



WHY LEARN TO CODE?

A CodeClan Guide



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Introduction.

At CodeClan we're all about teaching people new digital skills, with a big focus on coding. Every day we answer questions about our courses, from why we think it's important to learn a coding language, to the kind of careers people can move into once they've learned to code.

We'll try to answer those questions below, but before we go further, we thought we should address perhaps the biggest question for anyone reading this guide...

What exactly is coding?

Coding is the process of writing computer programs. Every website you visit, each app you use on your phone, even machines like dishwashers have been programmed by Humans.

Different programming languages are used to make different things, like web pages, mobile apps, games and databases.

Why code?

All the amazing things our technology can do has been programmed by skilled and imaginative programmers.

Spotify's algorithm somehow manages to make uncannily good recommendations when it compiles a weekly personalised playlist for its users, based on their listening habits and the data it collects. Amazon's shopping app can use the camera to identify objects nearby and match them with items on sale.

There's research, science, creativity and code behind both of them. Being able to programme unlocks a creative toolkit for you. It gives you the freedom to make your ideas come to life in exactly the way you imagined rather than being restricted to web page or game generators.

How do I learn to code?

Once you've made a choice, the next step is to find a textbook or an online resource that will teach you that language.

There are a large number of online tutorials available and many are free – later in this guide you'll find that we've recommended nine websites to start your coding journey, including Codecademy (www.codecademy.com) and Treehouse (www.teamtreehouse.com).

These sites are a great introduction into the world of coding, but many people find it difficult to study on their own from a web page.

This is why intensive bootcamps like ours have been so popular and successful around the world. We offer a range of courses in Edinburgh and Glasgow to suit both those looking to up-skill and anyone considering changing career.

About this e-book.

We know that coding is a key skill of the future and we're not alone in stating that the world of work will change dramatically in the coming years.

Whether you're thinking of changing career completely at a bootcamp, up-skilling on an evening course or simply dabbling with some free tutorials online, we hope the following ebook helps you take the next step in your coding journey.

The CodeClan Team

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Reasons to code.

.1 You'll challenge yourself.

Being a software developer allows you to continually challenge yourself on a daily basis. It's a role that requires you to be creative when tackling a problem and challenges you to figure out an optimal solution to this problem. This way of working is great for stoking ambition and also ensures that a day at the office is never boring.

.2 You can work on amazing projects.

Now more than ever, businesses across the globe are relying on digital as part of their day-to-day operations. Fortunately for us, this means that pretty much every industry is in need of software developers. I myself have worked in digital teams across a broad spectrum of industries, including education providers, financial services and with various digital companies. This demand for web developers gives you the chance to mould a career that you are passionate about and create a job that works for you. The world is your oyster.

.3 You could get onto a good salary trajectory.

Digital pay is on the increase. With an average starting salary for a junior developer at around £25,000-£27,499 and rising to around 40k within just two years, now is the time to get coding. Software development is so much more than just a salary but it's good to know that what you do will be well rewarded.

.4 You'll learn something new every day.

One of the best parts about learning to code is the ability to keep on learning. In my experience, there is nothing more satisfying than picking up a new coding technology, being able to learn it efficiently and applying it to my role as a web developer. Once you have mastered one language, moving on to others becomes easier, and less scary. It's about jumping in at the deep end and taking on the challenge.

.5 You can work anywhere.

Not all software development jobs require you to be in the office. If conforming to a 9-5 isn't for you then don't worry, it's becoming more and more common for software developers to be their own boss by going freelance and working remotely. Just think, I could be writing this from a beach in Rio! Software development comes with a fantastic roster of opportunities. You could become the next cutting edge start-up, take on roles with global giants like Adobe or Google and you can go just about anywhere in the world once you have a bit of experience under your belt.

Why your current skills make you perfect for coding .

Engineers, journalists, magicians, pub landlords – they may already have just what it takes to transfer into a career in digital.

For those who feel a sense of Groundhog Day-style dread each time they head to work, now could be the time to consider shifting all those valuable skills into the digital world. Just as your current post might be leaving you feeling undervalued and under-motivated, your skills could be hugely appreciated, and paid for more handsomely, in another company.

Transferable skills.

If you're currently working in a creative industry, you may be someone that's curious, interested in pushing boundaries, good at collaborating and capable of using trial and error to find the best solution to the problem. In other words, creatives make good coders.

Or maybe you're in a marketing role at the moment, your job involves dealing with communications, you work well as part of a team, and you're responsible for creating enthusiasm for projects. Guess what? These are all skills that will also stand you in good stead in a tech job.

Celebrating diverse backgrounds.

At CodeClan, we've found that people who are persistent, despite finding it challenging, do amazing things with their skills. If you're surfing the web and constantly thinking, 'How are these sites and applications put together?', then there's a good chance you'll enjoy programming.

In terms of former students, we've had some really excellent individuals who, before the course were engineers, magicians, pub landlords, journalists, poker players and loads more. Our employer partners such as Adobe, FreeAgent and Craneware often mention that they love the fact someone has committed a lot to change career. It also has the added benefit of developers coming from different work experiences and adding to the mix of talent in their development teams.

Ultimately, the digital sector needs a wide range of skill sets to provide the services and solutions needed to fulfil the client's needs. From analysts and programmers, to digital artists and content creators, understanding code helps people apply themselves to their role in today's workplace. With this reassuring news that you don't actually need to be a hacker, a maths whizz or a computer geek in order to find work in the digital world, maybe now's the time to start browsing training courses and making the first steps into a new career. This is why intensive bootcamps like ours have been so popular and successful around the world. We offer a range of courses in Edinburgh and Glasgow to suit both those looking to up-skill and anyone considering changing career.

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Websites to start your career in coding.

Thinking of a career change but not sure if computer programming is for you? The late Steve Jobs once said he believed everybody should learn how to program a computer because it teaches us how to think.

Learning to code can do more than just open the doors to a career as a software developer; learning the basics of a programming language can improve problem solving skills, encourage creative thinking and increase efficiency when working with technology.

Not only is learning to code a great way to enter into Scotland's thriving tech industry, it also offers great benefits to any computer user looking to gain new skills, knowledge or experience.

Best of all, you don't need to be a maths genius or have a fancy degree to do it; all you need is the willingness to learn and a passion for technology.

There are plenty of great websites out there to get you started on your journey to becoming a coding whizz but here are 9 top resources to help you on your way.

1 **Codecademy.** www.codecademy.com

A great place to start your coding journey is with online education provider, Codecademy. Not only is it easily accessible with all course material available online, Codecademy's hands-on interactive nature makes for an engaging learning experience. If that isn't reason enough to give Codecademy a try, to top it all off, it's completely free.

2 **Khan Academy** www.khanacademy.org

Like Codecademy, Khan Academy is a free online learning resource. Khan offers a personalised learning experience by enabling you to build your own dashboard, share your creations with others and most importantly learn at your own pace.

3 **MIT Open Courseware** www.ocw.mit.edu/index.htm

MIT open courseware is an online publication of course content available through MIT. Their Introduction to Computer Science and Programming course is aimed at students with little to no experience and is a great place to start for those looking to learn the basics of the Python programming language.

.4 **Udemy Courses** www.udemy.com

Udemy is an online learning marketplace with a great selection of both paid for and free course materials, including a variety of courses for online web development and programming.

.5 **EdX** www.edx.org

EdX is an open source online learning community founded by colleges and universities from around the world. It offers a wide variety of courses from verified institutions from which you can earn certifications to highlight your new skills or even gain university credits.

.6 **Free Code Camp** www.freecodecamp.com

Learn to code whilst also doing something good in the world. Free Code Camp is an open source community where you can learn to code, build your portfolio and help non-profit organisations with their coding needs. It's a win win for everyone!

.7 **The Odin Project** www.theodinproject.com

The Odin Project is a project based open source curriculum developed by Web developers for Web developers. With the Odin Project you will have access to great resources, work with like minded students and build a portfolio of projects to help get you started.

.8 **MIT App Inventor** www.appinventor.mit.edu/explore/

The MIT App Inventor is a beginner's introduction to programming and app creation. The cloud-based tool will guide you through the simple steps to building your first app right in your web browser including how to set up your mobile phone for live testing.

.9 **Treehouse** www.teamtreehouse.com

Although this is not a free course like some of the previous examples, Treehouse is a fast, easy, and affordable way to start your coding journey. Offering a variety of resources on web design, coding and more; Treehouse features clear, well explained videos created by experts.



Meet some career changers.

We asked our alumni for their tips on switching to digital. Making a career U-turn can be daunting, but many of our students have changed their job (and life) after 16 weeks on our intensive coding course.

Here are just some of the reasons they changed career, plus advice for anyone else thinking of doing the same thing.

MARTA - Getting out of my comfort zone

My previous job: I worked in the cultural heritage sector. So I did a bit of cultural heritage digitisation and a fair bit of admin work as well.

Why I changed career: I was working in administration and cultural heritage digitisation, which I enjoyed, but I couldn't see a chance of career progression and wanted to do something radical. It just got to the point where I felt like I wanted the next challenge. I wanted to push myself out of my comfort zone

New job: Software Developer. When I first started, my first big task was developing a web app in C# and it was part of a larger project that we were making for a proof of-concept for a client, so I was responsible for the front-end delivery of that product. I'm doing something completely different now: unit testing an encryption library.

Advice for others: With a strong background in languages, but not programming languages, I managed to go through CodeClan and secure a job fairly quickly after my course. So I would say just go for it and don't be scared. And also don't let anyone - include your own brain - tell you that you can't do it, because it's do-able.



Meet some career changers.

ALASDAIR. - Drawn to the logic and creativity of tech

My previous job: I was a primary school teacher before for about five or six years.

Why I changed career: I left teaching because I had a bit of a meltdown. It came to breaking point and so I left. I like the logical approach to things. That's what drew me to tech, but then when you get dropped into the job you see there's a whole creative aspect to this that people might not necessarily be aware of.

My new job: To start off with I was hired as a BI Junior Developer – Business Intelligence – and I did a lot of work learning about Oracle's Business Intelligence solutions.

My advice for others: Champion your new technical skills but also bear in mind that you've got soft skills that you've built up from your previous career that graduates coming out of university will not have, and that will stand you in good stead.



Hayley. - "I thought I'd be good at coding but had never given it a chance"

My previous job: I was a bartender travelling around Australia. I have a degree in Zoology and had worked in a laboratory as a microbiologist

Why I changed career: As a teenager I'd explored HTML and CSS, so I thought I was probably good at coding but had never given it a chance. While travelling I met a few developers and they got me to try coding on freeCodeCamp as I was interested to see how things were built. Some of them were able to work and travel at the same time, something I hadn't considered as an option before.



My advice for others: I would recommend trying some free online learning tools like freeCodeCamp or Codecademy first to make sure it's something you really enjoy doing. If you decide to do it, learning the command line as well will really help.

10 Most asked questions about CodeClan.

Signing-up for our Professional Software Development course is a big decision. We know you have questions.

To help you make an informed decision, we've pulled together the top 10 questions we receive into one handy list. If we've missed any, feel free to get in touch with our team.

.1 Who is the course for?

Our 16-week Professional Software Development course is for career changers who want to re-skill and find a job in Scotland's growing tech industry.

Our employer partners, who hire many of our graduates, aren't just looking for the skills you pick up during the course; they also value the transferrable skills you'll bring from your previous career, including teamwork and problem-solving.

In the past, our students have come from backgrounds like financial services, teaching, actuary, digital industry, engineering, linguistics and many more.

.2 Do I need to be able to code before I start?

You don't have to have any professional experience of coding before applying for the course, though we ask applicants to at least try some free resources (listing in Chapter 4) first. Your application will include a coding exercise.

There are also three weeks of pre-course work that will supply you with the basics before you join the rest of your cohort at our Edinburgh or Glasgow campuses.

.3 What kind of skills are you looking for potential applicants to have?

Someone who likes solving problems. It's all about seeing patterns, logic and creativity. We find that those with transferable skills do well on and after the course. So whether you're a midwife, engineer, pub landlord, or journalist, you'll fit in here and be extremely attractive to employers if you excel in these areas.

Finally, you have to be passionate about tech and motivated to learn. The course is enjoyable but challenging, so having the drive to continually improve is a must.

.4 Do I need to have done maths beyond National 5/ Standard Grade at school?

Not necessarily. The key skills we look for is a desire to solve problems and build things and an aptitude to work hard.

.5 Can I really learn to code in just 16 weeks?

You'll be surprised by how much you can learn in four months of intensive training! Our model is based on an immersive tuition process, effectively condensing key elements of computing and software development. Think of the skills you'll pick up here as enough to get a foot in the door in a tech company. The coursework directly addresses the current needs of industry and is aimed at giving students experience in leading edge working practices so they are ready to work, but also learn more on the job, upon graduation. Students are expected to work around 60 hours per week and submit a minimum of three projects over the core 16-week period.

.6 I'm 30/40/50 years old, am I too old to start a new career?

Absolutely not. Our oldest student so far was 58, with the average age being 30.

Figures have shown that up to 80% of Britain's workforce are in the wrong line of work, having been pushed into a particular career field from school. So if you're feeling unsatisfied with your job and daily routine, our course could be the perfect way to get your career back on track, fast.

.7 How do you support participants to secure employment?

Although specific jobs with particular organisations are not guaranteed, we have developed partnerships with more than 200 employers in Scotland, from start-ups to global names. Throughout the course we help students figure out what the best first step into employment is for them. Our team will have regular catch-ups with each student to talk about what technologies they're enjoying and what features they're looking for in their new career which helps to point students in the right direction.

You'll get help to develop their CV, prepare for interviews, and practice the technical tests that are common across the sector.

The help we offer to students extends beyond graduation.

.8 What sort of roles have your students gone into after the course and how much will I earn?

The roles that our students go into are as varied as the students themselves. Most commonly, our graduates are in junior level software development roles across a range of sectors, from finance to agriculture. Many have found ways to combine the skills they've developed in their previous career with the new knowledge they've gained at CodeClan to enter jobs that they're uniquely suited to. From project managers, UX analysts, software consultants and testers, careers in digital are vast and varied. The average starting salary for a CodeClan graduate is currently £24K (as of September 2018), depending on experience and the roles available.

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What certification do graduates receive/ what level of training do you offer?

We're approved by the Scottish Qualifications Authority (SQA), to offer their Professional Development Awards at Level 8 on the Scottish Credit and Qualifications Framework (SCQF). This is an internationally recognised qualification.

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Who's behind CodeClan?

CodeClan was created by the digital industry for the digital industry through it's member body, ScotlandIS, in partnership with Skills Development Scotland and the Scottish Government.

Being a student at CodeClan: What to expect and how to prepare.

Find out what to expect in the classroom, who your classmates could be and how we'll help you find a job...

We know that learning something new can be daunting, so we've answered some of the biggest questions you (probably) have about our Professional Software Development course.

What will happen in class?

First things first, we chuck you straight in at the deep end. You'll be expected to create a website on day one that you will present to your class and the CodeClan staff by lunchtime...

Just kidding, we're nice really!

The first day starts with your induction. We'll welcome you into the teaching space, introduce you to some of the important details and practices and help you break the ice with your classmates.

We'll go on to discuss classroom cultures and help you set up your own collective way of working. The rest of the day will be spent getting you set up with Github and getting you familiar with the command line which is how we interact with our computer's functionality.

Who will be in my class?

You'll already have met most of your peers at the 'Meet Your Cohort' event, so there will hopefully be some friendly faces. Class sizes are small, a maximum of 21 students, with at least three instructors plus occasional support from other members of the codeclan team and associate instructors throughout the course. Typically, one instructor will lead the lesson at the front and the others will be camped out around the room ready to help at all times.

CodeClan students vary widely in terms of age and background but you will be united by a common goal; you are all here to learn to code and make a change in your career.

What should I expect at job interviews?

Prior to any job interview you'll go through CV and interview prep with the team here and potentially external specialists when ready.

Interviews will vary from employer to employer and role to role but will often consist of a technical assessment such as a coding challenge as well as a criteria based interview.

What is the 'Employer Partner Network'?

CodeClan was set up to help fill the growing skills gap in the Scottish tech industry and produce developers that can go straight into the workplace. Our employer network is made up of more than 200 companies that are in desperate need of savvy coders to fill their tech teams in a variety of roles. They join our community for free and soon start to find out more about our students and the types of roles they're looking to go into.

Employers come along to Speed Networking sessions to meet students, often attend Friday lunchtime sessions to tell students who they are and what they do, and we place their vacancies on a jobs board – we then help students arrange interviews for roles they're interested in.

Should you be employed by one of them, the employer makes a contribution to your course fees, with the cost to the employer varying depending on the size of the company.

What kind of jobs are available?

There is an enormous variety of jobs available to our graduates. That's true both in terms of the type of employer and the actual jobs to be filled. In terms of the types of employer, the biggest distinction is between service companies and product companies. Within that you have a variety of sizes ranging from early stage (pre revenue) start-ups, through SME's (Small and Medium Enterprises) to mid-sized and larger companies.

The entry-level roles vary widely, from customer support, through testing and bug fixing, to full on coding. Generally speaking, you may not go directly into a front line coding role, your time with CodeClan provides you with a 'passport' into the digital technology industry.

As well as teaching you how to code during your 16 weeks with us we will give you a flavour of the diversity of roles available. When you enter the industry you will be amazed by the rich diversity of opportunities and different career paths you can take.

A Typical Day.

We often get asked what a day looks like on our Professional Software Development course.

We all learn by doing. By building things, making mistakes and focused practice. This is what your days will be centred around at CodeClan and why it's called an immersive course.

Most of your learning will come from being with a tribe of like-minded individuals and building your skills, brick by brick. Every day, you'll be challenged just beyond your current capabilities.

Grab a refreshment!

Arriving promptly at 9AM, you'll be greeted with a warm hello from your fellow students and instructors as we grab a quick coffee, tea or water in the kitchen before the lesson begins.

9am

Morning 'stand up'

We start the morning off with a stand up. Each cohort comes together in a big circle and one by one gives an update on the successes and challenges they are experiencing at each stage in their learning process. A great way to share stories and build team moral.

9:15am

Learn new materials

We kick-off the learning with a recap of homework. Then we learn some new things through code-alongs, lessons and exercises that build on what you've already done.

10am

Lunch Break!

A chance to fuel up, go for a walk or grab yourself a break on the sofa. Our kitchen's come equipped with appliances to heat and store food and our campuses are a stone's throw away from nearby cafe's, restaurants or supermarkets.

12pm

Lab session

This is all about learning through doing. The best way. You'll pair up with a classmate and using best practices like TDD and pair programming, build something that meets the brief given to you by the instructors.

1pm

Lab Review

We kick-off the learning with a recap of homework. Then we learn some new things through code-alongs, lessons and exercises that build on what you've already done.

4pm

Homework

Yes, homework! Often you'll stick around and finish it off at CodeClan with your classmates. Alternatively, many students leave for their commute home and tackle the homework later in the evening. Don't forget you need rest and sleep too though.

4:30pm



CodeClan_

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months, not years.**

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