

10 Steps to Becoming a

Professional App Developer

Mobile app development is the wave of the future. With an average of 65 apps (source: Flurry) on every smartphone, and estimates of more than 80 million smartphone users in the United States alone, it is a booming and lucrative industry.

Ever passed time playing Flappy Bird? How about checked your bank statement on your phone, or compared prices while shopping? Mobile apps range from fun to practical, simple to complex. And as smartphone users come to rely on them for everything from entertainment to real-time information, a surprising range of apps has emerged.

The great news for kids and teens interested in programming is that in this field, ability is increasingly disconnected from age. Students can start on their path towards becoming a mobile app developer long before they even start applying to colleges! Several past iD Tech Camps alumni have developed apps – both iPhone® and Android™ apps – and are now making a profit from their sales.



Meet iD Alumni Andrew: Developer of 9 published apps, accumulating more than 50,000 downloads.

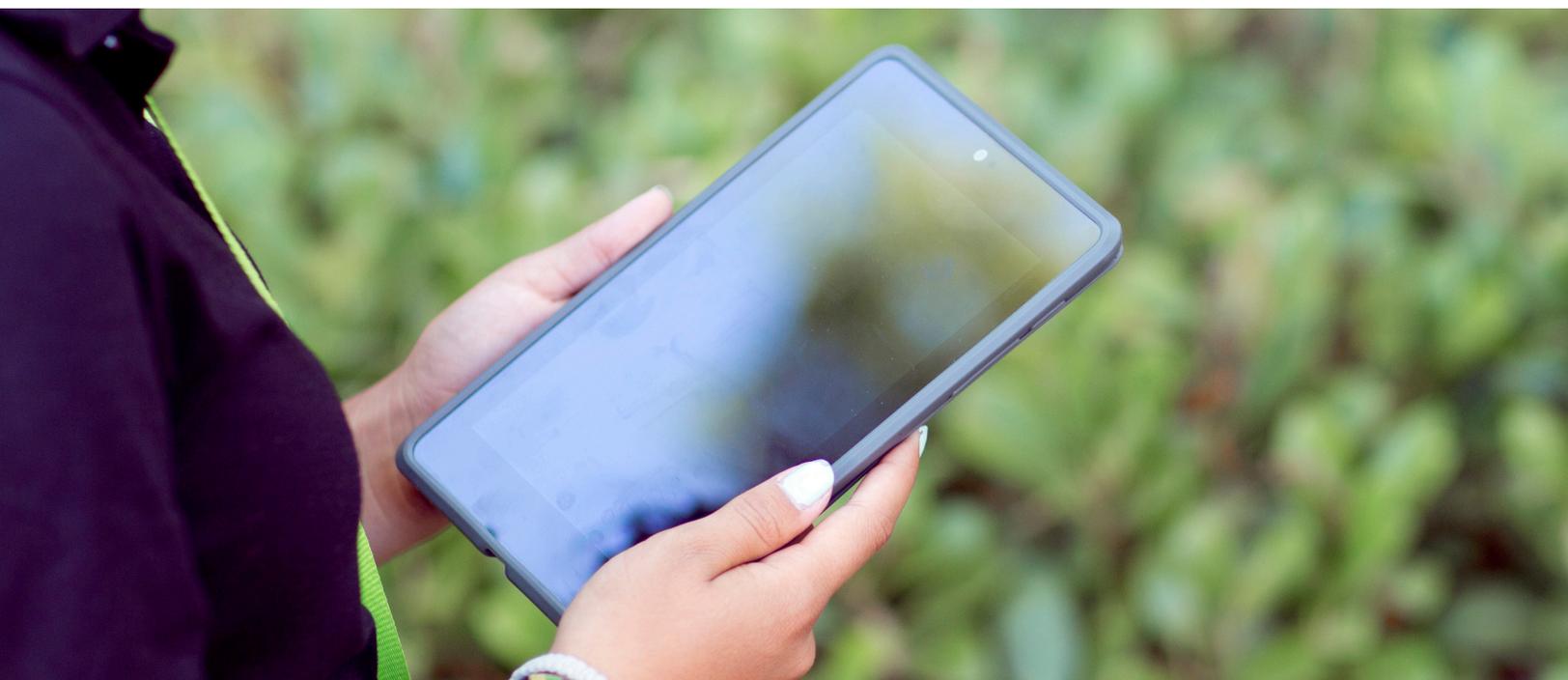
If you've read our 10 Steps to Becoming a Professional Software Engineer eBook, you already have a pretty good idea of the general framework you'll need to become a mobile app developer. Since mobile app development is heavily dependent on programming knowledge, a lot of the initial steps for learning the basics of programming are the same. Don't worry though – in this eBook, we'll also cover steps that are specific to mobile app development!

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Read on to learn about the mobile app development industry!

1. What is mobile app development?
2. Build a foundation in design and graphic arts.
3. Learn a set of core languages.
4. Recreate a game that already exists.
5. Start creating simple apps.
6. Publish your apps!
7. Revise your apps according to feedback.
8. Branch out.
9. Get a degree in Computer Science.
10. Work hard and don't give up!



STEP 01: What is mobile app development?

Mobile app development is essentially a specialized area of programming. After you master basic programming skills, you can branch out into mobile app development. Check out 10 Steps to Becoming a Professional Software Engineer for tips on how to get started programming.

Mobile app development career possibilities include working independently, joining a small team, or working as a developer at a large company. Depending on the size of your company, you may wear many different hats. In smaller companies, or on independent teams, individuals may take care of everything from programming to graphic design and user interface. In large companies with lots of resources, developers often get more specialized. You may find yourself working exclusively in a single programming language, or working on one specific area of the app.

The type of apps that one develops also varies a lot by company. One of the great things about app development is that individual projects can be pushed through very quickly, so there is lots of room for innovation and new ideas. There is no end of variety when it comes to app development projects!

“There’s an app for that.”
- Apple

STEP 02: Build a foundation in design and graphic arts

Since the user interface is a key component of any app, some background in design or graphic arts is very useful for an app developer. Independent app developers and those working in smaller companies (two categories that make up the majority of the booming app market) may very well need to handle the design elements on their own. Even if your team includes a designer, knowledge of basic layout will be helpful for creating overall strategy and deciding how you want your app to look and function.

Take classes to learn the basics of graphic design – look for electives through your school, or consider these options from iD Tech Camps:

- Game Design & Graphic Arts Hybrid
- Intro to Web Design & Photography
- Web Design & Digital Photography - Muse™, Photoshop® & Lightroom®

Step 03:
Learn a set of
core languages.

Start out by familiarizing yourself with a core set of programming languages. Languages useful for app development include:

- HTML5/CSS3/Javascript
- Xcode® - for iOS apps
- Java - for Android™ apps
- Flash® and Actionscript

(Note: These differ slightly from the ones we recommended in our 10 Steps to Becoming a Professional Software Engineer eBook, so compare carefully!)

Take a programming elective if your school offers them, or study programming through an outside class.

Great beginner through advanced programming classes offered by iD Tech Camps and iD Programming Academy include:

INTRO PROGRAMMING COURSES

- Adventures in Programming with Scratch (Scratch is a project of the MIT Media Lab)
- Programming in C++
- Programming in Java™
- Game Programming for Apple® iOS® & Android™ with Unity
- iD Programming Labs

INTERMEDIATE & ADVANCED PROGRAMMING COURSES

- iPhone® & iPad® App Development – Objective-C & Xcode®
- Google Android™ App Development with Java™
- Java™ for the AP® Exam
- Web Programming

Learning an entire programming language may seem like a big barrier to actually starting to develop apps, but don't be overwhelmed by our list. The best way to start out is to choose a platform – generally either iPhone® or Android™ – and focus on the languages specific to that platform. Once you master one programming language, it is a lot easier to branch out into others – you will see that the syntax for related languages carries over, and you have already learned half of what you need to know!

Another plus is that once you master a language and create an app, there are programs that will convert your app (depending on the language in which it is written) from iPhone® to Android™ or from Android™ to iPhone®. Unity, for example, allows you to use your app on both devices. Another option is HTML5, which has external programs such as PhoneGap that allow your apps to work on both as well.



Step 04:
Recreate a game that
already exists.

Once you have learned the rudiments of programming, put your skills to practical use with a project. Start easy by recreating a game that already exists – either aiming for a close duplicate, or creating your own variation. Since the basic structure of the app already exists, this fun project should be easy to start and provides great hands-on programming experience. You'll also get a feel for what actually goes into programming an app, the amount of time and effort it takes, how to test and fix bugs, etc.

Want some recommendations? In order of difficulty, try:

- Pong
- Solitaire (or any card game)
- Plants vs. Zombies
- Cut the Rope (*Note: if you use Unity, it has a built-in physics engine to take care of the complex math for you!*)

Step 05:
Start creating
simple apps.

Come up with your own game idea, and go for it! Don't stress too much about the idea to start out with.

Start with something simple, and give yourself a firm work schedule. Try making a single function app before you move on to more complex apps. And keep in mind that complex does not necessarily mean better. Some of the most popular apps and games out there are surprisingly simple!

"It's really hard to design products by focus groups. A lot of times, people don't know what they want until you show it to them."

– Steve Jobs

Also, as you develop your programming skills and are able to increase the complexity of your work, remember that an app should be as easy to use as possible. Just because you can add bells and whistles doesn't mean that you should. If adding complexity will distract from the purpose or the usability of your app, then rethink it.

Step 06:
Publish your apps!



Image from <http://www.readwrite.com>

As you create polished pieces, try to publish as many apps as possible.

For iPhone® and iPad®

You will need an Apple Developer account. When you submit your app for publication, it will go through a review process. Even if your app doesn't make it through the first time, keep revising and resubmitting.

For Android™

Set up a free account for publishing. There is no review process, so your app can go live immediately (if it gets flagged for questionable content, then the Google Play store will get involved).

Step 07:
Revise your apps
according to
feedback.

The biggest benefit of publishing apps is getting user feedback. Knowing other people's experiences with your apps, and what they found good or bad, will be extremely valuable as you continue to design mobile apps.

The more people you can get to test and comment on your app, the better. Enlist your family and friends not only to test, but to get the word out and enlist their own circles. It may be tempting to keep your apps to yourself until you feel that they are perfect – but they'll never be perfect until you've gotten real feedback! Get your work out there, and then revise, revise, revise.

Step 08:
Branch out.

One of the first things that most people think of when it comes to mobile apps is games – but don't limit yourself! There are many other types of popular mobile apps that get a lot of daily usage.

Basically, anything and everything you can fit into your hand would work as an app.

Other popular types of apps include:

- Flashlight apps
- Mirror apps
- Notebook apps
- Banking apps
- eBook apps

Single feature apps like flashlights and mirrors are fun ways to broaden your skill base and exercise your creativity. Creating apps for different purposes can be a great change of pace!



Image from www.apple.com

Step 09:
Get a degree in
Computer Science.

Most schools offer degrees in Computer Science, a valuable starting point for improving and refining your programming knowledge.

Prestigious schools with great programs include:

iD TECH LOCATIONS

- | | |
|---|----------------------------|
| - Massachusetts Institute of Technology (MIT) | - Princeton |
| - Stanford | - University of WI-Madison |
| - Carnegie Mellon | - Harvard |
| - UC Berkeley | - UCLA |
| | - Columbia University |

Other degree options include IT and Computer Information Systems. Some universities even offer Game concentrations within their Computer Science departments.

Step 10:
Work hard and
don't give up!

The app business can be a challenging industry, but don't give up. Keep creating apps and publishing them. As you gain experience and learn from your creations, your apps will become more and more popular. Who knows, you may invent the next Flappy Bird!

For more information about our
App Development courses, visit **iD Tech.com**.



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