Ian Dundas, Senior iOS Developer

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Profile

Having been with the iOS platform since the beginning, and with fourteen years of professional programming experience (as well as backend development in Ruby), I've worked on a diverse portfolio of iOS projects: from the high-profile **CoronaCheck** app, to video-calling your doctor, to numerous consumer banking apps. I shipped a pilot for a new payment method between **ING, Mastercard and Albert Heijn** (millions of active monthly users), helped modernise the **FedEx** app as well as worked on a HealthKit app for **Philips.** I was the sole developer of an award-winning app for **Audi**.

Keywords: *Swift, SwiftUI, Generics, Combine, RxSwift, **MVVM** + Coordinator, Realm, CoreData, Fastlane, CI/CD, **Unit/UI/Snapshot Testing**, Charles Proxy.*

My focuses are especially on functional programming, writing for testability, and I'm currently embracing **SwiftUI** & Combine, which I used to launch an internal **macOS** app during my time at FedEx.

Personal

I've travelled widely, backpacking in 32 countries to-date as well as having lived in Vietnam, the UK and the Netherlands. I'm an avid cook, as well as an amateur brewer. I enjoy keeping fit, particularly mountain biking and swimming. I'm currently learning Dutch with a private tutor.

Portfolio Highlights

A few recent highlights of my twelve year iOS development career:

CoronaCheck for Ministerie van VWS - senior iOS developer, 2021-22

A high-pressure project operating under intense public scrutiny, with repeated and extreme deadlines, and the stated objective of "safely opening up Dutch society again" during the **COVID-19** pandemic. In a team of two (later three) iOS developers we developed an **open-source** "holder" and "scanner" pair of apps that could be used to prove a user's negative test COVID-19 (later also vaccinated or recovered) status.

It was essential to properly factor code to withstand a barrage of change requests through a rapidly evolving government policy. A high level of unit test coverage resulted in largely stable and bug-free deployed apps, which were shipped to millions of users via often bi-weekly releases. I also developed the **CI/CD pipeline** and was given responsibility for releasing the apps to the AppStore. The apps were **fully accessible** for VoiceOver, VoiceControl, SwitchControl to enable as many people access to the app as possible.

In 2021 CoronaCheck was the **most downloaded app** in The Netherlands, was frequently featured in the iOS AppStore, and won the Big Brother Awards Publieksprijs 2021 for the attention that was paid to the protection of personal data and user privacy.

ING, with Mastercard and Albert Heijn - senior iOS developer, 2020-21

High-pressure role with a fixed deadline. Together with another iOS developer, I worked intensively to ship a pilot of a new Dutch payment method (an iDEAL alternative) within the **ING Bankieren** app.

The project involved a great deal of problem-solving to get the pilot off the ground, frequent contact with numerous stakeholders, iterating over the core concept, and delivering regular builds for feedback.

I shipped fully-tested (100% Unit Test coverage, + UI Tests) production code. I also gave a "tech-talk" presentation to iOS Chapter colleagues at ING.

FedEx/TNT - senior iOS developer, 2019-20

Working with FedEx was a unique challenge. The core screens of the app had fallen into disrepair over many years, and needed to be overhauled in-place, whilst still regularly releasing to millions of global users. Alongside this, my first responsibility was **mentoring the existing team** in the USA and India to increase code quality: teaching modularity; writing code to be testable; hosting a weekly "Tech Council" where we discussed techniques & ideas; **overhauling the CI/CD setup**; adding static code analysis, etc. Leading by example.

We carefully wrapped the thousands of lines of old and untestable code, first in **UI Tests** to establish a baseline of stability, and then gradually pulled it apart into components which could be unit tested. The code had also been previously forked into identical-yet-different screens, so we had to also merge it all together into a single sensible and well-tested new architecture.

To assist with developing against a flaky test-backend, in my spare time I wrote a **macOS app** in **SwiftUI** which could transparently replay HTTP sessions (recorded in Charles Proxy), back to the app, to allow us to easily reproduce many different tricky test-data scenarios we'd seen during development. I plan to open-source this soon.

BankingRight at WeAreYou - lead iOS developer, 2018-19, 2016 & 2013

Our team designed components that could be pieced together to create a unique consumer banking app for different customers. This meant building light and reusable ViewControllers, swappable ViewModels with injectable extension points for adding custom functionality per-client. My responsibilities were designing the architecture to support this highly dynamic project, **teaching** idiomatic Swift development to an initially Objective-C focused team, as well as:

- Driving adoption of modern iOS best-practices: teaching **ReactiveKit**, MVVM, the use of generics, Protocol Oriented Programming, **Unit/Snapshot/UI Testing**.
- Building a pluggable, modularised, reactive payment screen.
- Deploying to six successive clients during the project: Knab, Aruba Bank, TD Bank, Hof Hoorneman, Optimix, Ohpen.
- Setting up a complete **Fastlane CI/CD pipeline** using self-hosted TFS.

Vhi Health Assistant - lead iOS developer, 2017-18

I built and **led a team of six iOS developers.** The entire management and development team was remote, distributed across 10 countries. Vhi had no prior mobile presence, yet starting from scratch we were able to make two major releases during the year, to an audience of now tens of thousands of active users. It reached #1 in the "Medical" category of the Irish iTunes App Store.

Vhi Health Assistant app used a video connection to connect patients face-to-face with an online doctor (pay as you go using Stripe), and so reliability, privacy and security were of paramount concern.

I created a fully reactive architecture using **RxSwift**, and we paid careful attention to Unit and UI testing. A legacy client backend-stack and old-fashioned deployment practises meant we had to adopt a defensive development style, gracefully handling diverse network conditions and failure states.

Speaking

http://iandundas.com/speaking

2019 Swift Usergroup NL: Reactive Programming: Writing What To Do (Not How To Do It)

2015 CocoaHeadsNL: Introduction to Functional Reactive Programming with ReactiveCocoa

Education

MSc: Systems Design of Internet Applications (Distinction): Newcastle University 2008-2009

BSc: Computer Science (2.1 with Honours): Newcastle University 2005-2008

References

Available upon request