

Build Fast, Ship Faster: CI/CD for Indies

Rudrank Riyam

iOS Developer Relations Engineer, Codemagic



About

- Interned at **Apple** with Voice Control and macOS Siri team
- Previous: Developing for Apple Platforms and writing about it

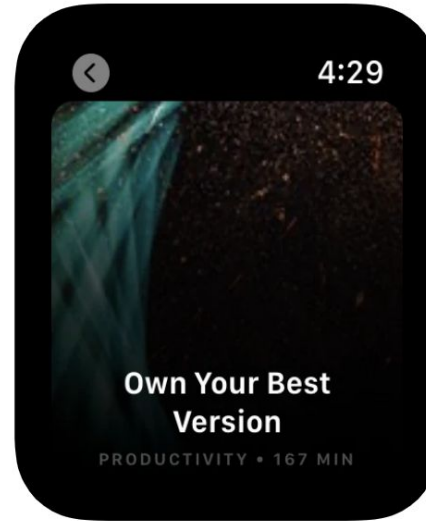
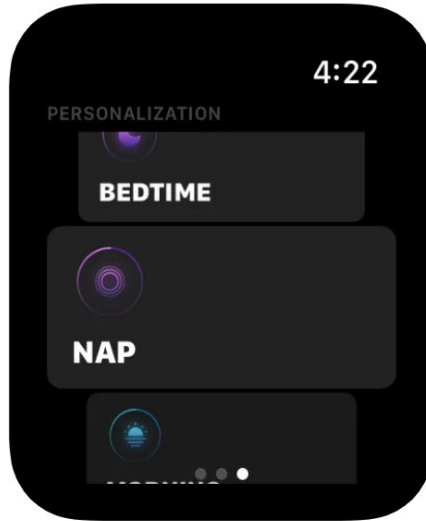
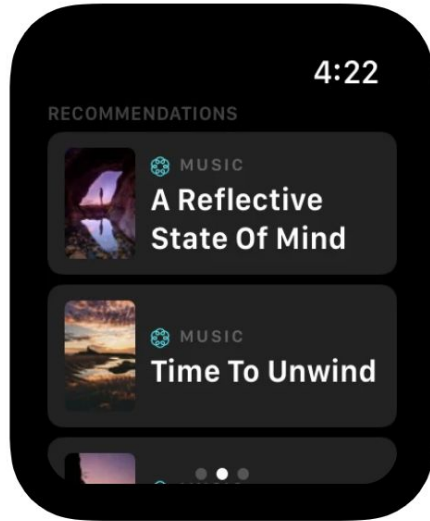


About

- Current: iOS Developer Relations Engineer, Codemagic
- Indie iOS developer & open-sourcing packages on **rryam**



Misery of Manual Builds



When I Have to Manually Archive an App Again

App Store Connect distribution options:

Re-sign "Euphonic iOS":

"Euphonic iOS" needs options to continue.

Uploading Euphonic iOS.ipa:

Uploading Euphonic iOS.ipa:

Review Euphonic

Euphonic

Locating and creating signing

Uploading

Uploading to App Store Connect...

Connect...

Cancel

Cancel

Cancel

Previous

Upload

Previous

Next

Previous

Next

Previous

Next

Previous

Next

Previous

Next

2023



MusadoraKit

Nominated Best Open-Source Project in
Hacking with Swift Awards

Overview

- What is CI/CD?
- Automation with Fastlane
- Configuring CI/CD for Your App
- Deploying apps to TestFlight and the App Store with ease
- Automating App Store screenshots
- Cost effectiveness as an Indie Developer

What is CI/CD?

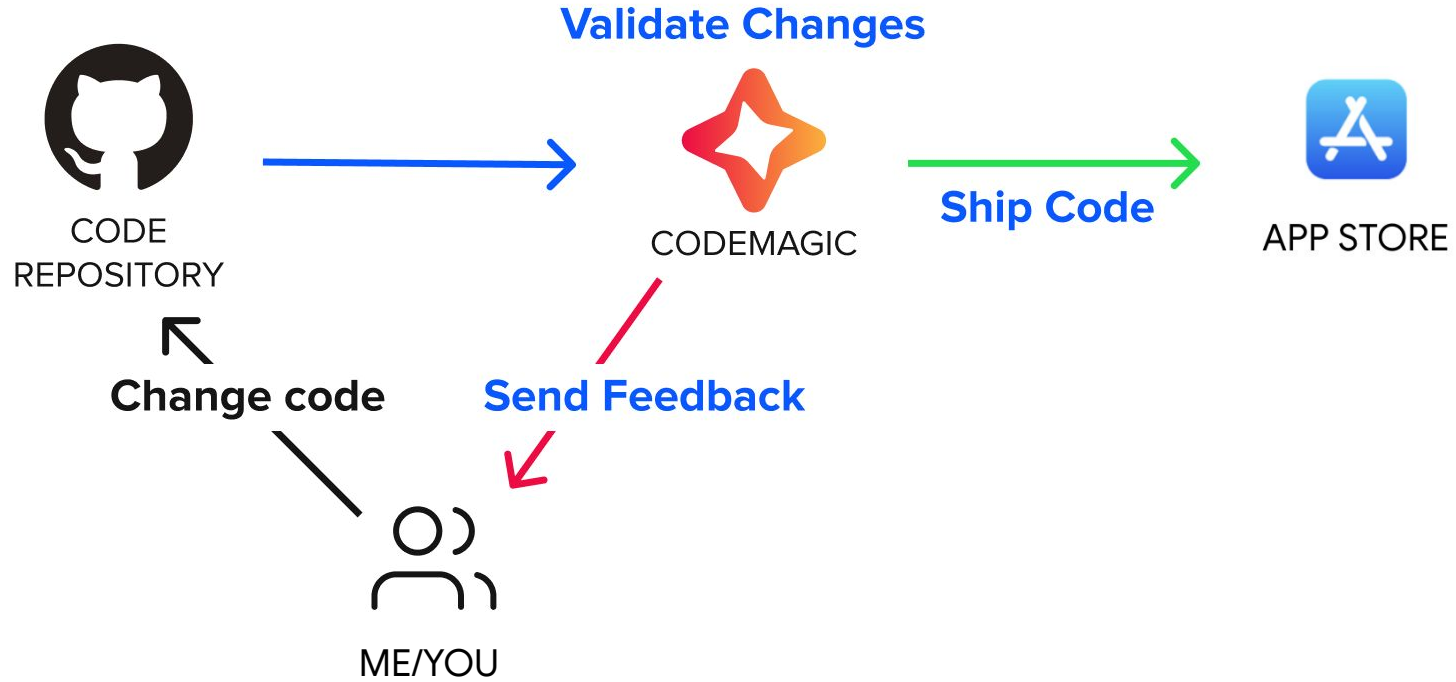
- Continuous Integration and Continuous Deployment.
- Set of practices and processes aiming to automate building, testing and deployment.
- Practices apply to any software development, including iOS development.

fastlane

Hello Josh 🍕

fastlane

- Simplify code signing
- Capture screenshots and manage app metadata
- Automate app deployment
- Run tests and generate reports
- Integrate with CI/CD platforms



Workflow Configuration



Euphonic

github.com/rudrankriyam/Euphonic



Start new build



Build overview

ID: 6448ac839aa1b29f6ca56325

Index: 96

Status: finished

Workflow: Euphonic iOS TestFlight from [codemagic.yaml](#)

Started by: Github webhook

Started: 7 minutes ago

Duration: 2m 15s

Machine: Mac mini M1

Branch: main

Commit: [cb356d1](#)

Artifacts

Euphonic_iOS.ipa [30.10 MB]

Euphonic_96_artifacts.zip [31.59 KB]

Click on the build steps for details.

Preparing build machine

31s



Fetching app sources

4s



Set up code signing identities

1s



Set up provisioning profiles settings on Xcode project

1s



Increment build number

3s



Build ipa for distribution

55s



Publishing

31s



Cleaning up

6s



Post processing

App Store distribution

3m 56s

Build Triggers

triggering:

events

- push
- tag
- pull_request

Environment

environment:

vars:

XCODE_PROJECT: "Euphonic.xcodeproj"

XCODE_SCHEME: "Euphonic iOS"

APP_ID: "6444817719"

xcode: 14.2

cocoapods: default

Code Signing

✦ scripts:

- name: Set up Provisioning Profiles

script: xcode-project use-profiles

Incrementing Build Number

- name: Increment Build Number

script: |

```
LATEST_BUILD_NUMBER=$(app-store-connect  
get-latest-build-number "$APP_ID")
```

```
agvtool new-version -all $((LATEST_BUILD_NUMBER + 1))
```

Build for Archiving

- name: Build ipa for distribution

script: |

xcode-project build-ipa \

--project Euphonic.xcodeproj \

--scheme "Euphonic iOS"

Deployment

publishing

app_store_connect:

auth: integration

submit_to_testflight: true

beta_groups:

- Alpha

submit_to_app_store: false

Deployment

publishing

app_store_connect:

auth: integration

submit_to_testflight: false

beta_groups:

- Alpha

submit_to_app_store: true

Notifications

publishing:

email:

recipients:

- rudrank_riyam@gmail.com

notify:

success: true

failure: true

Release Notes

```
[  
  {  
    "language": "en-US",  
    "text": "Hello there! This is an automated release at Deep  
Dish Swift 2023 for all the pizza lovers."  
  },  
  {  
    "language": "fr-FR",  
    "text": "Bonjour! Il s'agit d'une version automatisée de Deep  
Dish Swift 2023 pour tous les amateurs de pizza."  
  }  
]
```



Apps

Builds

Teams

Billing

Docs



Team: All

App: MusadoraKit

Workflow: All

Status: All

Labels: Exact label name

Branch: Exact branch name

Tag: Exact tag name

Apply filter

Clear



MusadoraKit: MusadoraKit Docs Update Workflow

main

14cffe "[skip ci] Update DocC Documentation"



Started: 3 hours ago

Duration: 1m 34s



MusadoraKit: MusadoraKit Docs Update Workflow

main

5424d4d "Update codemagic.yaml"



Started: a day ago

Duration: 2m 10s



MusadoraKit: Musadora TestFlight Workflow

main

5424d4d "Update codemagic.yaml"



Started: 2 days ago

Duration: 2m 16s

Musadora.ipa: 1.0 #42



MusadoraKit: MusadoraKit Workflow

main

5424d4d "Update codemagic.yaml"



Started: 2 days ago

Duration: 6m 52s



Apps



Builds



Teams



Billing



Docs



MusadoraKit

github.com/rryam/MusadoraKit

Start build



codemagic.yaml

Environment variables

Caching

Webhooks

Scheduled builds



Repository settings



musadorakit-update-docs (YAML)

Every Mon, Tue, Wed, Thu, Fri, Sat,
Sun at 00:00 UTC

main



Add new schedule

Euphonic
main

main

YoursViewModel

NowPlayingViewModel

Euphonic > Euphonic iOS > Now Playing > NowPlayingViewModel > addToQueue(_loadedTracks:)

Euphonic

release_notes

Fonts

MusadoraKit+

Euphonic tvOS

Euphonic iOS

Radio

Euphonic iOS

Artist

Search

Views

Album

Station

Song

Playlist

For You

Onboarding

Settings

Now Playing

NowPlayingBar

NowPlayingViewModel

NowPlayingBackgroundView

NowPlayingView

Extensions

Vibes

Yours

Tabs

Info

EuphonicIOSApp

ContentView

Assets

Preview Content

HomeView

AirplayView

CachedAsyncImage

Euphonic iOS

Products

Frameworks

1 //

2 // NowPlayingViewModel.swift

3 // iOS

4 //

5 // Created by Rudrank Riyam on 02/12/22.

6 //

7

8 import SwiftUI

9 import MusadoraKit

10 import UmeroKit

11

12 @MainActor class NowPlayingViewModel: ObservableObject {

13 @Published var showMusicPlayer = false

14 @Published private(set) var showMusicBar = false

15 @Published var player = ApplicationMusicPlayer.shared

16 @Published var state = ApplicationMusicPlayer.shared.state

17 @Published var playerQueue = ApplicationMusicPlayer.shared.queue

18

19 public func start(with track: Track) {

20 player.queue = [track]

21 play()

22 showMusicPlayer = true

23 }

24

25 public func play(with item: UserMusicItem) {

26 switch item {

27 case .album(let album):

28 player.queue = [album]

29 case .playlist(let playlist):

30 player.queue = [playlist]

31 case .station(let station):

32 player.queue = [station]

33 case .track(let track):

34 player.queue = [track]

35 }

36 play()

37 }

38

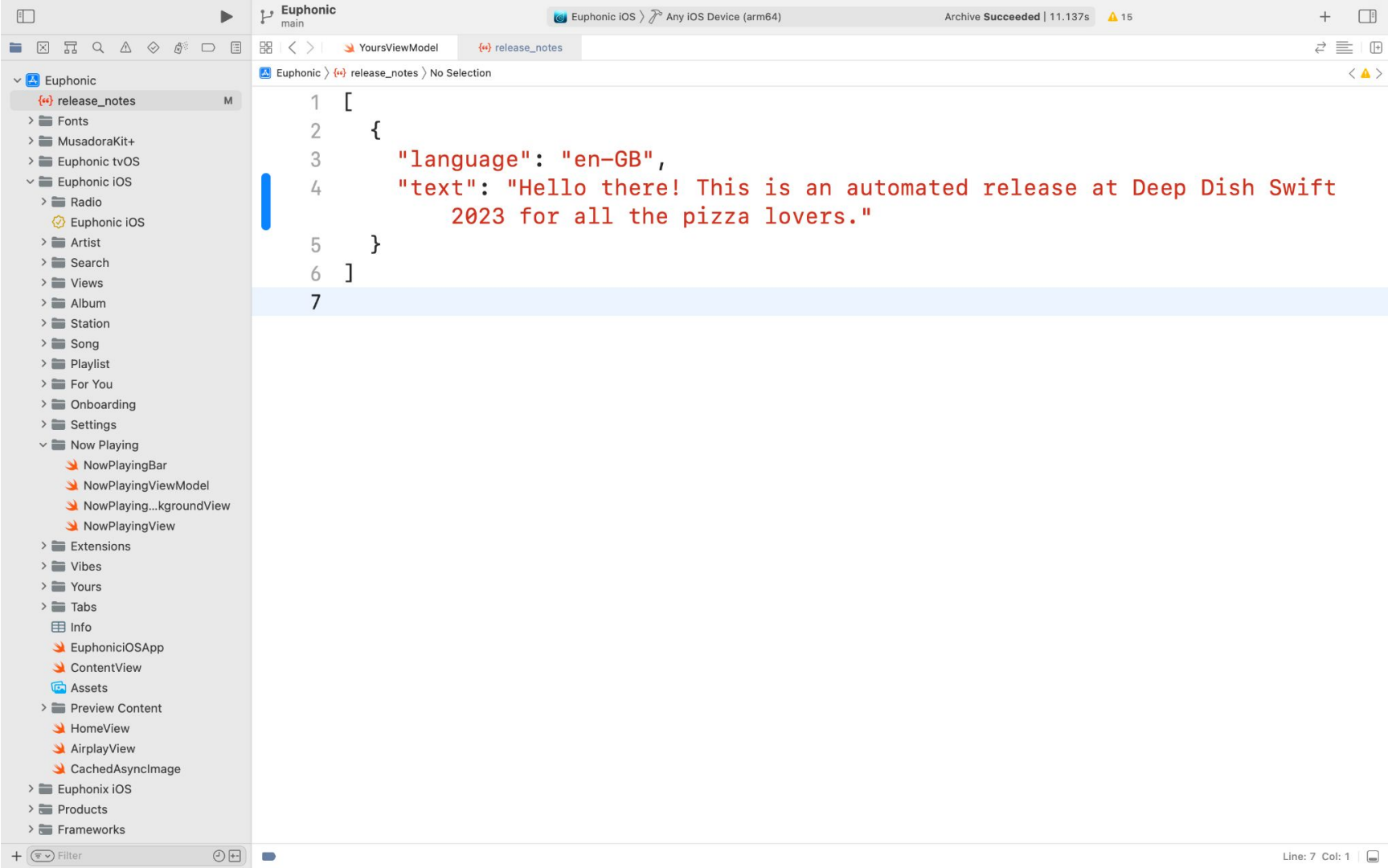
39 public func addToQueue(_ track: Track, loadedTracks: MusicItemCollection<Track>) async {

40 player.queue = .init(for: loadedTracks)

41 play()

+ Filter

Line: 40 Col: 44



HierarchicalFlat

Euphonic

Euphonic iOS

Now Playing

No...swiftM

Euphoni...odeproj

projec...k.space

xcuserdata

rudr...atad

U...teM

releas...es.jsonM

<>Euphonic>Euphonic iOS>Now Playing>NowPlayingBar>No Selection

11struct NowPlayingBar: View {

21var body: some View {

=

queue.currentEntry?

.item {

69withAnimation(.linear

.speed(0.5)) {

70artwork =

song.artwork

71}

72debugPrint("GOT NEW

SONG IN NOW

PLAYING BAR ON

APPEAR

\\(song.title)")

73self.id = song.id

74}

75}

76.onChange(of:

queue.currentEntry,

11struct NowPlayingBar: View {

21var body: some View {

font: .body,

padding: 10) {

54state

.playbackStatus

== .playing ?

viewModel

.pause() :

viewModel.play()

55}

56.foregroundColor(

.primary)

57.padding(.trailing,

16)

58}

59}

60.contentShape(Rectangle())

61.frame(minHeight: 70)

62.background

Filter

Euphonic>main>Local Revision

1/2>Euphonic>main>05/04/23 Rudrank Riyam 5afacc4 (HEAD)

Release for Deep Dish Swift 2023

☒ Push to remote: origin/main ☐ Amend commit

Cancel

Commit 3 Files and Push

Line: 7 Col: 1



Apps

Builds

Teams

Billing

Docs



Euphonic

github.com/rudrankriyam/Euphonic



Cancel build

Build overview

ID: `6448aa1f9aa1b29f6ca55fc2`

Index: **95**

Status: **building**

Workflow: **Euphonic iOS TestFlight from** [codemagic.yaml](#)

Started by: **Github webhook**

Started: **a few seconds ago**

Duration: **41s**

Machine: **Mac mini M1**

Branch: **main**

Commit: [773a510](#)

Click on the build steps for details.

Preparing build machine	29s
Fetching app sources	5s
Set up code signing identities	1s
Set up provisioning profiles settings on Xcode project	< 1s
Increment build number	4s
Build ipa for distribution	< 1s
Publishing	
Cleaning up	



Euphonic

github.com/rudrankriyam/Euphonic



Start new build



Build overview

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Index: 96

Status: finished

Workflow: Euphonic iOS TestFlight from [codemagic.yaml](#)

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Duration: 2m 15s

Machine: Mac mini M1

Branch: main

Commit: [cb356d1](#)

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Euphonic_96_artifacts.zip [31.59 KB]

Click on the build steps for details.

Preparing build machine	31s	
Fetching app sources	4s	
Set up code signing identities	1s	
Set up provisioning profiles settings on Xcode project	1s	
Increment build number	3s	
Build ipa for distribution	55s	
Publishing	31s	
Cleaning up	6s	

Post processing

App Store distribution	3m 56s
------------------------	--------

10:23

5G 61

◀ Search



Search in mail



UPDATES



"App Store Connect"

10:22

Your app Euphonic (6444817719) has been...

Dear Rudrank Riyam, Build 1.0 (72) of your app... ☆



"App Store Connect"

10:21

App Store Connect: Version 1.0 (72) for Eu...

Dear Rudrank Riyam, The following build has c... ☆



Codemagic

10:18

[Build SUCCEEDED] Euphonic [Euphonic iO...

Hi there! There's a new version of Euphonic av... ☆



"Euphonic" Ready to Test

1m ago

Version 1.0 (71) can now be installed on your device.



Swipe up to open

10:21

5G 62

◀ Safari

< Apps



Euphonic

Version 1.0 (72)

Expires in 90 days

INSTALL

What to Test

Hello there! This is an automated release at Deep Dish Swift 2023 for all the pizza lovers.

✉ [Send Beta Feedback](#)

Happiness of Automated Builds



Automating App Store Screenshots

120

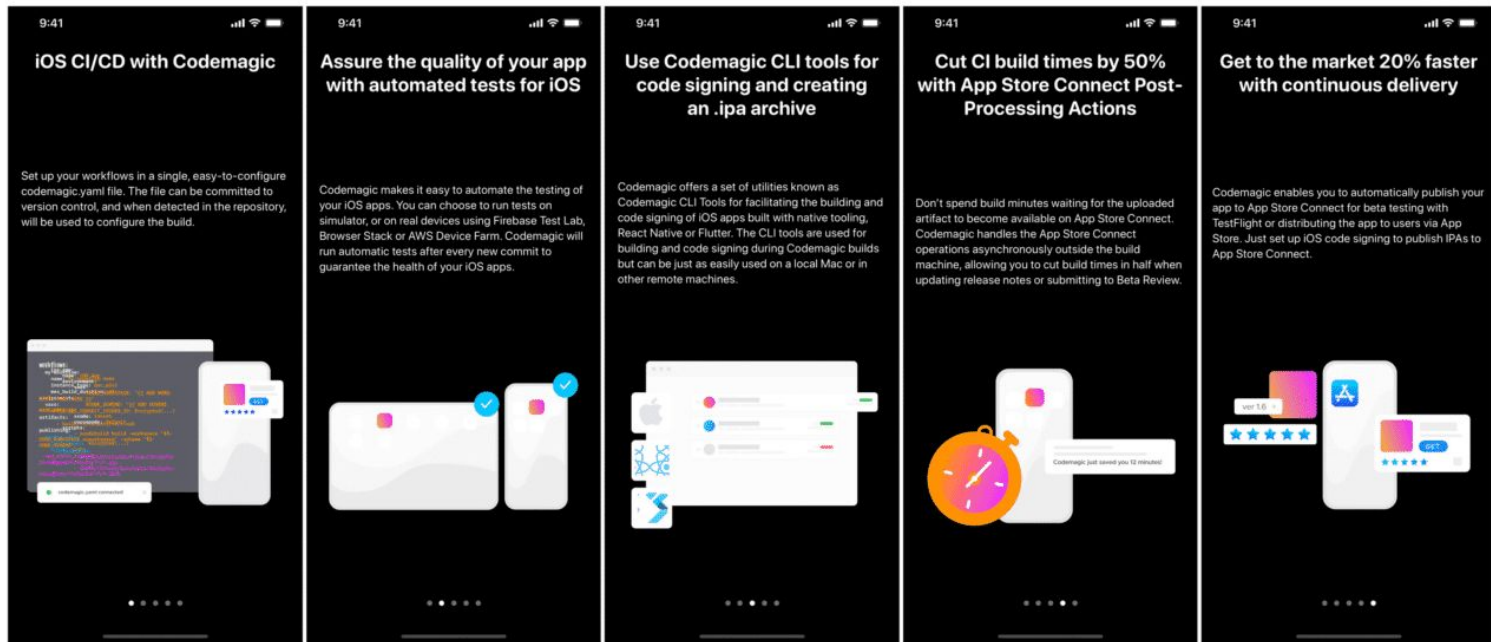
10 screenshots on 4 devices localised for 3 languages

Automating Screenshots

- Setup UI Tests
- Use fastlane snapshot
- Optimize and localize
- Upload to App Store Connect
- Integrate with CI/CD platforms

Using fastlane snapshot

iPhone 13 Pro Max



CI/CD Cost Concerns



500

Free Build Minutes on Codemagic.

Summary

-
- ★ Use **fastlane** or a **CI/CD service** to commit regularly, and ship iteratively.
 - ★ Configure your workflow to build, test, & archive project/workspace.
 - ★ Automate TestFlight and App Store release with release notes, and other metadata information.
 - ★ Automate screenshots for different devices and languages.



Successfully Passing the App Store Review



Thank you!

- Twitter: @rudrankriyam
- GitHub: @rudrankriyam
- Blog: rryam.com



c^odemagic