp.configure()
        return true
    }
}
```



The screenshot shows the Xcode interface with the following details:

- Project Navigator:** Shows the project structure with files like AppDelegate.swift, MasterViewController.swift, DetailViewController.swift, Main.storyboard, Assets.xcassets, LaunchScreen.storyboard, Info.plist, and GoogleService-Info.plist.
- File Navigator:** Shows the file AppDelegate.swift selected.
- Editor:** Displays the code for AppDelegate.swift. A yellow highlight is placed over the import statement "import Firebase" and the configuration call "FirebaseApp.configure()".
- Identity and Type:** Shows the file is a Default - Swift Source file located at /Users/jongwook/Desktop/nedFirebaseDemo/nedFirebaseDemo/AppDelegate.swift.
- General Settings:** Shows the target membership is nedFirebaseDemo, and the build settings include Text Encoding: No Default Encoding, Line Endings: No Explicit Line Endings, and Insert Using: Spaces.

```
1 //  
2 // AppDelegate.swift  
3 // nedFirebaseDemo  
4 //  
5 // Created by Jongwook Park on 21/11/2018.  
6 // Copyright © 2018 Jongwook Park. All rights reserved.  
7 //  
8  
9 import UIKit  
10 import Firebase  
11  
12 @UIApplicationMain  
13 class AppDelegate: UIResponder, UIApplicationDelegate,  
    UISplitViewControllerDelegate {  
14  
15     var window: UIWindow?  
16  
17  
18     func application(_ application: UIApplication, didFinishLaunchingWithOptions  
19         launchOptions: [UIApplicationLaunchOptionsKey: Any]?) -> Bool {  
20         FirebaseApp.configure()  
21  
22         let splitViewController = window.rootViewController as!  
            UISplitViewController  
23         let navigationController =  
            splitViewController.viewControllers[splitViewController.viewControllers  
                .count-1] as! UINavigationController  
24         navigationController.topViewController.navigationItem.leftBarButtonItem  
            = splitViewController.displayModeButtonItem  
25         splitViewController.delegate = self  
26         return true  
27     }  
28 }
```

문서로 이동

## × iOS 앱에 Firebase 추가

- 1 앱 등록  
iOS 앱 ID: com.africastart.firebaseiodemo
- 2 구성 파일 다운로드
- 3 Firebase SDK 추가
- 4 초기화 코드 추가
- 5 앱을 실행하여 설치 확인

▶ 이미 Google 서버와 통신하는지 확인하는 방법입니다. 앱을 제거한 후 다시 설치해야 할 수도 있습니다.

이전

문서로 이동

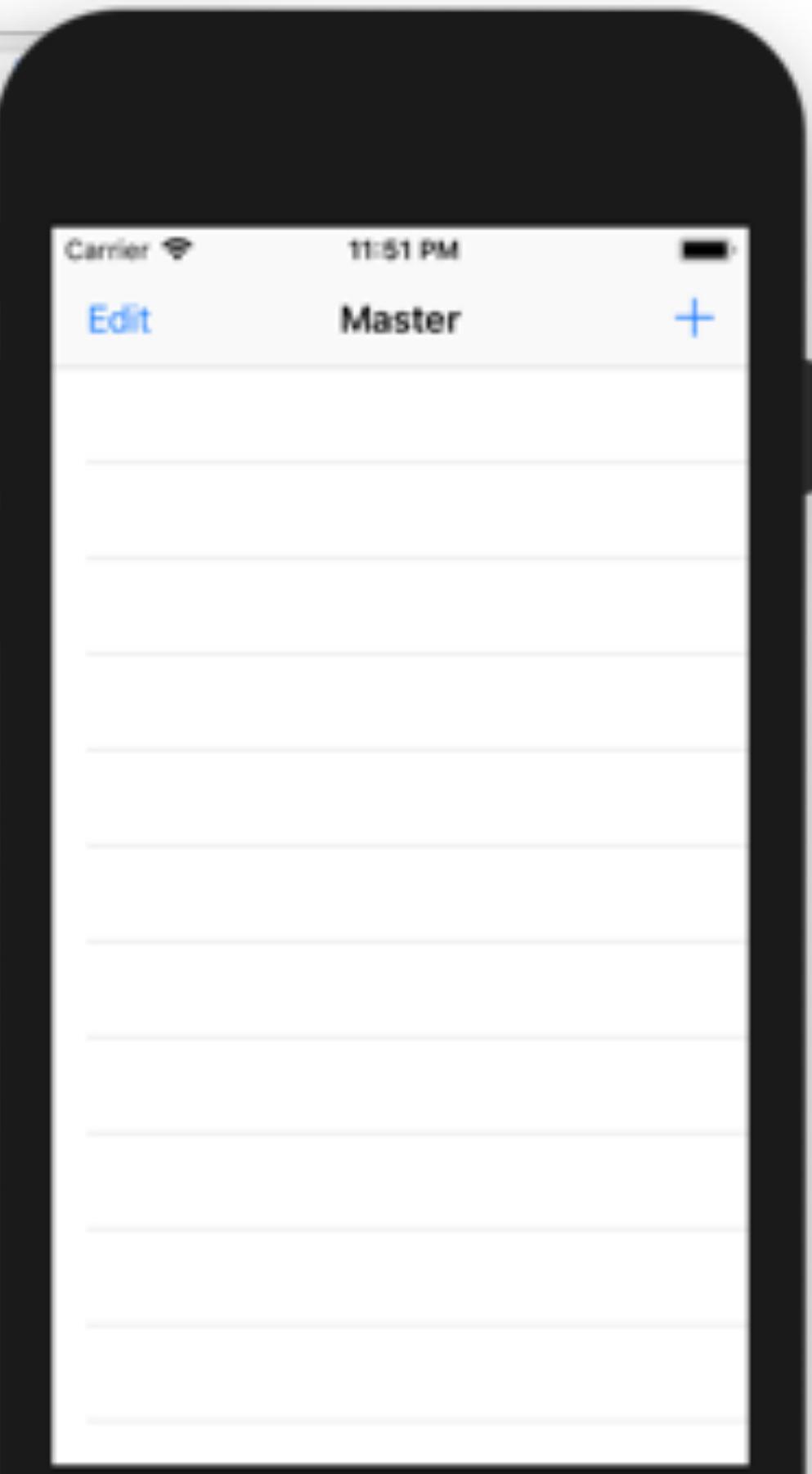
도움말과 피드백



The screenshot shows the Xcode interface with the following details:

- Project Navigator:** Shows the project structure for "nedFirebaseDemo".
- Code Editor:** Displays the content of `AppDelegate.swift`. The code includes imports for `UIKit` and `Firebase`, and defines a `UIApplicationDelegate` class.
- Output Window:** Shows the log output for the application run. It includes several entries from `BoringSSL` indicating failed output frame attempts, and a series of entries from `[MC] System group container` related to configuration profiles and private settings.

```
1 //  
2 //  AppDelegate.swift  
3 //  nedFirebaseDemo  
4 //  
5 //  Created by Jongwook Park on 21/11/2018.  
6 //  Copyright © 2018 Jongwook Park. All rights reserved.  
7 //  
8  
9 import UIKit  
10 import Firebase  
11  
12 @UIApplicationMain  
13 class AppDelegate: UIResponder, UIApplicationDelegate,  
    UISplitViewControllerDelegate {  
14  
15     var window: UIWindow?  
16  
17 }  
18  
19 //  AppDelegate.swift  
20 //  nedFirebaseDemo  
21 //  2018-11-21 23:58:52.435429+0900 nedFirebaseDemo[4475:389848] [BoringSSL]  
22 //      nw_protocol_boringssl_get_output_frames(1301) [C2::1::2][0x7fa2c2422d90] get output frames  
23 //      failed, state 8196  
24 // 2018-11-21 23:58:52.435441+0900 nedFirebaseDemo[4475:389848] [BoringSSL]  
25 //      nw_protocol_boringssl_get_output_frames(1301) [C2::1::2][0x7fa2c2422d90] get output frames  
26 //      failed, state 8196  
27 // 2018-11-21 23:58:52.435932+0900 nedFirebaseDemo[4475:389848] TIC Read Status [2::0x0]: 1:57  
28 // 2018-11-21 23:58:52.436174+0900 nedFirebaseDemo[4475:389848] TIC Read Status [2::0x0]: 1:57  
29 // 2018-11-21 23:58:52.438421+0900 nedFirebaseDemo[4475:389848] [BoringSSL]  
30 //      nw_protocol_boringssl_get_output_frames(1301) [C3::1::2][0x7fa2c2483490] get output frames  
31 //      failed, state 8196  
32 // 2018-11-21 23:58:52.438659+0900 nedFirebaseDemo[4475:389848] [BoringSSL]  
33 //      nw_protocol_boringssl_get_output_frames(1301) [C3::1::2][0x7fa2c2483490] get output frames  
34 //      failed, state 8196  
35 // 2018-11-21 23:58:52.438919+0900 nedFirebaseDemo[4475:389848] TIC Read Status [3::0x0]: 1:57  
36 // 2018-11-21 23:58:52.439151+0900 nedFirebaseDemo[4475:389848] TIC Read Status [3::0x0]: 1:57  
37 // 2018-11-21 23:59:13.592484+0900 nedFirebaseDemo[4475:389265] [MC] System group container for  
38 //      systemgroup.com.apple.configurationprofiles path is /Users/nedpark/Library/Developer/  
39 //      CoreSimulator/Devices/43D8935C-1687-4943-A881-8294714A3426/data/Containers/Shared/  
40 //      SystemGroup/systemgroup.com.apple.configurationprofiles  
41 // 2018-11-21 23:59:13.592876+0900 nedFirebaseDemo[4475:389265] [MC] Reading from private  
42 //      effective user settings.
```



Phone S1 - 12.1

## X iOS 앱에 Firebase 추가

- 앱 등록**  
iOS 앱 ID: com.africahart.mvdfirebasedemo
- 구성 파일 다운로드**
- Firebase SDK 추가**
- 초기화 코드 추가**
- 앱을 실행하여 설치 확인**

**이제 Firebase를 추가했습니다.**

미전

문서로 이동



1. Xcode 프로젝트 생성
2. Firebase 웹사이트에서 프로젝트 추가
3. Firebase 가이드대로 Xcode 프로젝트에 적용
4. 필요에 따라 Firebase 기능 추가 활용



## 제품

모든 제품 및 서비스

설명 Firebase 초기



Android

Flutter



설명 Firebase 8.7

설명 Firebase 8.7

설명 Firebase 8.7

설명 Firebase Analytics (AM) 초기

## 설명 Firebase

## 설명

## 설명

## 설명 Firebase Analytics

## Cloud Firestore (β)

## 설명

## 설명

## Cloud Run

## ML Kit (β)

## 설명

## Crashlytics

## 설명 ML Kit

## 설명

## 서비스

pod 'Firebase/Core'

필수 프레임워크 및 핵심 서비스

pod 'Firebase/Auth'

Auth

pod 'Firebase/Messaging'

Push 푸시 알림

pod 'Firebase/Database'

실시간 데이터베이스

pod 'Firebase/Invites'

초대

pod 'Firebase/DynamicLinks'

동적 링크

pod 'Fabric'

Crashlytics

pod 'Fabric/Crashlytics'

엔터 구성

pod 'Firebase/RemoteConfig'

인증

pod 'Firebase/Auth'

서비스

pod 'Firebase/Storage'

저장소

pod 'Firebase/Performance'

성능 모니터링

pod 'Firebase/Firestore'

Cloud Firestore

pod 'Firebase/Functions'

Firebase와 Cloud Functions API

pod 'Firebase/Ml/Vision'

ML Kit Vision API

pod 'Firebase/Ml/Vision/labelModel'

ML Kit 이미지 라벨링

pod 'Firebase/Ml/Vision/landmarkModel'

ML Kit 이미지 랜드마크

pod 'Firebase/Ml/Vision/textModel'

ML Kit 이미지 텍스트 인식

pod 'Firebase/Ml/Vision/faceModel'

ML Kit 얼굴 감지 API

## CocoaPods 및 이 통합

Cocoapods를 사용하지 않는다면 Firebase SDK를 직접 가져와서 Firebase SDK를 활용할 수 있습니다.

## 제품

설명 Firebase

설명 Firebase 8.7

설명 Firebase 8.7

설명 Firebase 8.7

설명 Firebase pod

설명 CocoaPods 2.1.0

설명



## Firebase 실시간 데이터베이스

# 실시간으로 데이터 저장 및 동기화

문서로 이동

문서 보기

## JSON 데이터 실시간 동기화

Firebase 실시간 데이터베이스는 실시간으로 데이터를 저장하고 사용자 간에 동기화할 수 있는 클라우드 호스팅 NoSQL 데이터베이스입니다.

iOS </> C++



```
nedFirebaseDemo — vi Podfile — 80x24
# Uncomment the next line to define a global platform for your project
# platform :ios, '9.0'
platform :ios, '12.0'

target 'nedFirebaseDemo' do
  # Comment the next line if you're not using Swift and don't want to use dynamic frameworks
  use_frameworks!

  # Pods for nedFirebaseDemo
  pod 'Firebase/Core'
  pod 'Firebase/Database'■

  target 'nedFirebaseDemoTests' do
    inherit! :search_paths
    # Pods for testing
  end

  target 'nedFirebaseDemoUITests' do
    inherit! :search_paths
    # Pods for testing
  end

-- INSERT --
```



```
nedpark@ned-iMac:~/Desktop/nedFirebaseDemo$ pod update
Update all pods
Updating local specs repositories
$ /usr/local/bin/git -C /Users/nedpark/.cocoapods/repos/master fetch origin
--progress
remote: Enumerating objects: 245, done.
remote: Counting objects: 100% (245/245), done.
remote: Compressing objects: 100% (144/144), done.
remote: Total 245 (delta 127), reused 175 (delta 91), pack-reused 0
오브젝트를 받는 중: 100% (245/245), 73.81 KiB | 162.00 KiB/s, 완료.
델타를 알아내는 중: 100% (127/127), 로컬 오브젝트 52개 마침.
https://github.com/CocoaPods/Specs URL에서
      5fa7e382889..a35c3a37f38 master    -> origin/master
$ /usr/local/bin/git -C /Users/nedpark/.cocoapods/repos/master rev-parse
--abbrev-ref HEAD
master
$ /usr/local/bin/git -C /Users/nedpark/.cocoapods/repos/master reset --hard
origin/master
HEAD의 현재 위치는 a35c3a37f38입니다 [Add] JKTextInputObserver 1.0.4

CocoaPods 1.6.0.beta.2 is available.
To update use: `sudo gem install cocoapods --pre`
[!] This is a test version we'd love you to try.
```



redFirebaseDemo (iPhone 8) redFirebaseDemo [Build redFirebaseDemo: Success] (Sunday at 11:50 PM)

redFirebaseDemo redFirebaseDemo AppDelegate.swift AppDelegate

```
// AppDelegate.swift
// redFirebaseDemo
// Created by Jongwook Park on 21/11/2018.
// Copyright © 2018 Jongwook Park. All rights reserved.

import UIKit
import Firebase

@UIApplicationMain
class AppDelegate: UIResponder, UIApplicationDelegate,
    UISplitViewControllerDelegate {

    var window: UIWindow?

    func application(_ application: UIApplication, didFinishLaunchingWithOptions
        launchOptions: [UIApplication.LaunchOptionsKey: Any]?) -> Bool {
        FirebaseApp.configure()

        let splitViewController = window!.rootViewController as!
            UISplitViewController
        let navigationController =
            splitViewController.viewControllers[splitViewController.viewControllers
                .count-1] as! UINavigationController
        navigationController.topViewController.navigationItem.leftBarButtonItem =
            splitViewController.displayModeButtonItem
        splitViewController.delegate = self
        return true
    }
}
```

Identity and Type

- Name: AppDelegate.swift
- Type: Default - Swift Source
- Location: Relative to Group: AppDelegate.swift
- Full Path: /Users/redbeanz/Desktop/redFirebaseDemo/redFirebaseDemo/AppDelegate.swift

Use Standard Resource Tags

- Only resources are taggable

Target Membership

- redFirebaseDemo
- redFirebaseDemoTests
- redFirebaseDemoUITests

Run Settings

- Text Encoding: No Default Encoding
- Line Endings: No Explicit Line Endings
- Indent Using: Spaces
- Width: 80
- Wrap Lines:



Firebase

제품

시작 가이드

기록

문서

지원

Q

검색

문서 관리



## Cloud Firestore

# 글로벌 규모의 앱 데이터 저장 및 동기화

한글판

한국 버전

## 글로벌 앱을 위해 구축 된 NoSQL 데이터베이 스

Cloud Firestore는 글로벌 규모의 모바일 및 웹 앱을 데이터를  
쉽게 저장, 동기화, 뷰어할 수 있게 해주는 NoSQL 문서 데이터베  
이스입니다.

보기 </>



Cloud Firestore

## 문서

기술

기획

설计

前端

Cloud Firestore

기술 블로그

기술

프로젝트 설정 및 관리

개발언어

기술

전용

실시간 데이터베이스

소개

데이터베이스 선택

API

선택하기

데이터 구조화

데이터 정기 및 초기화

데이터 적용 대안

모토라와 기능 지원 표준

Android

iOS

React Native

Node.js

Python

Kotlin 및 Swift

서버 및 앱

Cloud Firestore

Cloud Functions

Cloud Storage for Firebase

Cloud Realtime Database

Cloud Firestore

## 데이터베이스 선택: Cloud Firestore 또는 실시간 데이터베이스

☆☆☆☆☆

Firebase는 실시간 데이터베이스 기능을 지원하여 클라이언트에서 맥세스할 수 있는 2가지 플랫폼도 기본 데이터베이스 솔루션을 제공합니다.

- 실시간 데이터베이스는 Firebase의 고유한 데이터베이스로서, 여러 클라이언트에서 실시간으로 상태를 동기화해야 하는 모바일 앱을 위한 효율적인 저연 시간이 짧은 솔루션입니다.
- Cloud Firestore**는 모바일 및 기기용 Firebase의 케이션 주역 데이터베이스로서, 실시간 데이터베이스의 성능을 바탕으로 더욱 적극적인 서비스를 위하여 보증을 선보입니다. 물론 실시간 데이터베이스보다 풍부하고 빠른 추가 기능과 편리를 확장성을 제공합니다.

### 내 프로젝트에 맞는 데이터베이스

제가 단계 제품을 사용해도 무방하다면 세 프로젝트에 Cloud Firestore를 사용해 보세요. Cloud Firestore는 항상 일관성에서 강력한 기능을 지원하도록 설계된 간교리를 바탕으로 추가적인 기능, 성능, 확장성을 제공합니다. 예제는 위의 유형, 이 강력한 보안 규칙, 또는 협상 등의 개선 사항이 계속 필요할 예정입니다.

Cloud Firestore와 실시간 데이터베이스의 다른과 같은 차이점을 고려하여 데이터베이스 솔루션을 선택하세요.

#### 데이터 모델

실시간 데이터베이스와 Cloud Firestore는 모두 NoSQL 데이터베이스입니다.

##### 실시간 데이터베이스

데이터를 하나의 JSON 트리로 저장합니다.

- 단순한 데이터를 매우 쉽게 저장합니다.
- 복잡한 계층적 데이터를 대규모로 정리하기 어렵습니다.

실시간 데이터베이스 데이터 모델 자체의 불이익

##### Cloud Firestore

컬렉션으로 정의하는 문서의 데이터를 저장합니다.

- 단순한 데이터를 JSON과 매우 비슷한 형식으로 문서에 쉽게 저장합니다.
- 문서 단위의 자원 할당을 사용하여 복잡한 계층적 데이터를 대규모로 쉽게 정리할 수 있습니다.

기술

새 프로젝트에 맞는 데이터베이스

데이터 모델

실시간 및 Cloud Firestore 기반

환경

Cloud Firestore 및 실시간

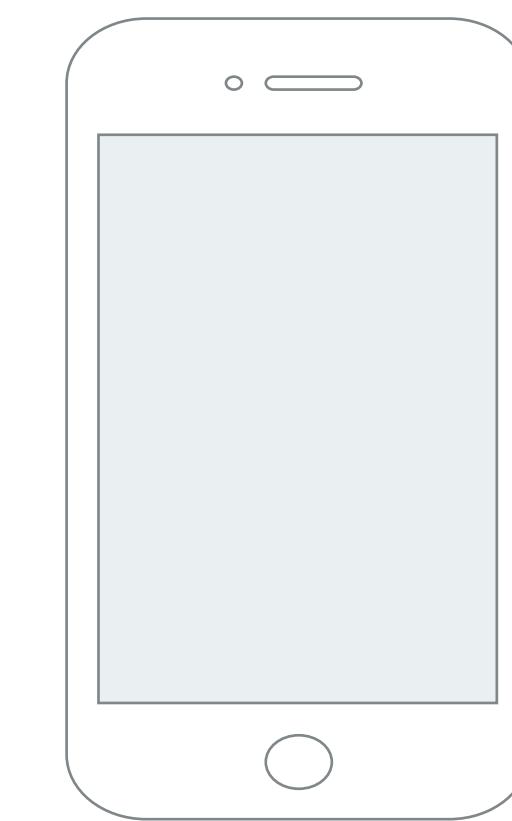
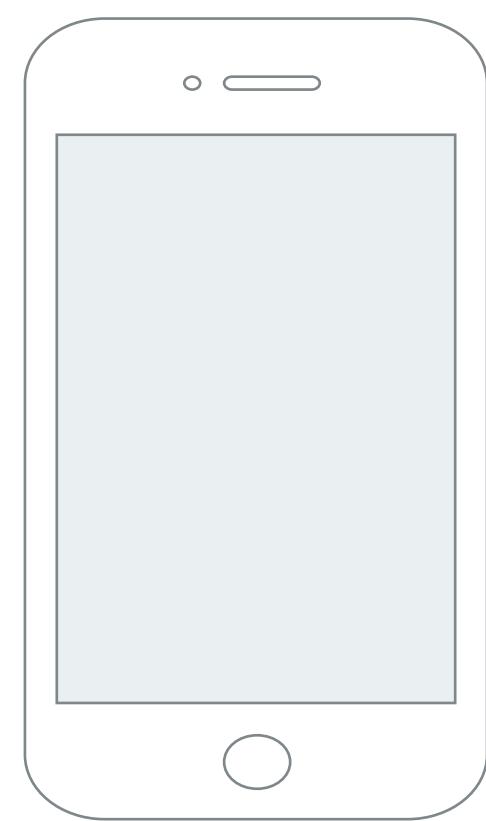
데이터베이스 사용

# Demo

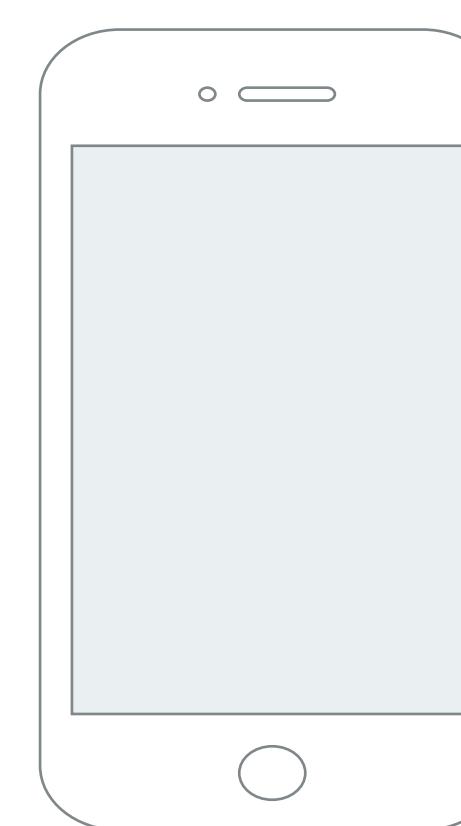
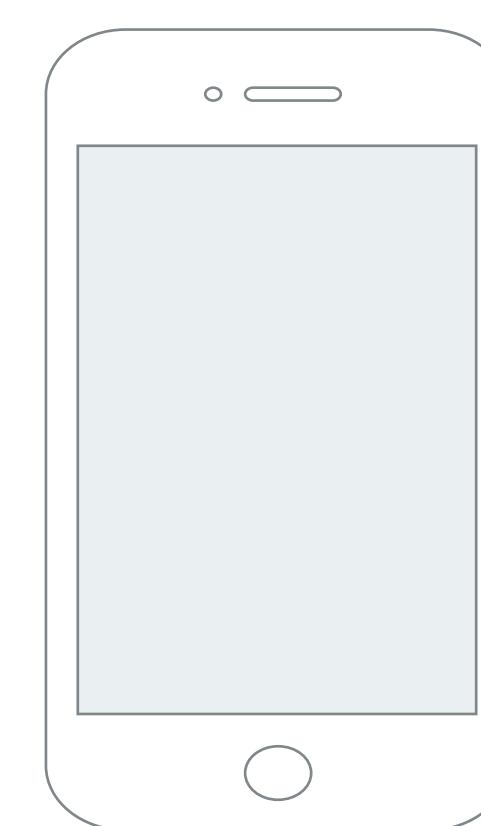
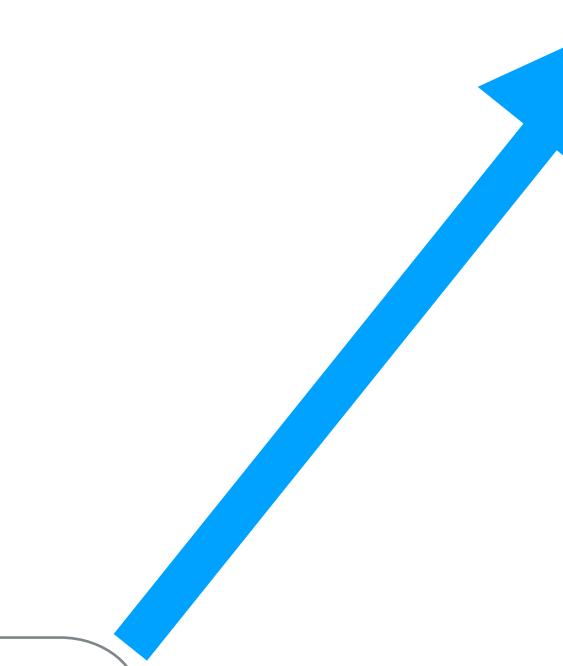
대문 여닫힘 알림판



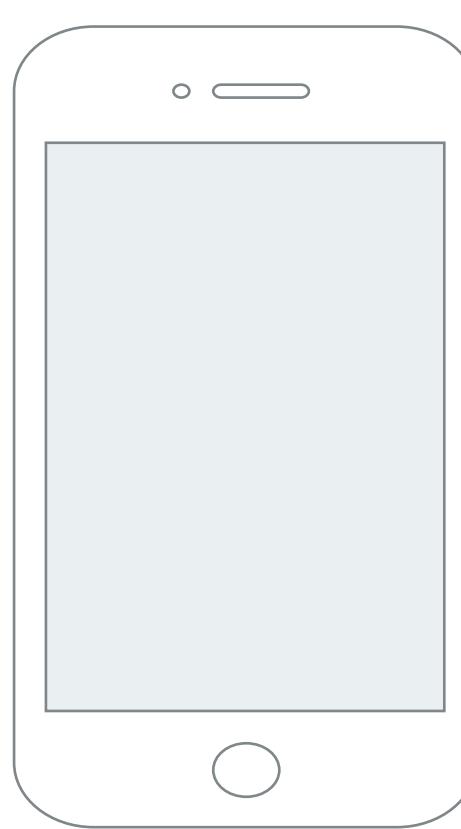
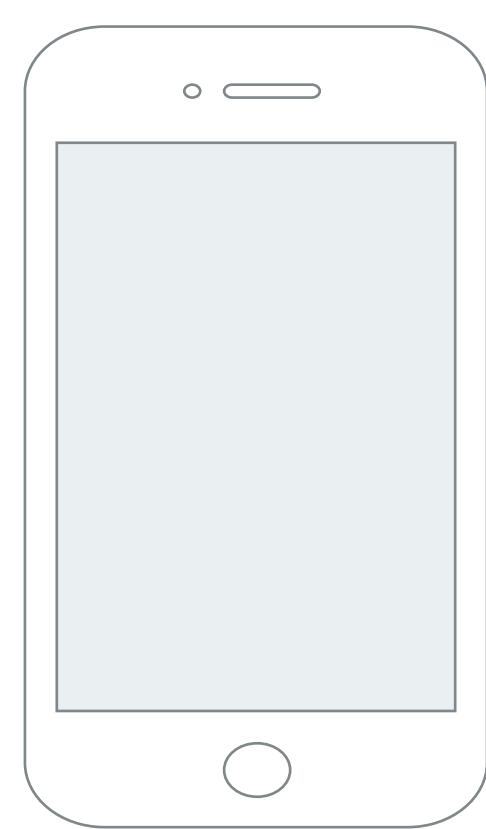
**Firebase**  
실시간 DB



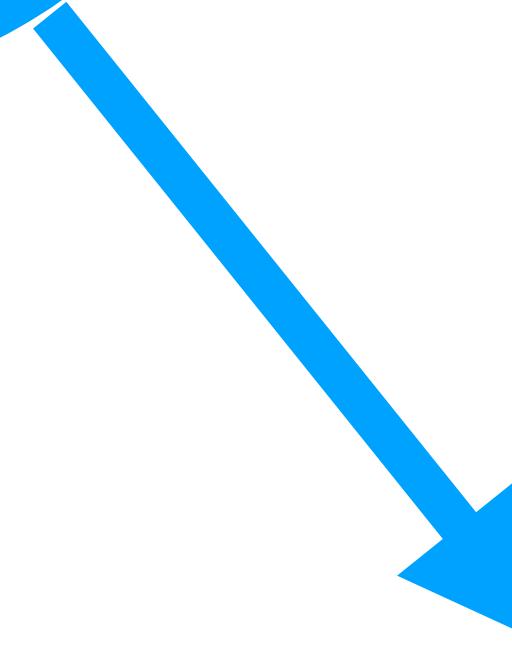
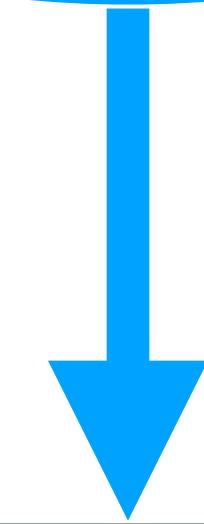
**Firebase**  
실시간 DB



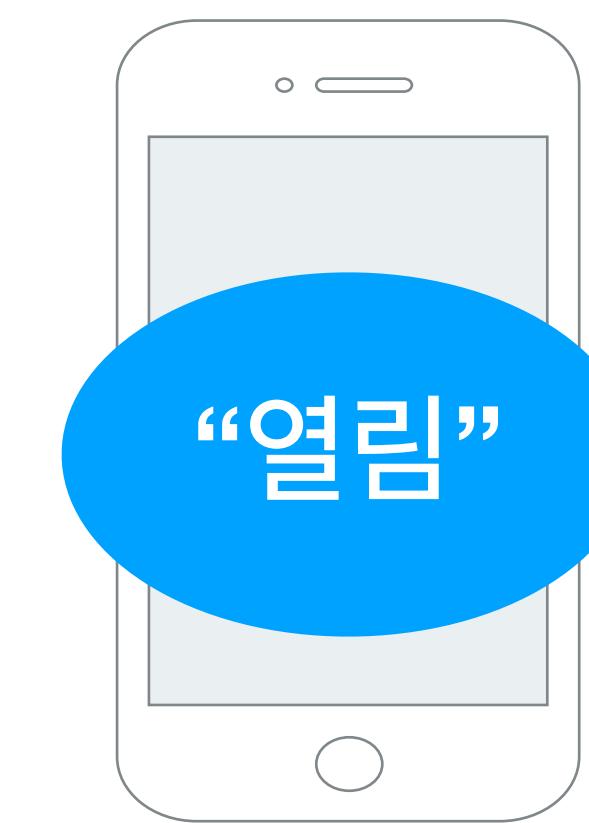
“열림”



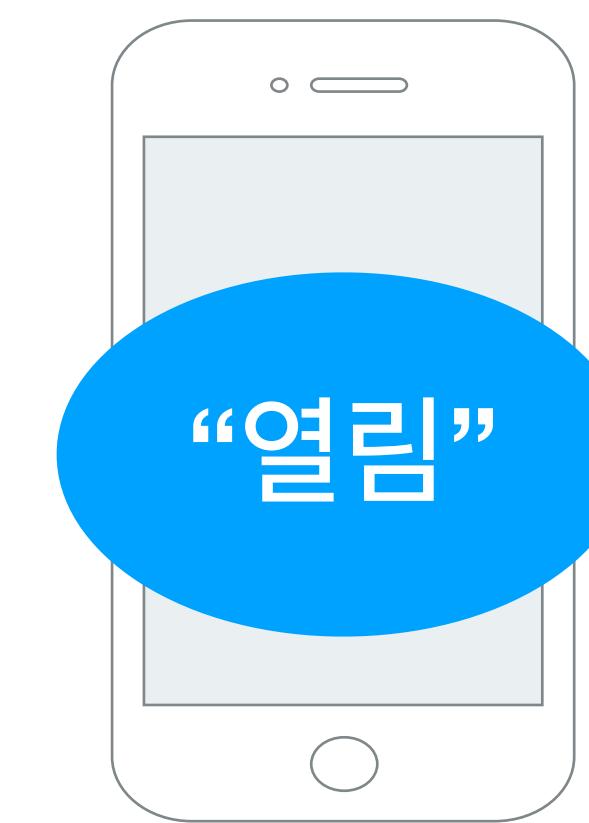
“열림”



“열림”



“열림”



“닫힘”



“열림”

“닫힘”

“열림”

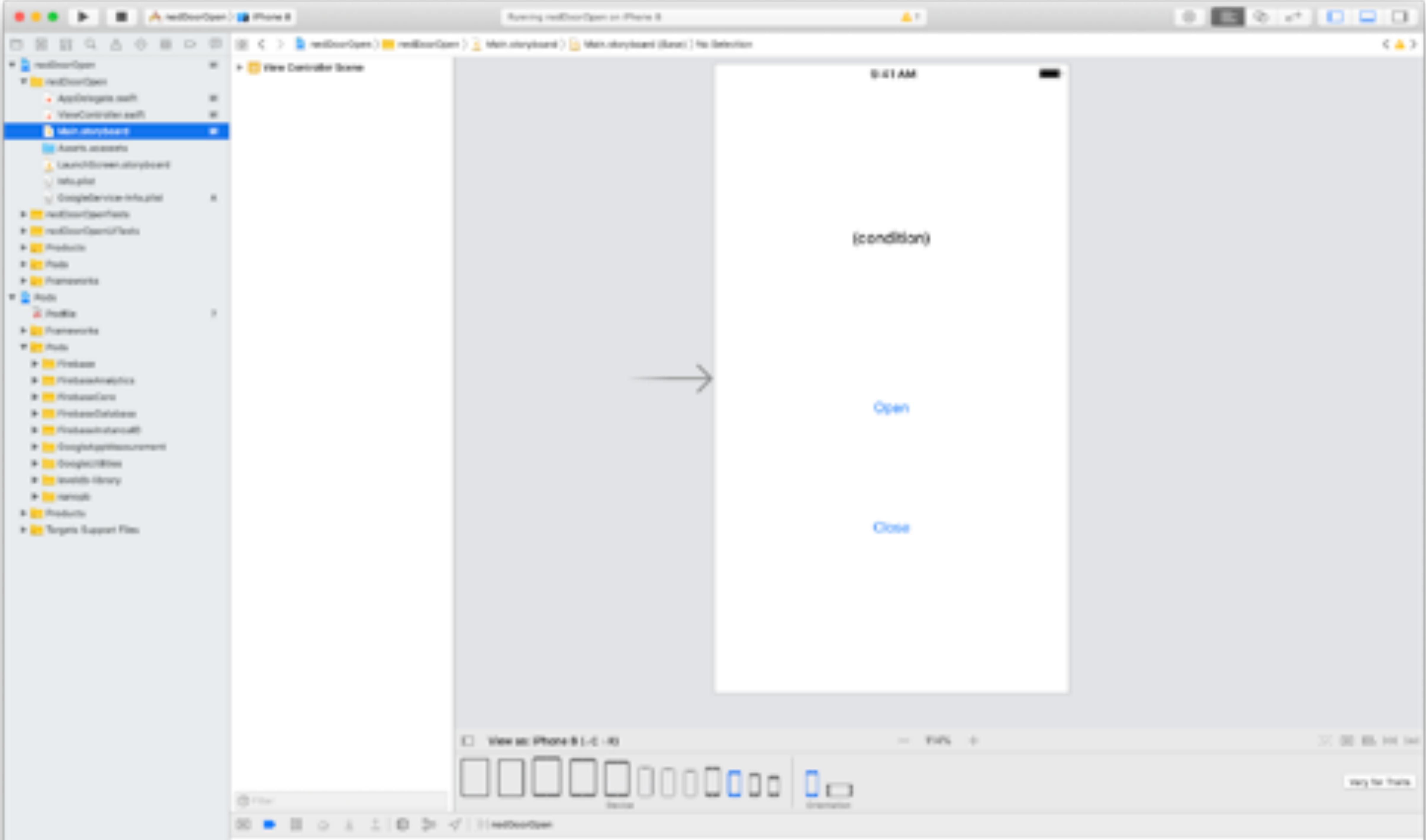


“닫힘”



“닫힘”





Running redDoorOpen on iPhone 8

```
redDoorOpen
+- redDoorOpen
  +-- AppDelegate.swift
  +-- ViewController.swift (selected)
  +-- Main.storyboard
  +-- Assets.xcassets
    +-- LaunchScreen.storyboard
      +-- info.plist
      +-- GoogleService-Info.plist
  +-- redDoorOpen.xcassets
  +-- redDoorOpen.swift
  +-- Products
  +-- Pod
  +-- Frameworks
  +-- Tests
    +-- Media
  +-- Frameworks
  +-- Pods
    +-- FirebaseFirestore
    +-- FirebaseAnalytics
    +-- FirebaseCore
    +-- FirebaseDatabase
    +-- FirebaseFunctions
    +-- FirebaseStorage
    +-- GoogleSignIn
    +-- SwiftKeychainWrapper
  +-- Products
  +-- Targets Support Files
```

```
1 import UIKit
2 import Firebase
3
4 class ViewController: UIViewController {
5
6     //Outlets weak var labelConditions: UILabel!
7
8     var ref: DatabaseReference!
9
10    override func viewDidLoad() {
11        super.viewDidLoad()
12
13        self.ref = Database.database().reference()
14
15    }
16
17    override func viewDidAppear(_ animated: Bool) {
18        super.viewDidAppear(animated)
19
20    }
21
22    @IBAction func pressItOpen(_ sender: Any) {
23        print("pressItOpen")
24        self.ref.child("condition").setValue(["condition": "open"])
25
26    }
27
28    @IBAction func pressItClose(_ sender: Any) {
29        print("pressItClose")
30        self.ref.child("condition").setValue(["condition": "close"])
31
32    }
33
34 }
```

Running viewDidLoad on iPhone 8

```

# Main.storyboard
@IBOutlet weak var labelCondition: UILabel!
var ref: DatabaseReference!
class ViewController: UIViewController {
    override func viewDidLoad() {
        super.viewDidLoad()
        self.ref = Database.database().reference()
    }
    override func viewDidAppear(_ animated: Bool) {
        print("pressBtnOpen")
        self.ref.child("condition").setValue("condition": "open")
    }
    @IBAction func pressBtnClose(_ sender: Any) {
        print("pressBtnClose")
        self.ref.child("condition").setValue("condition": "close")
    }
}

```

iPhone 8 - 12.1

```

[8x7f0662790000] get output frames failed, state 82%
2018-11-23 11:36:18.188509+0900 nodBoxOpen[8387:1332421] TSC Read
  Status [1:0w0]: 1167
2018-11-23 11:36:18.188636+0900 nodBoxOpen[8387:1332421] TSC Read
  Status [1:0w0]: 1167
pressBtnOpen
2018-11-23 11:36:40.322938+0900 nodBoxOpen[8387:1334293] S.13.0 -
  [Firebase/Database][E-FD8E18612] setValue: or removeValue: at /condition failed: permission_denied
pressBtnClose
2018-11-23 11:36:42.263999+0900 nodBoxOpen[8387:1332429] S.13.0 -
  [Firebase/Database][E-FD8E18612] setValue: or removeValue: at /condition failed: permission_denied

```



Firebase

Project Overview

개발

- Authentication
- Database
- Storage
- Hosting
- Functions
- ML Kit

통계

- Analytics
- Performance
- Test Lab

마이리액스

- Dashboard
- Events
- Conversions
- Audiences
- Funnels
- User Properties
- Latest Release
- Retention
- StreamView
- DebugView

## Cloud Firestore

다목적적인 데이터와 자동 확장 기능을 갖춘 차세대 실시간 데이터베이스입니다.

데이터베이스 만들기



### 자세히 알아보기



Cloud Firestore의 재할인 쿠폰  
받으러 가기



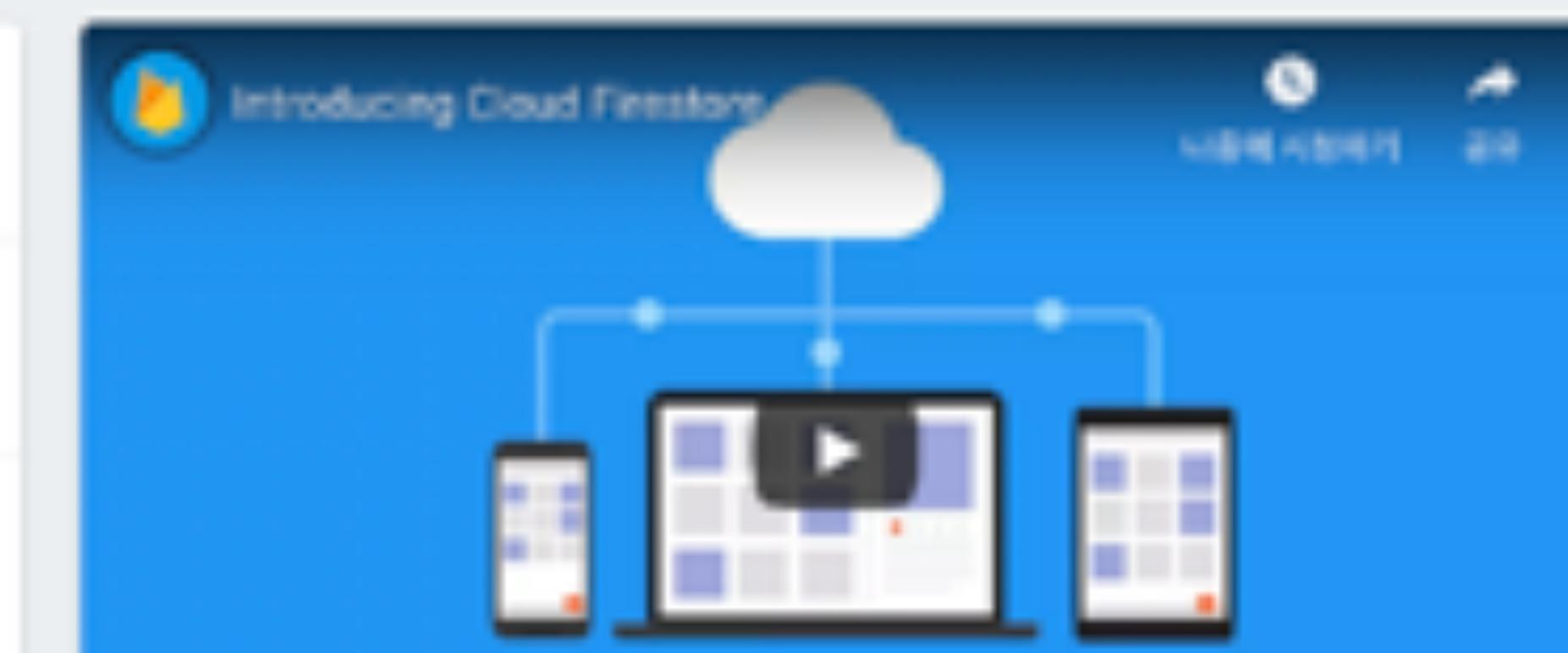
어떻게 시작하나요?  
한국 보기



Cloud Firestore의 모바일 지원  
정책 보기



Cloud Firestore로 무언가를 할  
수 있습니까?  
한국 보기



Cloud Firestore

Firebase

- Project Overview
- Auth
- Authentication
- Databases
- Storage
- Hosting
- Functions
- ML Kit

Analytics

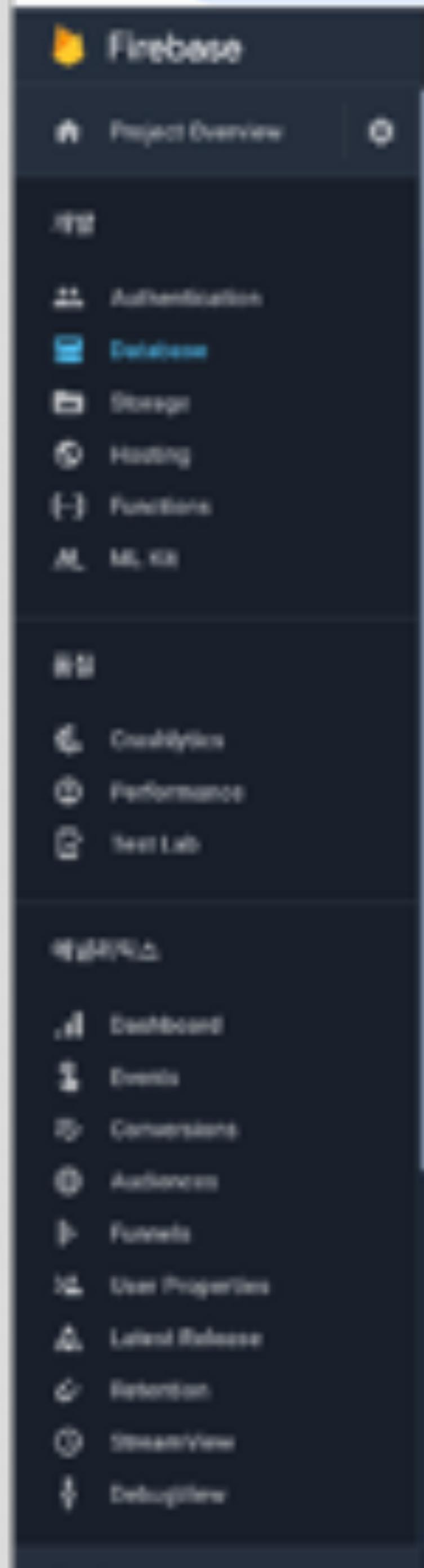
- Dashboard
- Events
- Conversions
- Audiences
- Funnels
- User Properties
- Latest Release
- Retention
- StreamView
- DebugView

Database Realtime Database

1000 24 100 480

https://marvelcomics.firebaseio.com/

zeddcomics: m13



Firebase

Project Overview

개발

- Authentication
- Database
- Storage
- Hosting
- Functions
- ML Kit

통계

- Analytics
- Performance
- Test Lab

액설리어스

- Dashboard
- Events
- Conversions
- Audiences
- Funnels
- User Properties
- Latest Release
- Retention
- StreamView
- DebugView

Database Realtime Database

개설자 권한 편집시작 | 개설 시작 | 사용자 편집

★ 기본 보안 규칙은 Firebase Cloud Firestore를 수 있도록 쉽게 설정합니다.

기본 보안 설정 보기 | 찾기

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```

Running redDoorOpen on iPhone 8

```
#import "ViewController.swift"
// ViewCONTROLLER_SWIFT
// redDoorOpen
// Created by Jongwook Park on 22/11/2018.
// Copyright © 2018 Jongwook Park. All rights reserved.
// 

import UIKit
import FirebaseDatabase

class ViewController: UIViewController {

    @IBOutlet weak var labelCondition: UILabel!

    var ref: DatabaseReference!

    override func viewDidLoad() {
        super.viewDidLoad()

        self.ref = Database.database().reference()
    }

    override func viewWillAppear(_ animated: Bool) {
        super.viewWillAppear(animated)
    }

    @IBAction func pressBtnOpen(_ sender: Any) {
        print("pressBtnOpen")
        self.ref.child("condition").setValue(["condition": "open"])
    }

    @IBAction func pressBtnClose(_ sender: Any) {
        print("pressBtnClose")
        self.ref.child("condition").setValue(["condition": "close"])
    }
}
```

Condition (condition)

Open

Close

iPhone 8 - 12.1

2018-11-23 11:36:42.262999+0900 redDoorOpen[8587:11332439] S-13.8 - [Firebase/Database][I-408038812] setWithCompletionHandler or removeValue at /condition failed: permission\_denied  
pressBtnClose  
2018-11-23 11:36:42.262999+0900 redDoorOpen[8587:11332439] S-13.8 - [Firebase/Database][I-408038812] setWithCompletionHandler or removeValue at /condition failed: permission\_denied  
pressBtnOpen  
pressBtnClose



https://console.firebase.google.com/project/marvelcomics/database/rules/open/data

**Firebase**

Project Overview

Auth

Authentication

Databases

Storage

Hosting

Functions

ML Kit

Analytics

Crashlytics

Performance

Test Lab

Metrics

Dashboard

Events

Conversions

Audiences

Funnels

User Properties

Latest Release

Retention

StreamView

DebugView

Database

Realtime Database

10000 200 100 4000

Condition

condition: "else"

https://marvelcomics.firebaseio.com/

Running testOpen on iPhone X

```
1 // Import UIKit
2 // Import Firebase
3
4 class ViewController: UIViewController {
5
6     @IBOutlet weak var labelCondition: UILabel!
7
8     var ref: DatabaseReference!
9
10    override func viewDidLoad() {
11        super.viewDidLoad()
12
13        self.ref = Database.database().reference()
14    }
15
16    override func viewDidAppear(_ animated: Bool) {
17        super.viewDidAppear(animated)
18
19        self.ref.observeSingleEvent(of: .value, with: { [snapshot] in
20            let value = snapshot.value as? NSDictionary
21            let condition = value?["condition"] as? String ?? nil
22            self.labelCondition.text = condition != "closed" ? String(condition!) : "closed"
23        })
24    }
25
26    @IBAction func pressBtnOpen(_ sender: Any) {
27        print("pressBtnOpen")
28        self.ref.child("condition").setValue("closed")
29    }
30
31    @IBAction func pressBtnClose(_ sender: Any) {
32        print("pressBtnClose")
33        self.ref.child("condition").setValue("closed")
34    }
35}
```

iPhone X 12:08 PM

open

Open

Close

iPhone X - 12.1

No Matches

status: 2018-01-23 12:08:02.188262+0900 testOpen(9809:1286244) TIC Read

Status [1:0x0]: 1:67

Status [1:0x0]: 1:67

pressBtnOpen

pressBtnClose

pressBtnOpen

pressBtnClose

pressBtnOpen



이 글의 저작권은 글쓴이에게 있으며, 배포는 코더스하이가 합니다.

## Firebase를 이용하여 Timeline 만들기

Posted January 13, 2018. | By: Byungwook Park

이 글에선 Firebase를 이용하여 Instagram을 모방한 앱을 만들어 보겠습니다.

Firebase는 데이터베이스, 서버 등에 대해 놀라울 만큼 간단하고 편리하게 사용할 수 있는 서비스입니다. 이를 이용하여 앱을 만들어 보겠습니다. Firebase 설치 및 기본 API에 대한 설명은 [Firebase를 이용하여 새팅한 과정](#)을 참조하길 바랍니다.)

## 만들고자 하는 타임 라인

먼저 Timeline에 대해 알아보겠습니다.

Instagram에서는 한 명의 사용자가 하나의 Timeline을 가집니다. Timeline은 유저가 팔로우한 모든 사람의 게시글들을 최신 순서로 보여줍니다. 2016년 이후로 Instagram은 Timeline을 시간 차례 순으로 보여주지 않고, 알고리즘을 통해 보여줍니다. 여기서 알고리를 기준으로 얘기하겠습니다.)

이 블로그 저작권은 글쓴이에게 있으며, 배포는 코더스하이가 합니다.

## Firebase를 이용하여 채팅창 만들기

Posted June 17, 2017. | By Hyunsoo Park

이번 포스트에서는 Firebase라는 백엔드 서비스를 이용하여 여러 사용자와 대화를 할 수 있는 공간을 구현해보겠습니다.

Firebase는 직접 서버를 구축할 필요 없이 서버가 가져야 할 기본적인 기능과 유저 인증, 활동 분석, 파일 저장소 등을 제공해주는 서비스이며, Google에서 제공합니다.

서버 없이도 많은 사용자들끼리 소통하거나 중요한 데이터들을 중앙 서버에 저장할 필요가 있는 어플리케이션을 개발할 수가 있어 이 서비스를 활용한 많은 애플리케이션이 등장하고 있는데요, 이 글을 통해 Firebase의 활용법과 채팅 서비스의 구현 방식을 참고하여 채팅 기능을 가진 어플리케이션 개발에 도움이 되길 희망합니다.

## 시작하기



**“There ain't no such thing as a free lunch”**



무료로 시작하기

# 무료로 시작하고 종량제 방식으로 확장합니다.

제품	Spark 요금제 매개수에 개별차례에 낙락한 한도 무료	Flame 요금제 정한하는 한정 위주 제도 가능한 가격 체계 매월 \$25	Blaze 요금제 고정으로 가격 책정 종량제
무료로 포함			Free usage from Spark plan included*

## 무료로 포함

A/B Testing, Analytics, App Indexing,  
Authentication (except Phone Auth), Cloud  
Messaging (FCM), Crashlytics, Dynamic  
Links, Invites, Performance Monitoring,  
Predictions, and Remote Config.



포함



포함



포함

# 장점

- Back-end 지식이 없어도 시작할 수 있다
- 개발단계에서는 비용이 거의 발생하지 않는다
- 각종 Front-end 플랫폼 지원 iOS, Android, Web, C++, Unity
- Machine-Learning과 같은 복잡한 기능을 쉽게 활용할 수 있다
- 구글이 제공한다



# 단점

- 사용량이 늘어나면 비용이 커질 수 있다
- Node.js와 같은 서버 코딩이 필요할 수 있다
- 기본 제공하는 버전의 플랫폼 외에 대응이 어렵다
- 기본 제공하는 기술로 활용성이 한정된다
- 페이스북도 Parse 내렸는데...



# 활용 가이드

- 초기 프로토타입 개발에 활용
- 본격 서비스에서는 직접 Back-end를 개발해 구축하는 것이 좋음
- View Controller에서 직접 호출하지 않고 Data Controller에서 간접 연결시켜 의존성을 줄여야 함



# Mocky

Mock your HTTP responses to test your REST API

> PUT https://www.mocky.io/v2/5185415be172nc3a98784eed

< HTTP/1.1 200 OK  
< Content-Type: application/json; charset=UTF-8  
{ "Hello": "world" }



Twitter

Your link is ready: <http://www.mocky.io/v2/5b57e5b300000e5327bbbbb>



Generate your custom response

Status Code

200 OK

Content Type

application/json

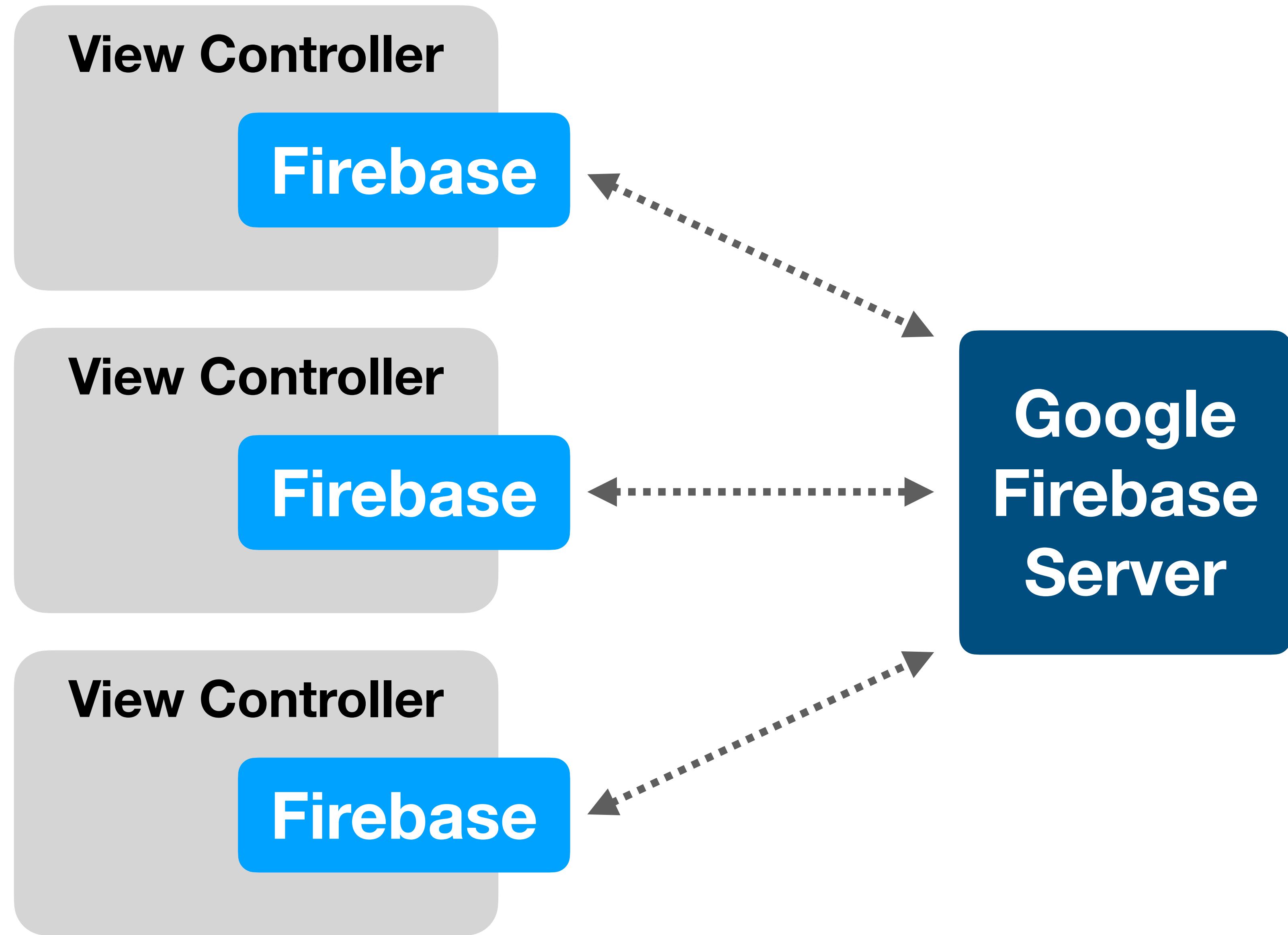
UTF-8

Body

```
{  
  "message": "Hello World"  
}
```

Generate my HTTP Response

Switch to advanced mode



**View Controller**

**Firebase**

**View Controller**

**Firebase**

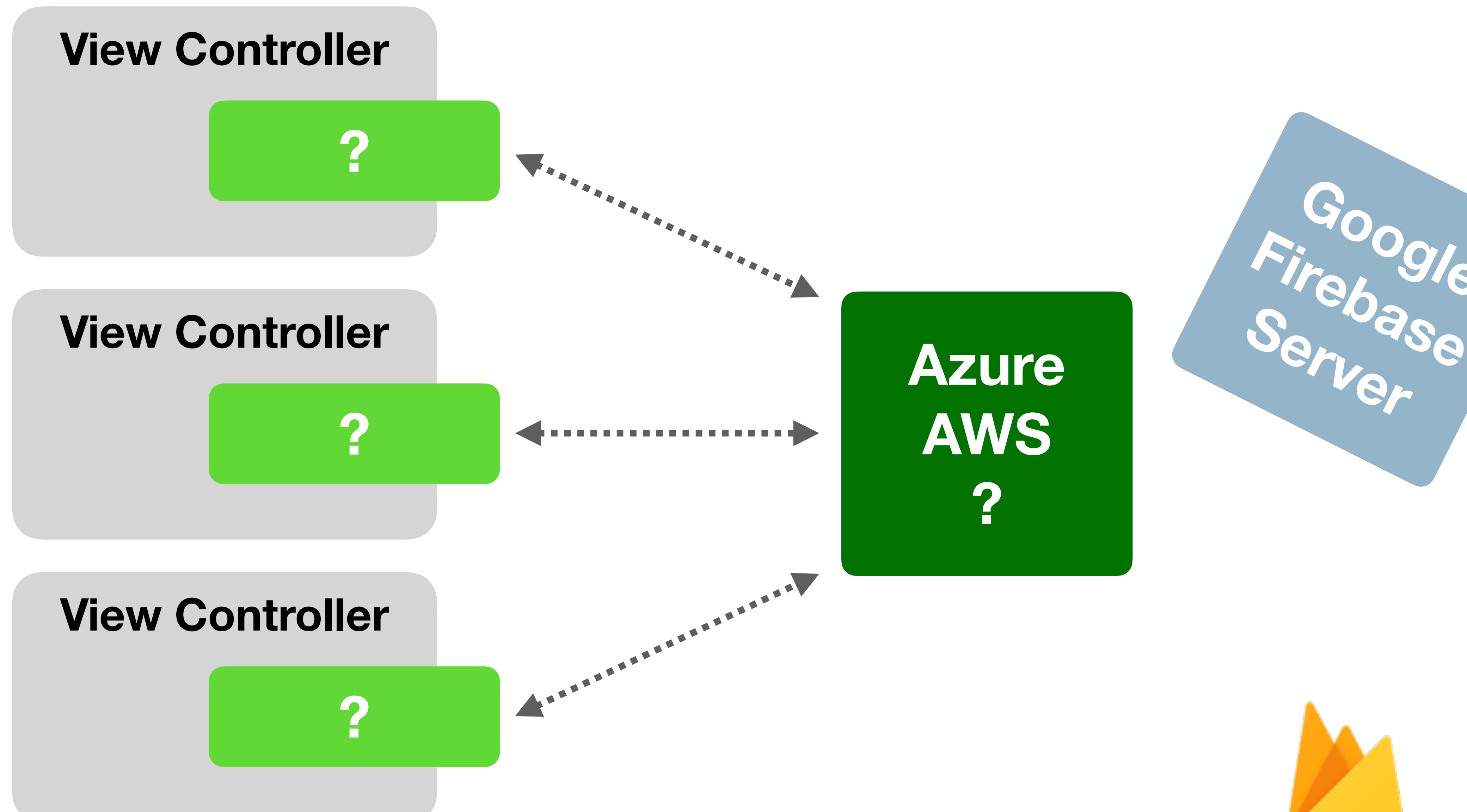
**View Controller**

**Firebase**

**Azure  
AWS  
?**

**Google  
Firebase  
Server**





## View Controller

Data Controller  
Method

## View Controller

Data Controller  
Method

## View Controller

Data Controller  
Method

**Delegate / Notification**

Data  
Controller  
Singleton

Google  
Firebase  
Server

Azure  
AWS  
?



**“Nothing Lasts Forever”**



Custom Vision Service (Microsoft Azure)

https://azure.microsoft.com/en-us/services/cognitive-services/custom-vision-service/

Microsoft Azure

Contact Sales 080-822-1580 Search My account Portal Help

Why Azure Solutions Products Documentation Pricing Training Marketplace Partners Support Blog More Free account >

Home > Products > Cognitive Services > Custom Vision

**Custom Vision** PREVIEW

Visual Intelligence made easy

Get started >

Use with subscription >

Explore Custom Vision Service: Documentation Pricing Try Custom Vision Service Purchase subscription Roadmap

Easily customize your own state-of-the-art computer vision models for your unique use case. Just upload a few labeled images and let Custom Vision Service do the hard work. With just one click, you can export trained models to be run on device or as Docker containers.



<https://azure.microsoft.com/en-us/services/cognitive-services/custom-vision-service/>



# Cognitive Services 가격 - Custom Vision Service

[미리 보기](#)

자신만의 사용 사례에 맞는 가장 종합적인 컴퓨터 비전 모델을 쉽게 만들 수 있습니다.

- ✓ 초기 배포 없음
- ✓ 솔루션 오류 없음
- ✓ 사용을 학습한 요금 차별

[평가판 >](#)

필터: [Custom Vision 개요](#) [설명서](#) [계산기](#)

API 선택:

Custom Vision

지역:

미국 중남부

통화:

한국 원(₩)

Custom Vision Service를 통해 사용자 지정된 이미지 분류자를 간편하게 만드려고 구체화하여 이미지의 특정 패턴을 인식할 수 있습니다. 하늘 기계 학습을 통해 분류자를 학습시켜 필요한 작업(예: 제품 이미지 분류 또는 웹 사이트의 콘텐츠 필터링)을 인식할 수 있습니다. 레이블이 지정된 이미지를 업로드하고 나머지는 Custom Vision Service에게 맡기세요.

## 가격 정보

아래 가격에는 미리 보기 할인이 반영되어 있습니다.

제품	기능	가격
무료	프로젝트 2개 프로젝트당 학습 이미지 5,000개 매월 10,000개	₩0
표준	프로젝트 100개 업로드, 학습 및 매월 프로젝션	1,000개의 프로젝션당 ₩1,124.65
	이미지 저장소(각 최대 6MB)	월별 1000개 이미지당 ₩380.60/개



Custom Vision - Microsoft Azure

Custom Vision - Projects

https://customvision.ai/projects

Custom Vision

outlook.com

Switch directories

You are currently signed into 'outlook.com' directory. You have other directories you can switch to.

Switch directory

Projects

NEW PROJECT

Create your first project!

?

https://customvision.ai

Custom Vision - Microsoft Azure

Custom Vision : Projects

https://customvision.ai/projects

Custom Vision

Switch directories

You are currently signed into 'outlook'

Switch directory

Projects

NEW PROJECT

Create

Create new project

Name\*  
Food

Description  
Core Mt. Trial

Project Types ⓘ  
 Classification  
 Object Detection (preview)

Classification Types ⓘ  
 Multilabel (Multiple tags per image)  
 Multiclass (single tag per image)

Domains ⓘ  
 General  
 Food  
 Landmarks  
 Retail  
 Adult  
 General (compact)  
 Landmarks (compact)  
 Retail (compact)

Cancel Create project

Custom Vision Feed - Training

https://customvision.ai/projects/da8f8a006-5470-42e7-8321-17fa010120fa/manage

Training Images Performance Predictions Train Quick Test Help ?

Add images Delete Tag images Select all

Iteration Workspace

Tags +

Tagged Untagged

Showing: all tagged images

Search for

Looks like you don't have any images here!

Go ahead and browse for images to upload to your project, tag them, and they will be ready to be trained.

Add images

JPG, JPEG, BMP format, up to 6 MB per image

?



Custom Vision Studio - Microsoft Azure

Custom Vision Food - Training

https://customvision.ai/projects/da8f8a006-5470-42e7-8321-17ea5106120a/manage

Training Images Performance Predictions Train Quick Test Help

Food Filter Iteration Workspace Tags + Tagged Untagged Showing: all tagged images Search for

Add images

Image upload

Add Tags Uploading Summary

10 images will be added.

Add some tags to this batch of images...

My Tags Add a tag and press enter

Upload 10 files ?

The screenshot shows the Microsoft Custom Vision Studio interface for training a food recognition model. The main navigation bar includes 'Training Images', 'Performance', 'Predictions', 'Train', 'Quick Test', 'Help', and user profile icons. On the left, there's a sidebar with 'Food' selected, 'Filter', 'Iteration', and a 'Workspace' dropdown. Below that is a 'Tags' section with 'Tagged' (selected) and 'Untagged' tabs, showing 'Showing: all tagged images'. A search bar is also present. The central area is titled 'Add images' and contains a 'Image upload' modal. The modal has three tabs: 'Add Tags' (selected), 'Uploading', and 'Summary'. It displays 10 thumbnail images of various dishes. Below the thumbnails, text says '10 images will be added...' and 'Add some tags to this batch of images...'. A 'My Tags' input field with placeholder 'Add a tag and press enter' is shown. At the bottom right of the modal is a blue 'Upload 10 files' button. A question mark icon is located at the bottom right of the main interface.



Custom Vision Studio - Microsoft Azure

Custom Vision Food - Training

https://customvision.ai/projects/da8f8a006-5470-42e7-8321-17ea5106120a/manage

Training Images Performance Predictions Train Quick Test Help

Food Filter Iteration Workspace Tags Tagged Untagged Showing: all tagged images Search for

Add images

Image upload

Add Tags Uploading Summary

10 images will be added.

Add some tags to this batch of images...

My Tags

Upload 10 files

Done! 10 images will be ready to be trained.

?

The screenshot shows the Microsoft Custom Vision Studio interface for training a food recognition model. The main dashboard has tabs for 'Training Images', 'Performance', and 'Predictions'. A green 'Train' button is visible. On the left, there's a sidebar with 'Food' selected, 'Filter', 'Iteration', and a dropdown for 'Workspace'. Below that is a 'Tags' section with 'Tagged' (selected) and 'Untagged' buttons, showing 'Showing: all tagged images' and a search bar. A modal window titled 'Image upload' is in the foreground, showing a progress bar at 'Uploading' and 10 food-related images. It also has a 'Summary' tab and a note about adding tags. At the bottom of the modal is a blue 'Upload 10 files' button. The background shows a large blue triangle icon.

Custom Vision Studio - Microsoft Azure

Custom Vision Feed - Training

https://customvision.ai/projects/da8f8a006-5470-42e7-8321-17ea5106120a/manage

Training Images Performance Predictions Train Quick Test Help ?

Add images Delete Tag images Select all

Tags +

Showing:

Search for

10

Image upload

Add Tags Uploading Summary

10 images uploaded successfully

Done

?

The screenshot shows the Microsoft Custom Vision Studio interface for training a model. The main tab is 'Training Images'. A modal window titled 'Image upload' is open, showing a progress bar with three steps: 'Add Tags', 'Uploading', and 'Summary'. The 'Uploading' step is highlighted with a green bar indicating success: '10 images uploaded successfully'. Below the bar is a 'Done' button. In the background, the 'Training Images' section lists 10 tagged images. On the left, there's a sidebar with 'Tags' and a search bar.

Custom Vision Food - Training

https://customvision.ai/projects/da8f8a006-5470-42e7-8331-17ea510612fa/manage

Training Images Performance Predictions Train Quick Test

Add images Delete Tag images Select all

Image upload

Uploading

10 images uploaded successfully

Done

Food

Filter

Iteration

Workspace

Tags

Tagged Untagged

Showing:

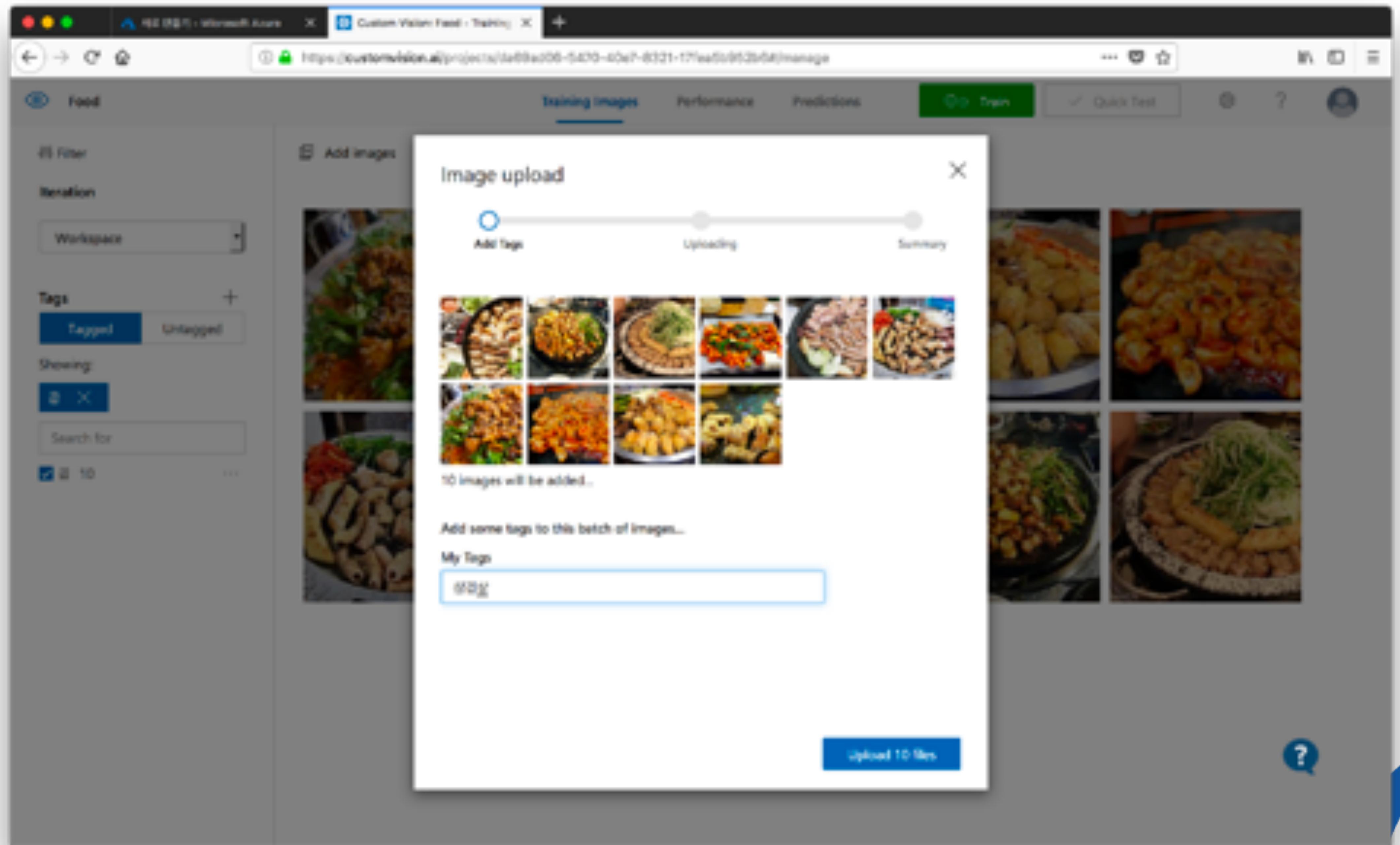
Search for

10

?

?

Custom Vision Food logo



Custom Vision Studio - Training

https://customvision.ai/projects/da7f8a006-5470-42e7-8321-17ea510612fa/manage

Training Images Performance Predictions Train Quick Test Help

Food

Add images

Image upload

Add Tags Uploading Summary

Showing: 100 X 100 X

Search for

Tags: Tagged Untagged

Showing: 100 X 100 X

Search for

My Tags: 食物

10 images will be added.

Add some tags to this batch of images...

Upload 10 files

?

The screenshot shows the Microsoft Custom Vision Studio interface for training a food recognition model. The main workspace displays a grid of food images, with two specific images highlighted in the foreground. A modal window titled 'Image upload' is open, showing a progress bar at 'Uploading'. It contains a grid of 10 images of various dishes. Below the images, text indicates '10 images will be added...' and a placeholder 'Add some tags to this batch of images...'. A 'My Tags' input field contains the tag '食物'. At the bottom right of the modal is a blue button labeled 'Upload 10 files'. The overall interface is clean and modern, with a dark header and light-colored cards for the workspace.

Custom Vision Food - Training

https://customvision.ai/projects/da8f8a006-5470-42e7-8321-17fa5f06120a/manage

Food

Add images

Image upload

Add Tags Uploading Summary

Showing: 13 images will be added...

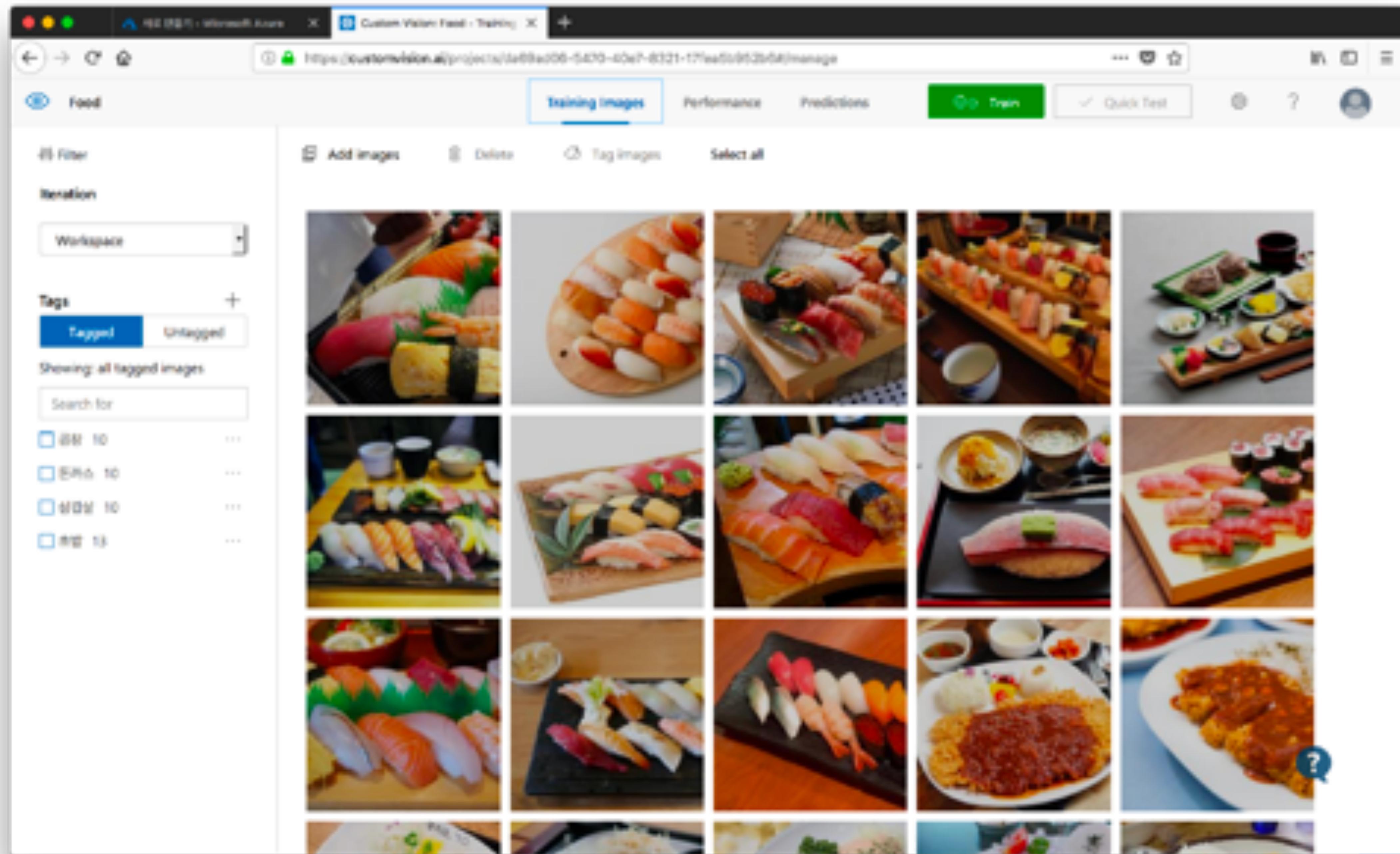
Add some tags to this batch of images...

My Tags: 食物

Upload 13 files

The screenshot shows a Microsoft Azure Custom Vision interface for training a food recognition model. A modal window titled 'Image upload' is open, showing a grid of 13 images of various foods like sushi, fried chicken, and pasta. Below the images, a message says '13 images will be added...' and 'Add some tags to this batch of images...'. A 'My Tags' input field contains the tag '食物'. At the bottom right of the modal is a blue button labeled 'Upload 13 files'. The background shows a blurred view of the 'Food' workspace, which includes sections for Tags, Filter, Iteration, and Workspace.





Custom Vision Feed - Performance

Iterations

Probability Threshold: 100%

Iteration 1

Training...

Last checked: 2018. 7. 26. 오전 4:10:11

Feed Training Predictions Train Quick Test



Custom Vision Feed - Performance

Iterations: 0

Probability Threshold: 100%

Iteration 1

Trained : moments ago  
with General (compact) domain

Precision: 97.2%

Recall: 85.7%

Performance Per Tag

Tag	Precision	Recall
坐垫	100.0%	80.0%
沙发	100.0%	91.7%

Custom Vision logo

Custom Vision Feed - Performance

Iterations: 0

Probability Threshold: 100%

Iteration 1

Trained : moments ago  
with General (compact) domain

Precision: 97.2%

Recall: 85.7%

Performance Per Tag

Tag	Precision	Recall
标签 A	100.0%	80.0%
标签 B	100.0%	91.7%
标签 C	100.0%	88.9%

Custom Vision logo

Custom Vision Feed - Performance

Choose your platform

iOS

CoreML

iOS 11

TF

TensorFlow

Android

ONNX

ONNX

Windows ML

Custom Vision Feed - Performance

Iterations: 0  
Probability Threshold: 100%

Iteration 1

Trained: 1 minutes ago  
with General (compact) domain

Performance

Custom Vision Feed - Performance

Training Images Performance Predictions

Prediction URL Make default Delete Export

Iteration 1

Finished training on 2018-7-26, 5:08:41:022 using General (compact) domain  
Classification type: Multilabel (Multiple tags per image)

Choose your platform

iOS CoreML

Export

How to use?

CoreML documentation  
Sample code  
Licenses

Tag	Precision	Recall
车	100.0%	80.0%
行人	100.0%	91.7%
自行车	100.0%	80.8%

?

Custom Vision Feed - Performance

Iterations: 0  
Probability Threshold: 100%

Iteration 1

Trained: 1 minutes ago  
with General (compact) domain

Performance

Custom Vision Feed - Performance

Training Images Performance Predictions

Prediction URL Make default Delete Export

Iteration 1

Finished training on 2018-7-26, 5:08:41:022 using General (compact) domain  
Classification type: Multilabel (Multiple tags per image)

Choose your platform

iOS CoreML

Download

How to use?

CoreML documentation  
Sample code  
Licenses

Tag	Precision	Recall
车	100.0%	80.0%
人	100.0%	91.7%
狗	100.0%	80.8%

?

CustomVision | Build CustomVision: Succeeded | Today at 11:18 4/23

CustomVision > CustomVision > Foods.mimodel

Machine Learning Model  
Name: Foods  
Type: Neural Network Classifier  
Size: 2.8 MB  
Author: unknown  
Description: description not included  
License: unknown

Model Class  
Foods < 0  
Automatically generated Swift model class

Model Evaluation Parameters

Name	Type	Description
Inputs		
data	Image (Color 227 x 227)	
Outputs		
loss	Dictionary (String → Double)	
classified	String	

Identity and Type  
Name: Foods.mimodel  
Type: Default - CoreML Model  
Location: Relative to Group  
Foods.mimodel  
Full Path: /Users/medspark/Downloads/cognitive-services-ios-customvision-sample-master/CustomVision/Foods.mimodel

On-Demand Resource Tags  
Only resources are tagged

Localization  
Localize...

Target Membership  
CustomVision

+ Create

- Expense Touch Class - A Cocoa Touch class
- UIT Test Case Class - A class implementing a unit test
- UNIT Test Case Class - A class implementing a unit test





CustomVision



iPhone SE

CustomVision | Build CustomVision: BasicModel | Today at 10:08 AM



	File
	Edit
	Search
	Project
	Run
	Stop
	Archive
	Deployment
	Assistant
	Storyboard
	Assets
	LaunchScreen.storyboard
	Info.plist
	SublimeText.swift
	SublimeLabelLayer.swift
	Products

#### Machine Learning Model

Name: Foods

Type: Neural Network Classifier

Size: 3.9 MB

Author: unknown

Description: description not included

License: unknown

#### Model Class

Foods

Automatically generated Swift model class

#### Model Evaluation Parameters

Name	Type	Description
<b>Inputs</b>		
data	Image (Color 227 x 227)	
<b>Outputs</b>		
loss	Dictionary (String → Double)	
classified	String	

CustomVision | red\_iPhone\_X | Finished running CustomVision on iPhone SE

Foods.swift | No Selection

```
1 //  
2 // Foods.swift  
3 //  
4 // This file was automatically generated and should not be edited.  
5 //  
6  
7 import CoreML  
8  
9  
10 // Model Prediction Input Type  
11 @available(macOS 10.13, iOS 11.0, tvOS 11.0, watchOS 4.0, *)  
12 class FoodsInput : MLFeatureProvider {  
13  
14     /// data as color (CVPixelFormatType_32BGRA) image buffer, 227 pixels wide by 227 pixels  
15     high  
16     var data: CVPixelBuffer  
17  
18     var featureNames: Set<String> {  
19         get {  
20             return ["data"]  
21         }  
22     }  
23  
24     func featureValue(for featureName: String) -> MLFeatureValue? {  
25         if (featureName == "data") {  
26             return MLFeatureValue(pixelBuffer: data)  
27         }  
28         return nil  
29     }  
30  
31     init(data: CVPixelBuffer) {  
32         self.data = data  
33     }  
34  
35 // Model Prediction Output Type  
36 @available(macOS 10.13, iOS 11.0, tvOS 11.0, watchOS 4.0, *)  
37 class FoodsOutput : MLFeatureProvider {  
38  
39     /// loss as dictionary of strings to doubles  
40     let loss: [String : Double]  
41  
42     /// classlabel as string value  
43     let classlabel: String  
44  
45     var featureNames: Set<String> {  
46 }
```

Identity and Type

- Name: Foods.mlmodel
- Type: Default - CoreML Model
- Location: Relative to Group
- Foods.mlmodel
- Full Path: /Users/mehdiark/Downloads/cognitive-services-ios-customvision-sample-master/CustomVision/Foods.mlmodel

On Demand Resource Tags

Only resources are tagged

Localization

Localize...

Target Membership

- Customization

Expense Touch Class - A Cocoa Touch class

UIT Test Case Class - A class implementing a unit test

Unit Test Case Class - A class implementing a unit test



CustomVision [red\_iPhone\_X] Finished running CustomVision on iPhone SE

CustomVision > CustomVision > ViewController.swift > classificationRequest

```
CustomVision
  + CustomVision
    + ViewController
      - AppDelegate.swift
      - ViewController.swift
      - FoodModel.swift
      - FruitModel.swift
      - Main.storyboard
      - Assets.xcassets
      - LaunchScreen.storyboard
      - Info.plist
      - BubbleLayer.swift
      - BubbleLabelLayer.swift
    + Products
```

Find: model

10 matches + As Contains < > Done

```
11
12
13
14
15
16 class ViewController: UIViewController {
17
18     @IBOutlet weak var previewView: UIView!
19     @IBOutlet weak var stackView: UIStackView!
20     @IBOutlet weak var lowerView: UIView!
21
22     var previewLayer: AVCaptureVideoPreviewLayer!
23     let bubbleLayer = BubbleLayer(string: "")
24
25     let queue = DispatchQueue(label: "videoQueue")
26     var captureSession = AVCaptureSession()
27     var captureDevice: AVCaptureDevice?
28     let videoOutput = AVCaptureVideoDataOutput()
29     var unknownCounter = 0 // used to track how many unclassified images in a row
30     let confidence: Float = 0.7
31
32     // MARK: Load the Model
33     let targetImageSize = CGSize(width: 227, height: 227) // must match model data input
34
35     lazy var classificationRequest: VNRequest = {
36         do {
37             // Load the Custom Vision model.
38             // To add a new model, drag it to the Xcode project browser making sure that the "Target Membership" is checked.
39             // Then update the following line with the name of your new model.
40             let model = try VNCoreMLModel(for: FoodModel().model)
41             let classificationRequest = VNCoreMLRequest(model: model, completionHandler: self.handleClassification)
42             return classificationRequest
43         } catch {
44             fatalError("Can't load Vision ML model: \(error)")
45         }
46     }
47
48     // MARK: Handle image classification results
49
50     func handleClassification(request: VNRequest, error: Error?) {
51         guard let observations = request.results as? [VNClassificationObservation]
52             else { fatalError("unexpected result type from VNCoreMLRequest") }
53
54         guard let best = observations.first else {
55             fatalError("classification didn't return any results")
56         }
57
58         // Use results to update user interface (includes basic filtering)
```

Identity and Type

Name: ViewController.swift  
Type: Default - Swift Source  
Location: Relative to Group  
ViewController.swift  
Full Path: /Users/mehmetkarakaya/Downloads/cognitive-services-ios-customvision-sample-master/CustomVision/ViewController.swift

On Demand Resource Tags

Only resources are visible

Target Membership

CustomVision

Text Settings

Text Encoding: No Explicit Encoding  
Line Endings: No Explicit Line Endings  
Indent Using: Spaces  
Width: 4 Tab  
Wrap Lines

Open Touch Class - A Cocoa Touch class

Unit Test Case Class - A class implementing a unit test

Unit Test Case Class - A class implementing a unit test



```
25  
26 let queue = DispatchQueue(label: "videocapture")  
27 var captureSession = AVCaptureSession()  
28 var captureDevice: AVCaptureDevice?  
29 let videoOutput = AVCaptureVideoOutput()  
30 var unknownCounter = 0 // used to track how many unclassified images in a row  
31 let confidence: Float = 0.7  
32  
33 // MARK: Load the Model  
34 let targetImageSize = CGSize(width: 227, height: 227) // must match model data input.  
35  
36 lazy var classificationRequest: VNRequest = {  
37     do {  
38         // Load the Custom vision model.  
39         // To add a new model, drag it to the Xcode project browser making sure that the "Target  
40         // Membership" is checked.  
41         // Then update the following line with the name of your new model.  
42         let model = try VNCoreMLModel(for: Foods().model)  
43         let classificationRequest = VNClassificationRequest(model: model, completionHandler:  
44             self.handleClassification)  
45         return [classificationRequest]  
46     } catch {  
47         fatalError("Can't load Vision ML model: \(error)")  
48     }  
49 }()
```

CustomVision

CustomVision

Finished running CustomVision on iPhone 11

CustomVision

CustomVision

Foods.mlmodel

CustomVision

CustomVision

AppDelegate.swift

ViewController.swift

Fruit.mlmodel

**Foods.mlmodel**

Main.storyboard

Assets.xcassets

Launchscreen.storyboard

Info.plist

SubtitlesLayer.swift

SubtitlesLabelLayer.swift

Products

Machine Learning Model

Name: Foods

Type: Neural Network Classifier

Size: 3.9 MB

Author: unknown

Description: description not included

License: unknown

Model Class

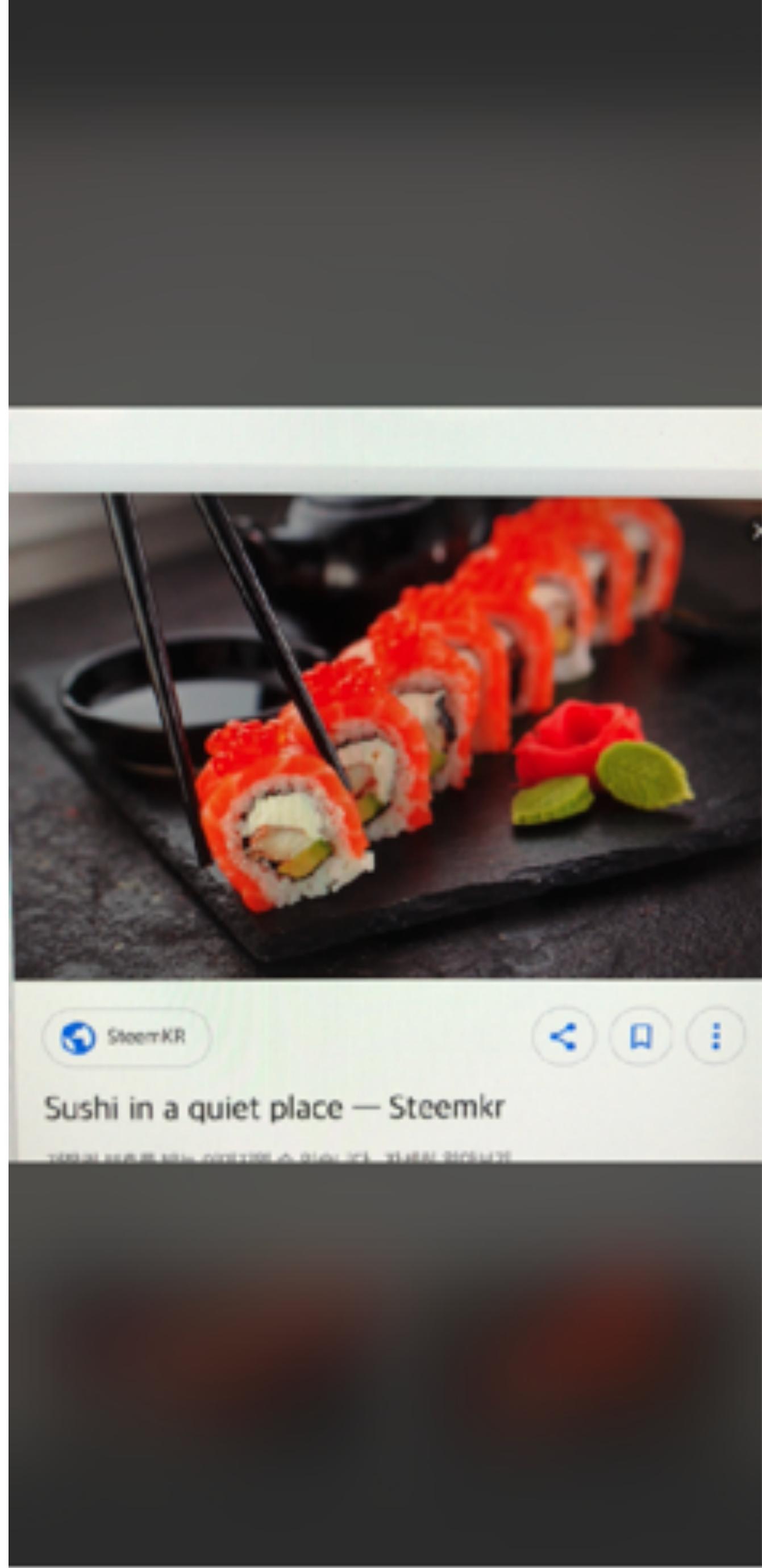
Foods

Automatically generated Swift model class

Model Evaluation Parameters

Name	Type	Description
Inputs		
data	Image (Color 227 x 227)	
Outputs		
loss	Dictionary (String → Double)	
predictedLabel	String	

```
35 var queue = DispatchQueue.main // for UI updates
36 var captureSession = AVCaptureSession()
37 var captureDevice: AVCaptureDevice?
38 let videoOutput = AVCaptureVideoDataOutput()
39 var unknownCounter = 0 // used to track how many unlabeled images in a row
40 let confidence: Float = 0.7
41
42 // MARK: Load the Model
43 let targetImageSize = CGSize(width: 227, height: 227) // must match model data input
44
45 lazy var classificationRequest: VNRequest = {
46     do {
47         // Load the Custom Vision model.
48         // To add a new model, drag it to the Xcode project browser making sure that the "Target Membership" is checked.
49         // Then update the following line with the name of your new model.
50         let model = try VNCoreMLModel(for: Food().model)
51         let classificationRequest = VNCoreMLRequest(model: model, completionHandler:
52             self.handleClassification)
53         return classificationRequest
54     } catch {
55         fatalError("Can't load vision ML model: \(error)")
56     }
57 }
58
59 // MARK: Handle image classification results
```

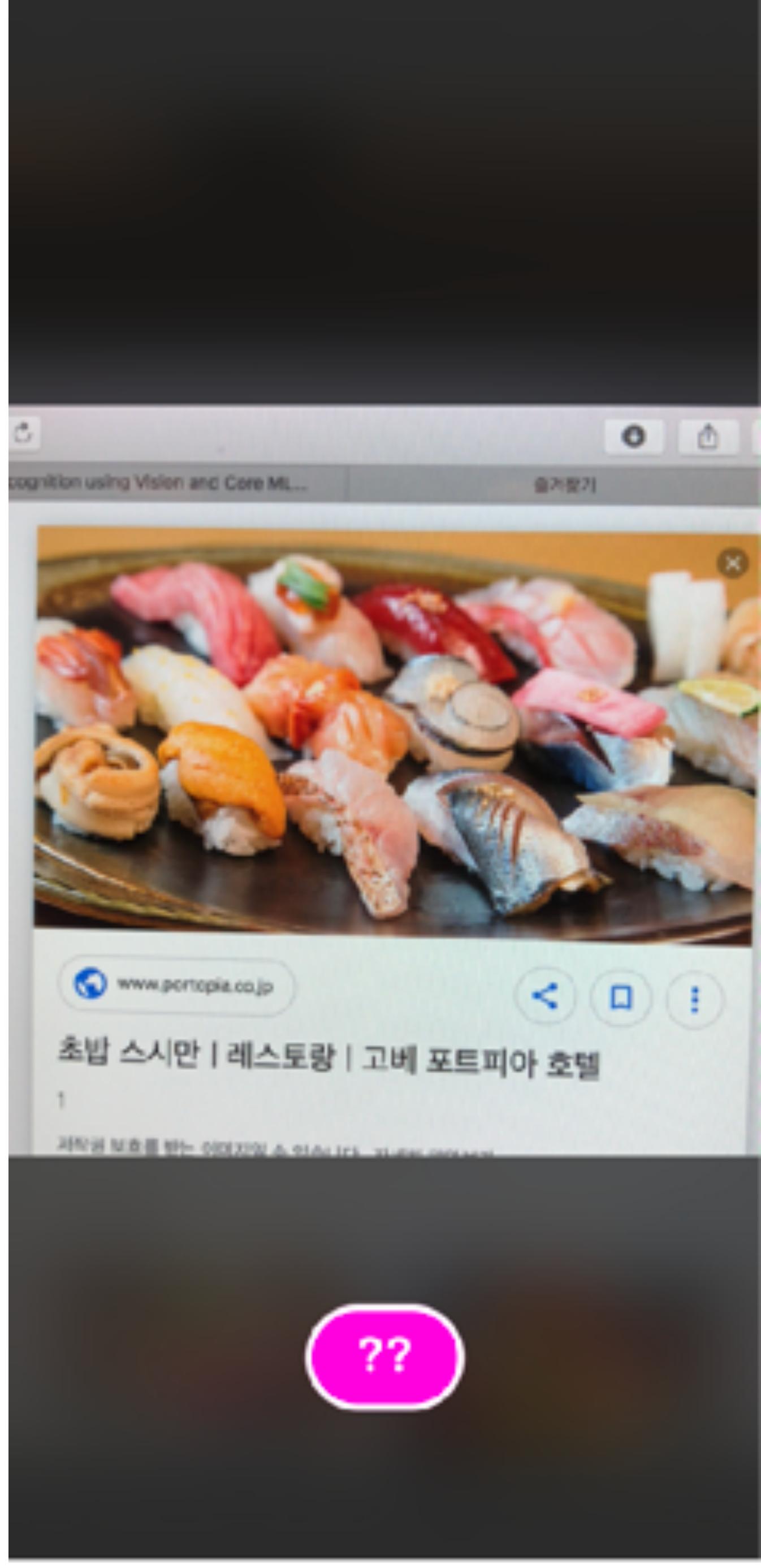


 SteemKR



Sushi in a quiet place — Steemkr





Custom Vision Food - Training

https://customvision.ai/projects/da8fb400-5470-42e7-8321-17ea5f0672fa/manage

Food

Training Images Performance Predictions Train Quick Test

Add images Delete Tag images Select all

Iteration Workspace

Tags Tagged Untagged

Showing: all tagged images

Search for

Giblet 10

Pork Belly 10

Pork Cutlet 10

Sushi 13

Custom Vision Feed - Performance

https://customvision.ai/projects/da8f8e00-5470-42e7-8321-17fa010120fa/performance

Feed Training Images Performance Predictions Train Quick Test

Iterations: 0 Prediction URL Make default Delete Export

Probability Threshold: 100%

Iteration 2  
Trained: moments ago  
with General (compact) domain

Iteration 1  
Trained: 26 minutes ago  
with General (compact) domain

Precision: 100.0% Recall: 61.1%

Performance Per Tag

Tag	Precision	Recall
Pork Cutlet	100.0%	75.0%
Pork Belly	100.0%	81.1%
Globe	100.0%	50.0%
Sushi	98.7%	58.3%

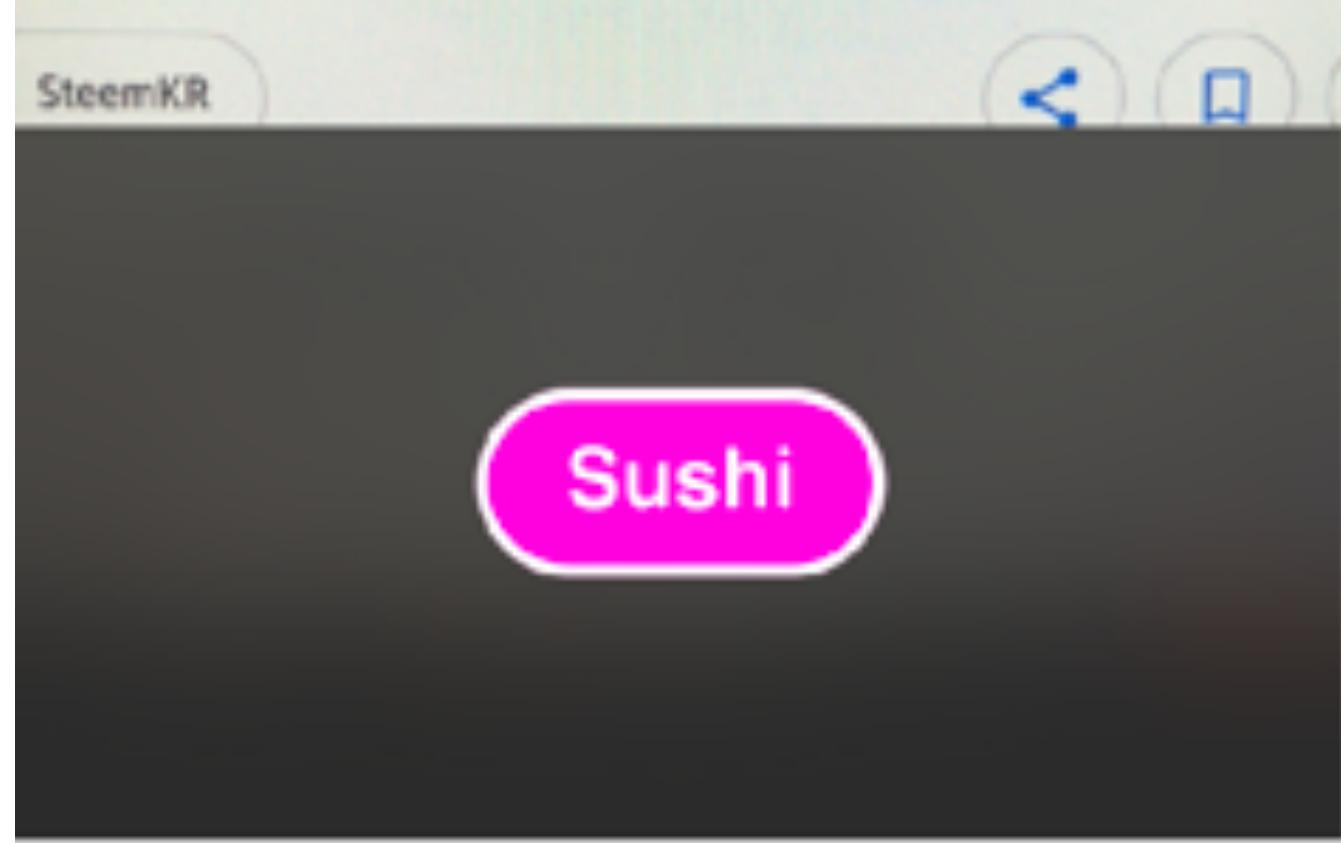
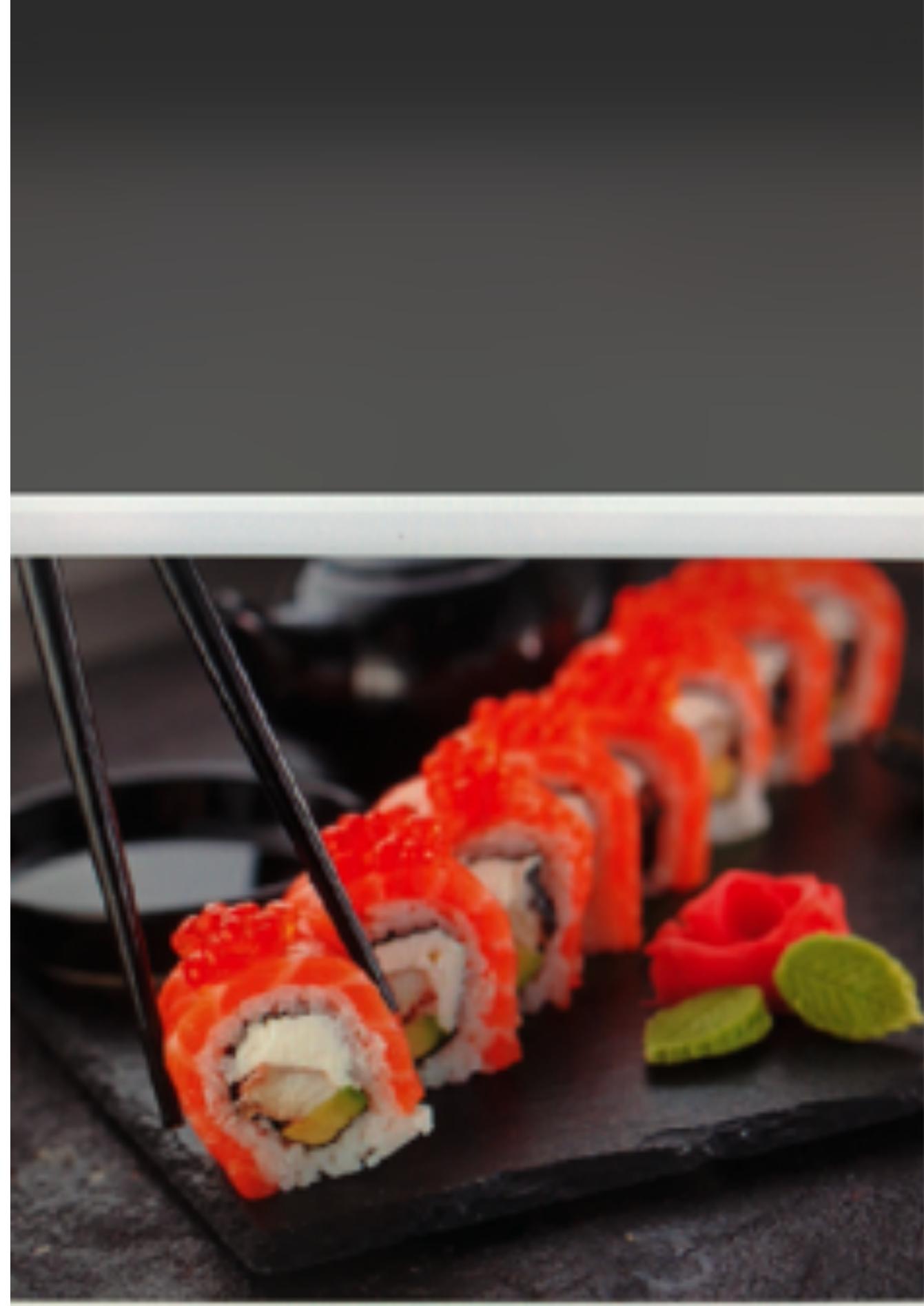
?





Sushi







Giblet







Giblet





gettyimages

Giblet

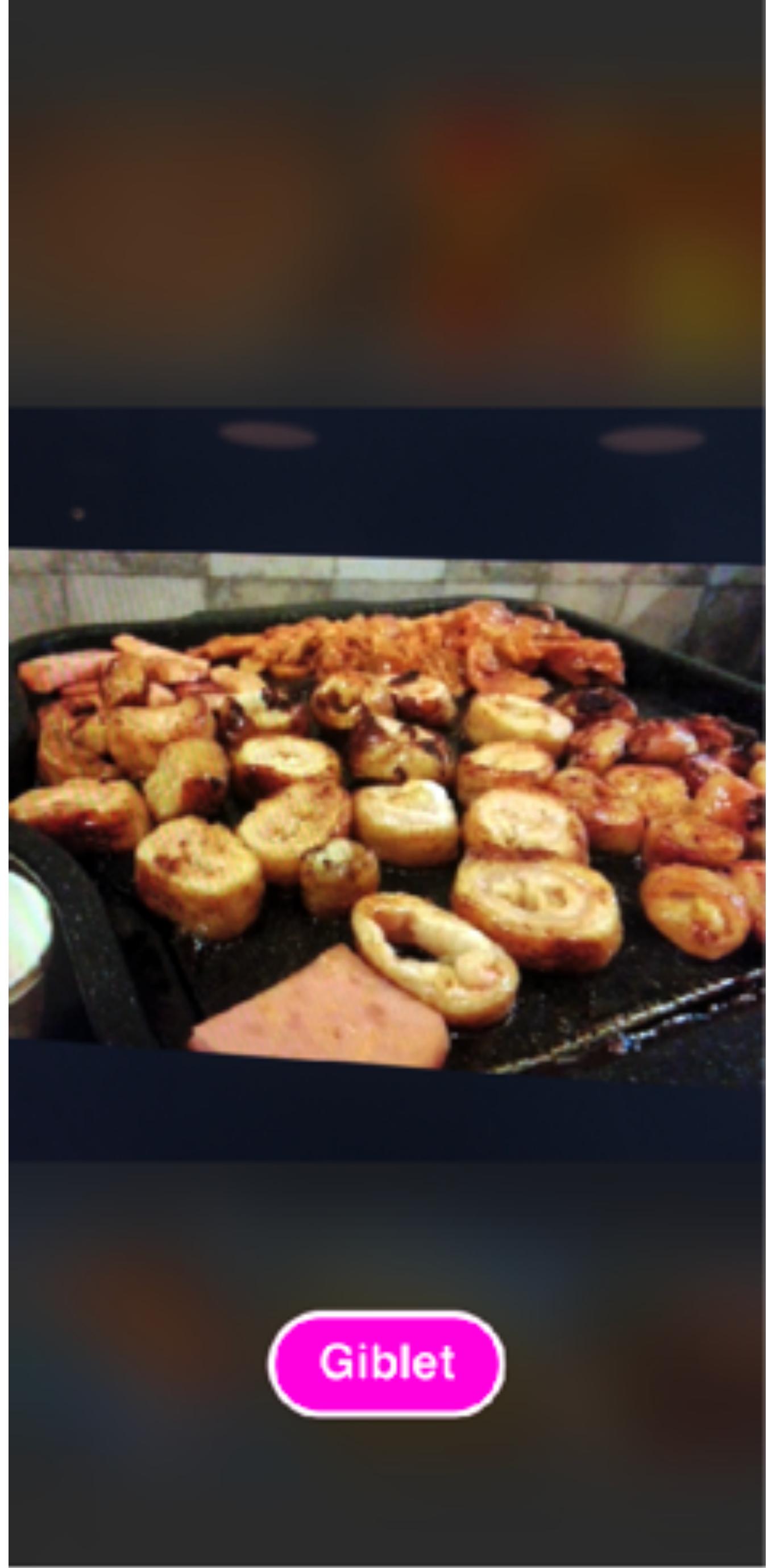






Giblet





Giblet

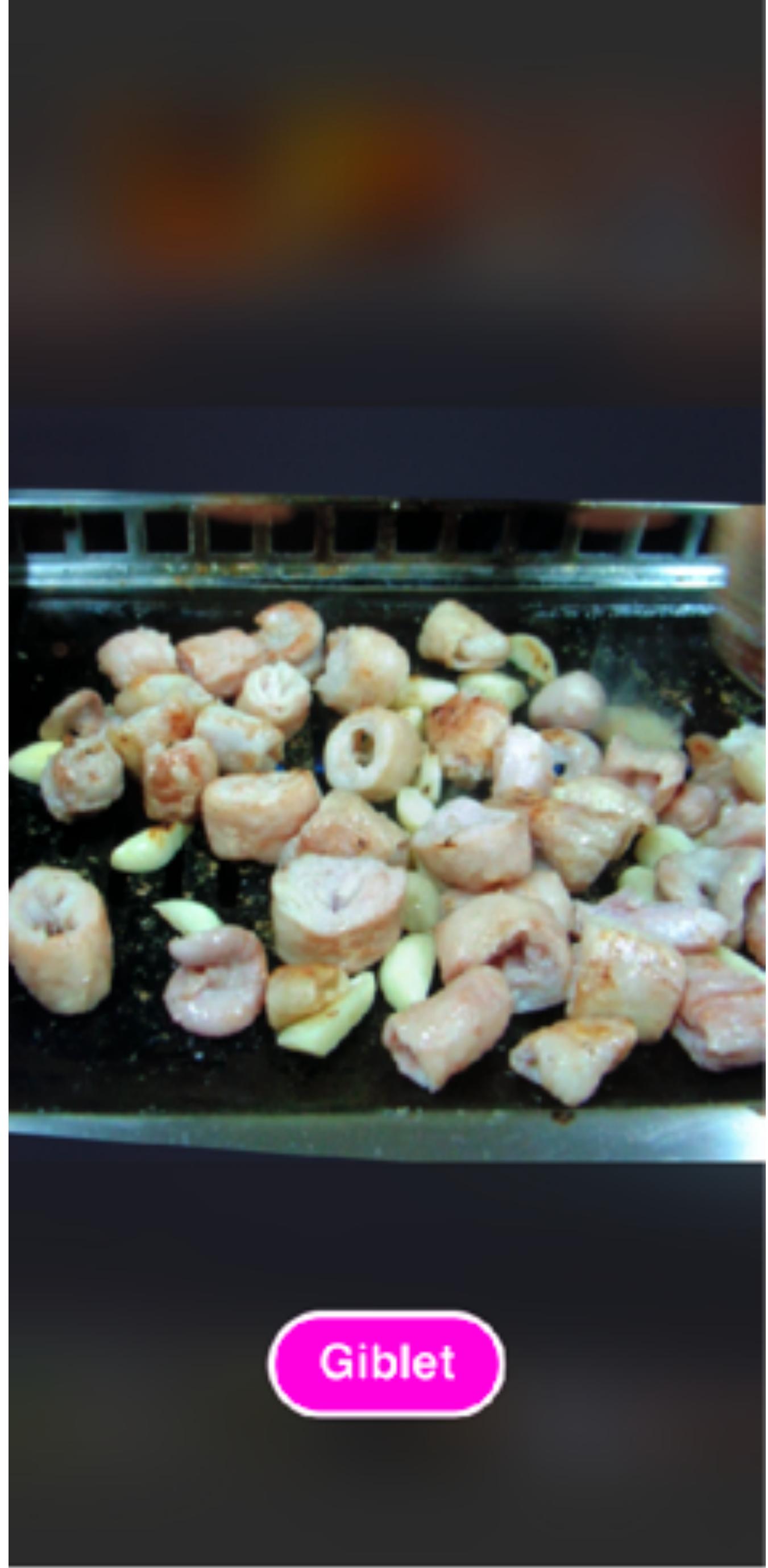


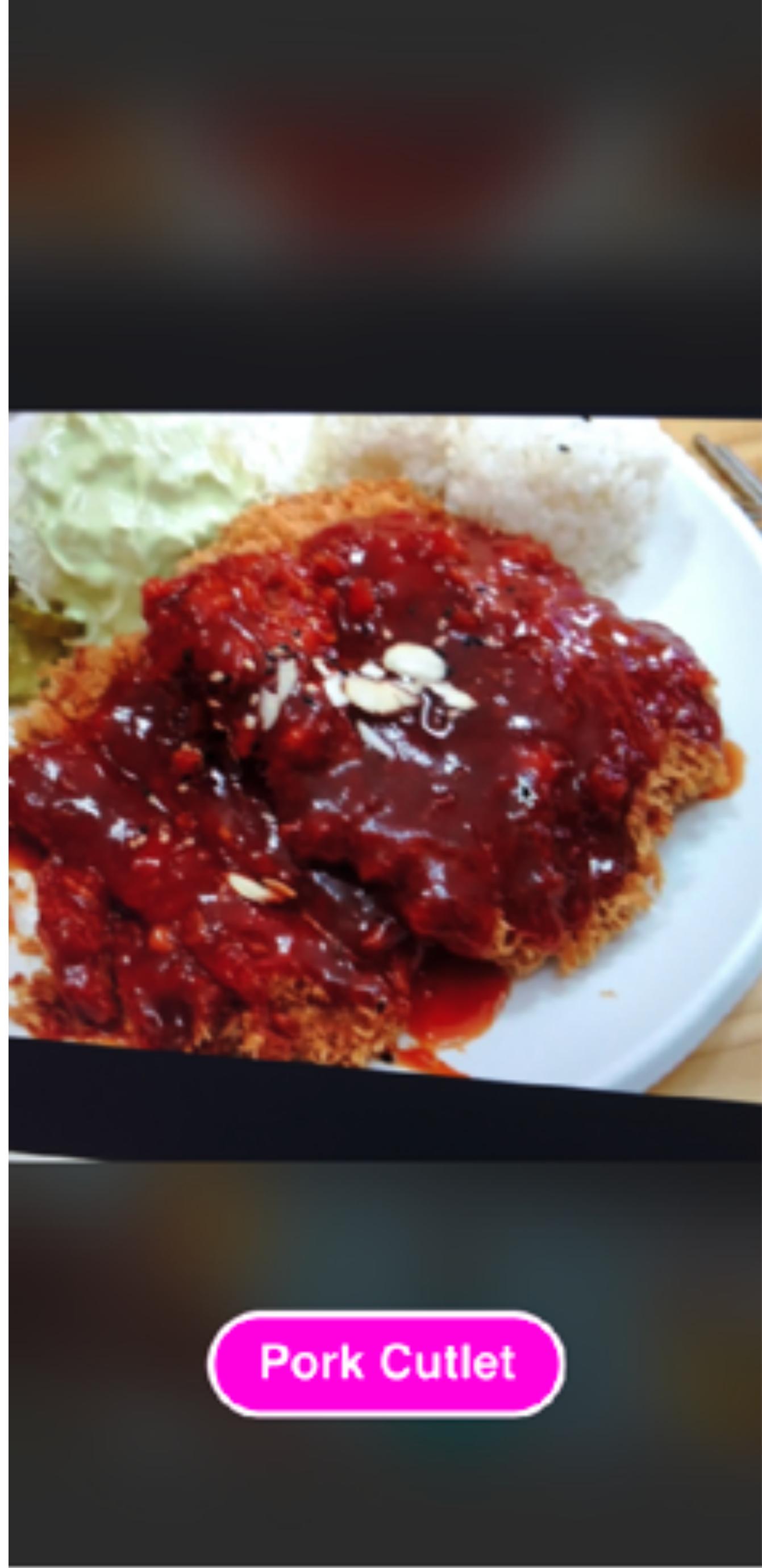


Giblet



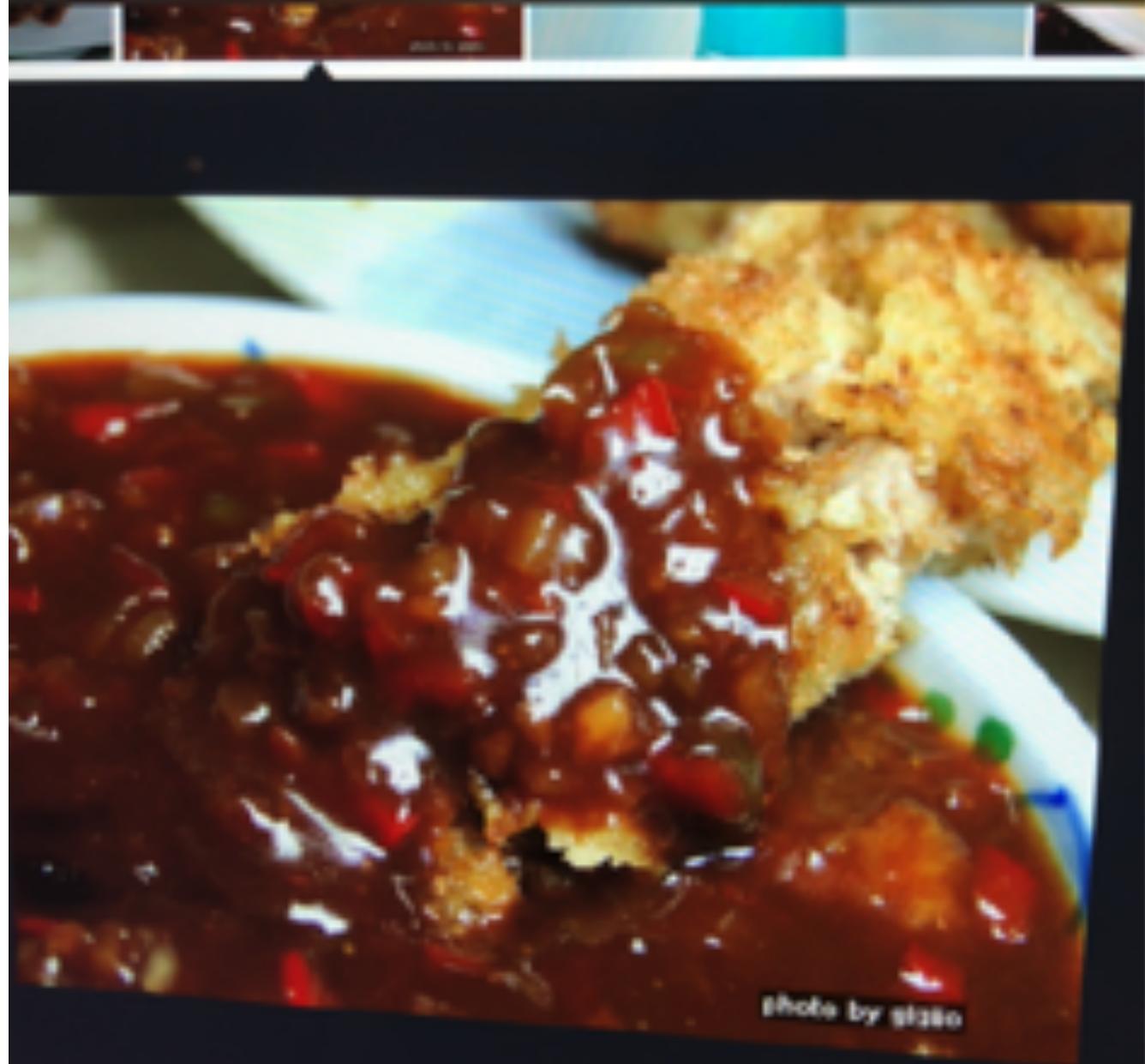






Pork Cutlet





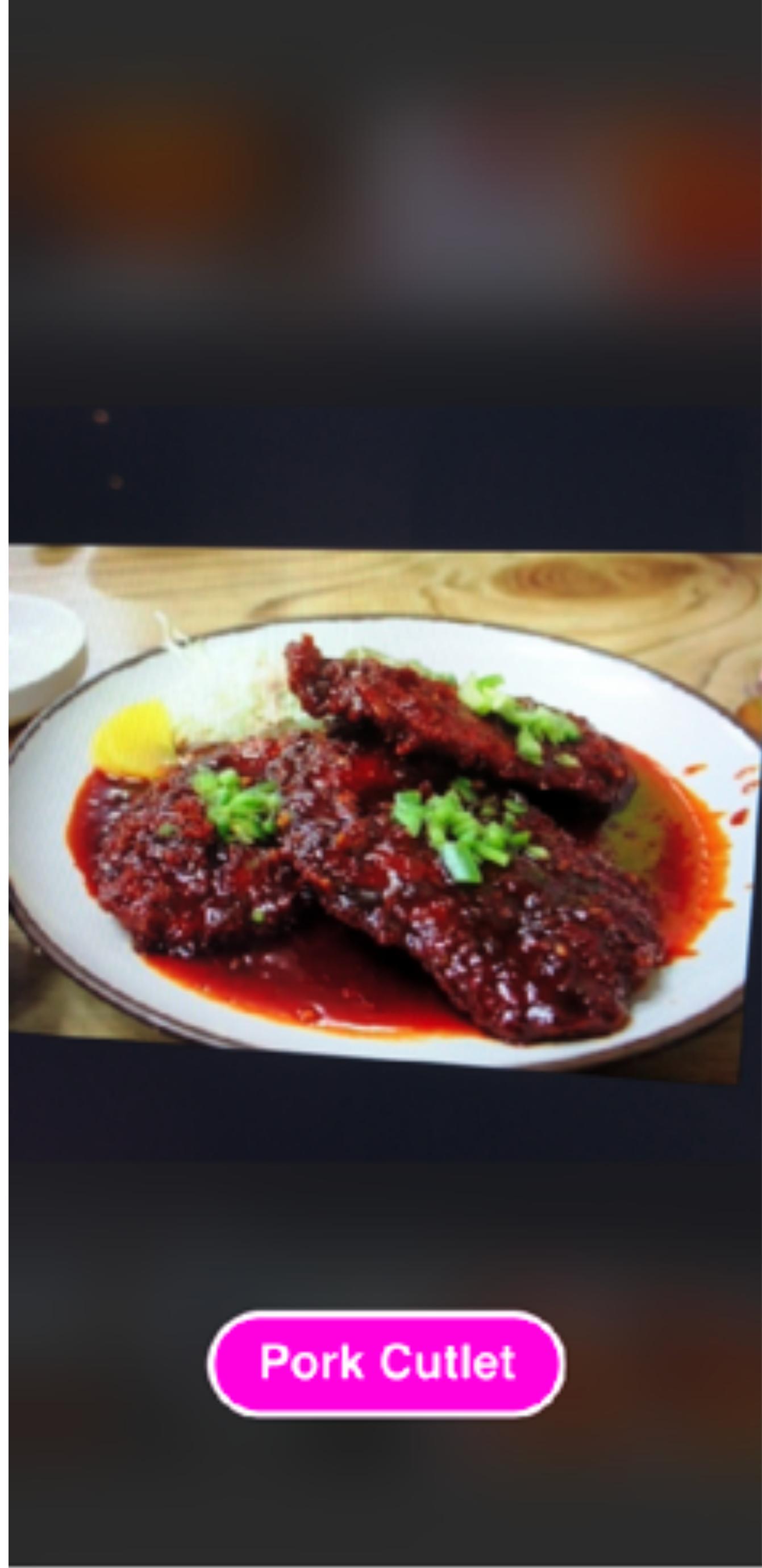
Pork Cutlet





Pork Cutlet





Pork Cutlet



# **Demo**

**Refactoring into a data controller structure**



redDoorOpen : Build redDoorOpen: Success! (Total of 12/12 files)

redDoorOpen.swift

```
1 //  
2 // DataController.swift  
3 // redDoorOpen  
4 //  
5 // Created by Jongwook Park on 22/11/2018.  
6 // Copyright © 2018 Jongwook Park. All rights reserved.  
7 //  
8  
9 import Foundation  
10 class DataController {  
11     static let sharedInstance = DataController()  
12  
13     private init() {  
14     }  
15  
16 }  
17
```

Running `readDoorOpen` on iPhone X

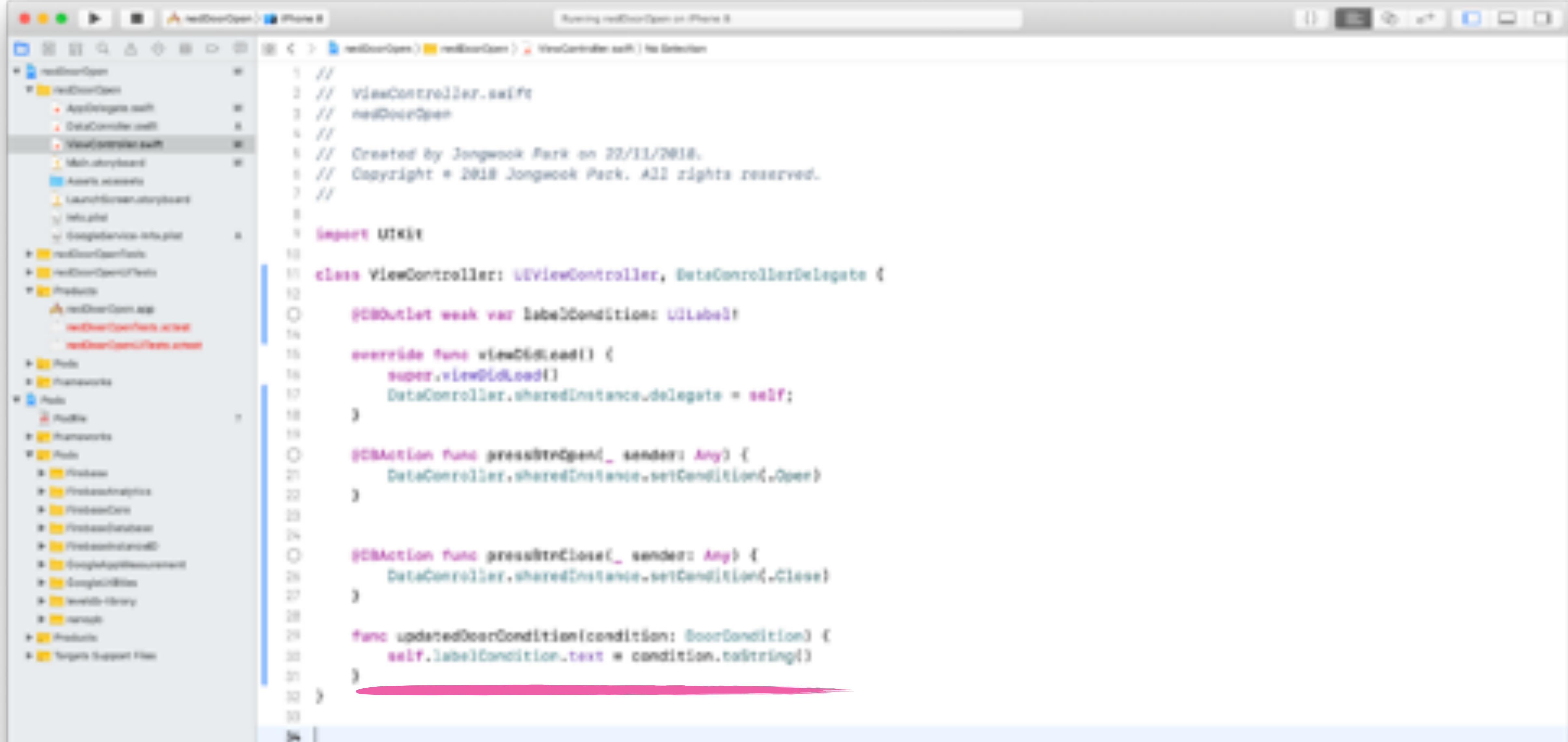
```
1 //  
2 // DataController.swift  
3 // readDoorOpen  
4 //  
5 // Created by Jongwook Park on 22/11/2018.  
6 // Copyright © 2018 Jongwook Park. All rights reserved.  
7 //  
8  
9 import Foundation  
10 import Firebase  
11  
12 enum DoorCondition {  
13     case Open  
14     case Close  
15     case Broken  
16  
17     func toString() -> String {  
18         var result: String = ""  
19  
20         switch self {  
21             case .Open:  
22                 result = "Open"  
23             case .Close:  
24                 result = "Close"  
25             case .Broken:  
26                 result = "Broken"  
27         }  
28  
29         return result  
30     }  
31  
32     static func convertConditionString(conditionString: String) -> DoorCondition {  
33         var result: DoorCondition = .Broken  
34  
35         switch conditionString {  
36             case "Open":  
37                 result = .Open  
38             case "Close":  
39                 result = .Close  
40             case "Broken":  
41                 result = .Broken  
42             default:  
43                 result = .Broken  
44         }  
45     }  
46 }
```

Running `readDoorOpen` on iPhone X

```
File Navigator Project Navigator Search Editor View Help
```

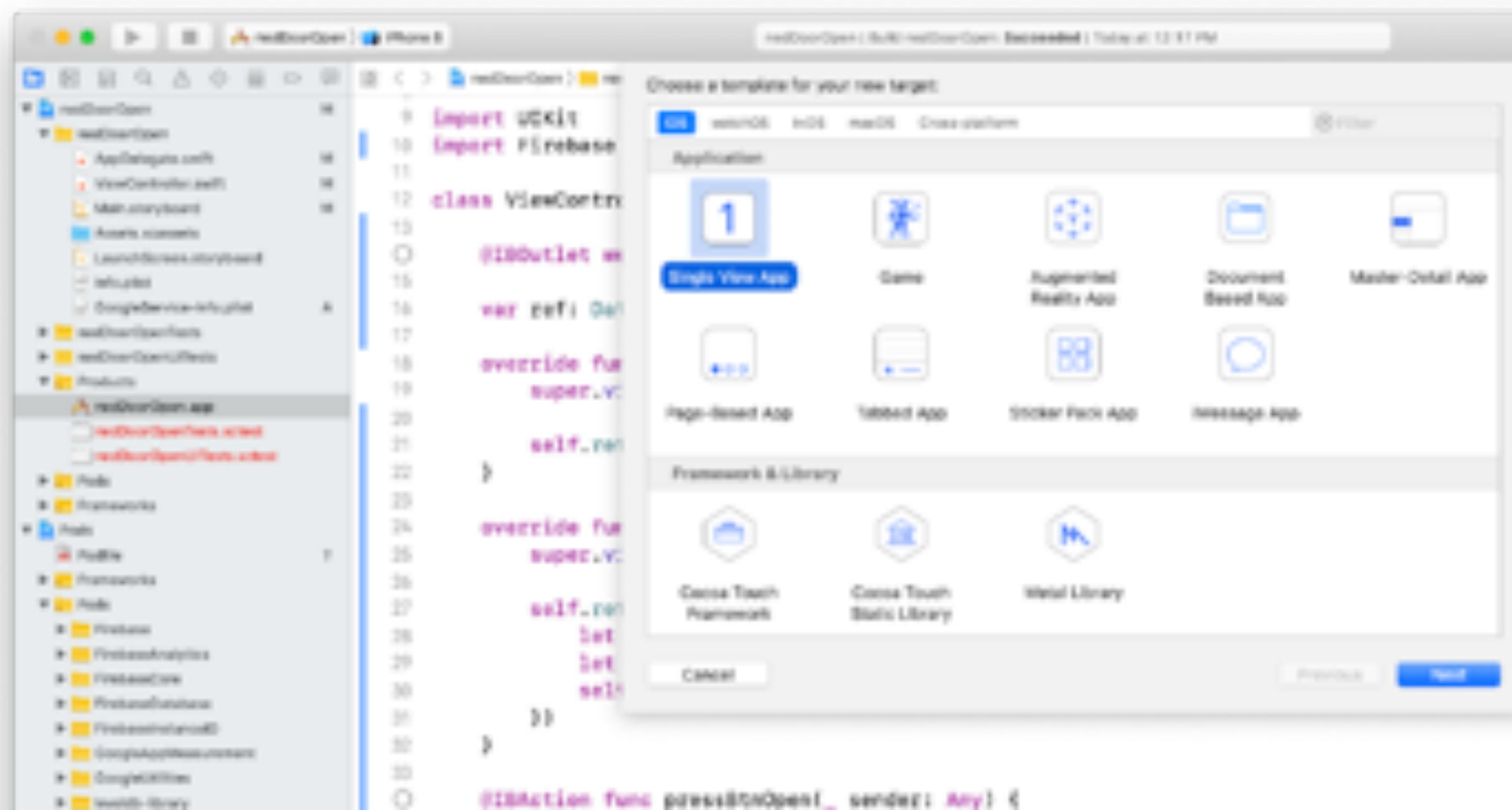
Project Navigator:

- + `readDoorOpen`
  - `readDoorOpen`
    - `Appdelegate.swift`
    - `DataController.swift`
    - `Viewcontroller.swift`
    - `Main.storyboard`
    - `Assets.xcassets`
    - `LaunchScreen.storyboard`
    - `Info.plist`
    - `GoogleService-Info.plist`
  - + `readDoorOpenTests`
  - + `readDoorOpenUITests`
  - + `Pods`
    - `Pods`
    - `Podfile`
  - + `Frameworks`
    - + `Pods`
      - `Pods`
      - `Podfile`
    - + `Frameworks`
    - + `Pods`
      - `Pods`
      - `Podfile`
  - + `Targets Support Files`



# 테스트 환경을 구성한다면?

- Target을 하나 더 만드세요



# CloudKit과 비교한다면?

- iOS만 생각한다면 클라우드킷
  - Apple ID로 사용자 인증
  - 테스트 환경 제공
- 서버비용이 많이 들면 Bear처럼 구독형 비지니스 모델
- 하지만 안드로이드 웹 포기는 현실적으로 어려움
- Social 기능 없이 개인전용이라면 개인용 iCloud 활용이 편리



# 잔소리

- Python도 좋지만 JavaScript 공부하세요
- 기본에 충실하세요
- 엉뚱한 장난이 차별화를 만들어요
- 내가 쓰지 않을 앱은 아무도 안써요



# 참고자료

- **Firebase Documents**
  - <https://firebase.google.com/docs/>
- **Firebase YouTube Channel**
  - <https://www.youtube.com/user/Firebase>
- **Design Patterns on iOS using Swift**
  - <https://www.raywenderlich.com>



# **Firebase**

## **Back-end as a Service**

