

Technical Writing

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Topic & Motivation:

For years now we have been exposed to the handiness of next day delivery, item comparison and promo codes as we shop online. Not only can we order and pay in for items online, but we can also get food, shopping or takeaways delivered to our door.

In a world where we are growing more accustomed to opening amazon and ordering items as opposed to checking if our local stores even sell these items, is it feasible for a small business to create a professional quality e-commerce website while managing a busy retail store and competing against bigger brands?

During Covid most of us were of work, while sitting indoors, regardless of our technical know-how we moved our interest to online shopping as all non-essential shopping was forbidden. I was fortunate enough to have been offered a job to create an online e-commerce website for a local bicycle store. As we all do, I checked their current website to see what the expectations where. Well safe to say, the bar was low. With a tedious navigation bar, mismatched image ratios, missing item descriptions and out of stock items that I was still able to order, this site was obviously left to the side for quite some time.

Was this due to the fact that retail was booming before Covid, and they had no time to manage it? This got me thinking, would it be possible for a store during the midst of Covid to setup a truly good e-commerce store. A store that held thousands of items, fully unique item descriptions with the manufacturers item data, not some manually typed version that was missing half the data that was deemed “unnecessary”. A real, top of line website.

As I got started to work on the website I was also in-store managing new stock and getting photos. It quickly became apparent how busy this store during Covid was. Bicycles were deemed essential for travel therefore the retail store was open. As I watched my manager do his day-to-day tasks, I thought about all the small stores that hadn't the budget to bring a web developer in and create a website. How would they manage in setting up an e-commerce website that they could use to promote their products? They didn't have someone who could use photoshop to create professional product photos, nor would I imagine they have the education or background experience to understand the fundamentals of web design such as UX/UI as well all the other various skills required to run a competitive online business. How would they find the time to gain these skills while managing a retail store?

Because of my above reasons, this is why I am interested in seeing if I believe it would be achievable for a business owner to produce their own professional website to compete against today's big brand standards.

Topic: E-Commerce

Research Question: Is it feasible for store owners to single handedly produce a professional e-commerce website to match the current standard people expect.

Thesis: I believe that due to the complexity, professional expectations of online shopping, and skills required that a single business owner could not produce their own suitable e-commerce website to compete with today's expectations.

- a. Statistically Quantifiable.
- b. Soft and hard skills required.
- c. Competing against larger brands with qualified professionals.

Resources:

The primary resource that I have decided to use for my research question is *The Full Stack Developer* by Chris Northwood. This book looks at the skills required for a modern-day full stack developer to thrive in a competitive industry. I also use the *Global Startup Ecosystem Report 2019* to find research statistics and trends in the ecommerce sector. The secondary and supporting resources are a variation of academic courses and websites that present a reliable source of statistics that further prove the skills required to be a successful web developer and the percentage of start-ups that become profitable.

(Vue.ai 2022)

(Ravishankar 2021)

(Office for National Statistics 2020)

(Northwood 2018)

(GuruFocus 2017)

(Indeed Editorial Team 2021)

(Lynkova 2022)

(SPDLOAD 2022)

(Gauthier *et al.* 2019)

Feedback Changes:

Having received feedback on my initial submission I have went ahead and added more research in to the topic of my choice. I have also found a reliable and trustworthy primary source to base what can be described as core skills and principles required to be a successful web developer in the current era of web development. Alongside the previous changes I have made amendments to my thesis phrasing.

Upon further feedback, I have added more statistical research and have went about using my own phrasing as opposed to relying on the statistics themselves. I also used Cite It Right to correct up my citations and bibliography.

Proving Thesis:

In order to prove my thesis, I am going to lay out a list of essential skills required to create a consumer friendly, unique website and also the specific expectations that consumers now want in regard to their online shopping needs. Listed below are examples of the standards that are to be met when providing an online experience to an e-commerce consumer.

1. Users expect a personal, unique experience that has been thought out and tailor designed to suit their expectations. To achieve this standard of professionalism, a website must conform to accessibility needs, multiple device sizes, customer service features and many other expectations.

Evidence: Due to the increase in online shopping because of Covid-19, shoppers now expect their online experiences to be significantly easier and simpler to use. Websites now factor in many different things when they think about who their user is. Accessibility is a huge thing and accounting for the needs of the deaf, blind, colour blind and other accessibility needs can increase a websites Search Engine Optimisation by a great deal, and it is now becoming a thing that users with disabilities simply expect a website to have.

As well as not only expecting a higher quality of accessibility features, consumers have also now said that the website design has a 75% influence on a website's credibility. (Office for National Statistics 2020)

It is becoming more difficult to meet these high expectations of features as 92.4% of internet users prefer using their phones and due to the small screen sizes, it is difficult to create a user-friendly UX/UI design that isn't cluttered with all these expected features unless professional training has been received. (Lynkova 2022)

2. A professional website is expected to include custom content such as graphics and videos that have been designed to pull the user in and retain their focus for as long as necessary. Customers will judge a website upon its first appearance, so custom content is there to keep them interested in the website's products.

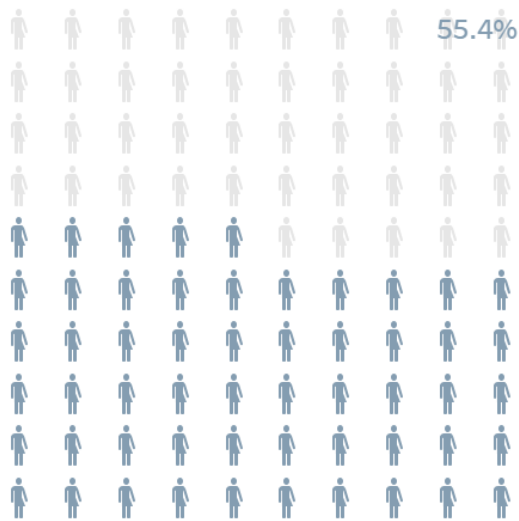
Evidence: A consumer will decide if they want to continue to stay on a website within an average of 0.05 seconds (Lynkova 2022a). This is a ridiculously short space of time, and it comes from the fact that there are now so many other choices of websites that consumers no longer have to put up with bad design themes anymore.

Using custom content such as motion graphics, videography and other assets will increase a user's engagement rate and can be the difference from a user who leaves and user who spends money on the website. By adding a video background, the conversion rate drastically increases by 138% (Lynkova 2022b).

3. A very high knowledge of multiple disciplines are required to create the sought after features and online assets to meet today's expectations set out by consumers and larger brands.

Evidence: It's very difficult to acquire such a wide range of skills in multiple disciplinary's in a short phase of time. It takes years of studying in one specific sector such as front-end web development to become an entry level developer. Students that attend a 3rd level education in Ireland to study computer science have a 55.4% chance of dropping out per 100 students enrolled.

Completion Rate Ready Reckoner



(HEA 2022) Figure 1 - Completion Rates, per 100 Students

The average completion time for a computing science degree is 3 years if it is a full-time degree, or 5 years if it is a part time degree, depending on the college or university (Indeed Editorial Team 2021). For people looking to go back into education the costs of attending 3rd level education vary on nationality and location. If the person is an EU citizen, then they will pay a student contribution fee of €3,000, if they are not an EU citizen they will pay around €10,000 but this varies for each college or university.

Without the necessary education and qualifications, 90% of start-up businesses fail (Startup Genome 2019).

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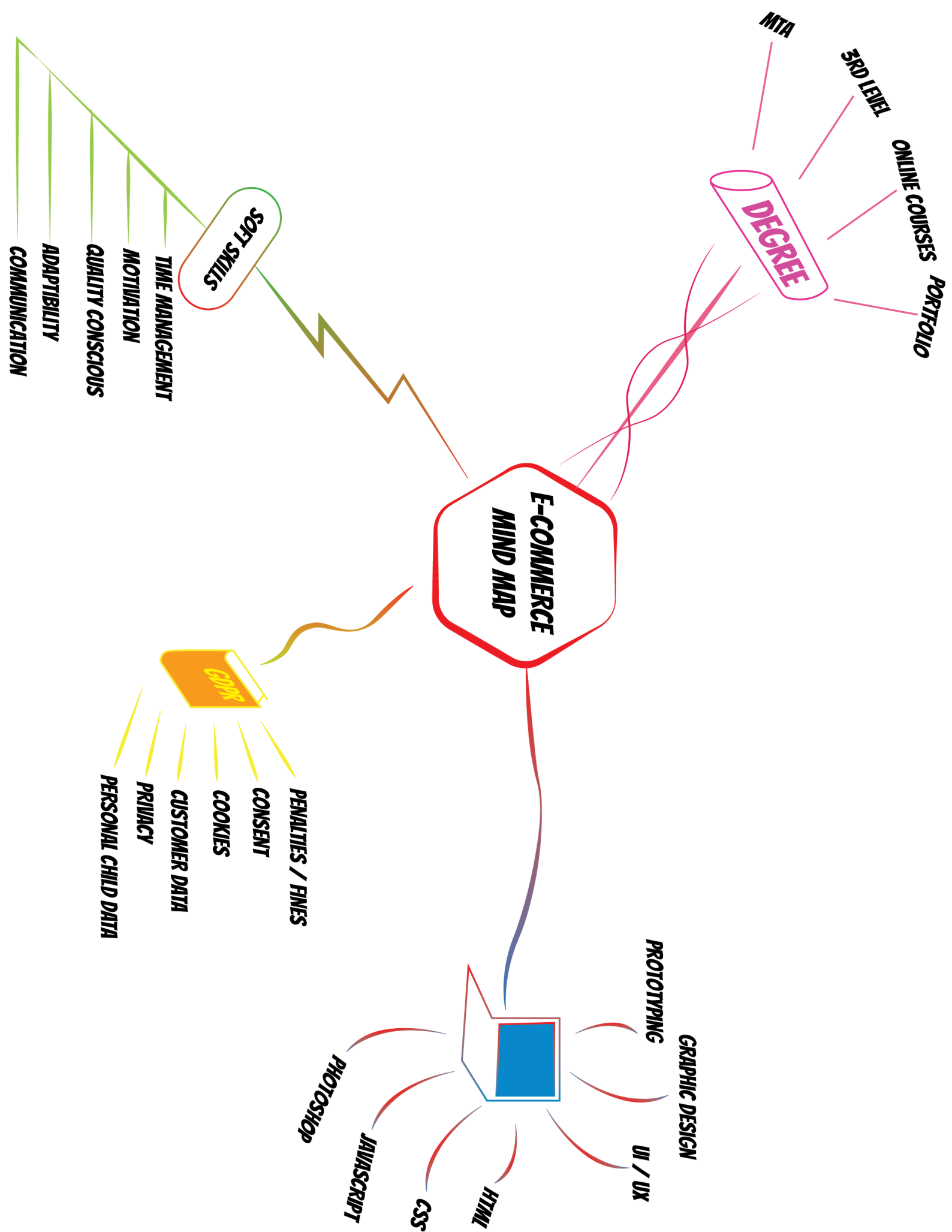
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Lines of Enquiry:

Hard Skills	Soft Skills	Languages	Software	Qualifications
Are UX skills important?	Is time management a required skill?	What coding languages are required for creating a website?	What software is required for graphical design?	Do you need a degree/3 rd level education?
Is coding required?	Are IT skills needed?	Will there be a need to add any external libraries/frameworks?	What software is required for coding languages?	What makes you qualified to manage an e-commerce website?
Is website prototyping needed?	What soft skills are required to run an e-commerce website?	If the pre-made website is being hosted by another platform, do you need to understand their language and can you edit it?	What software is required for prototyping?	Are there many learning options available for web design/web development?
Are graphical design skills required?		How many languages should you know before starting up the website?	What software is required for motion design/videos?	What is the average time of competition to become a web designer?
Is GDPR knowledge a necessity?		Is it hard to learn multiple programming languages?	What software is required for image manipulation?	

Question 1: Hard Skills

Are UX skills important?

User Experience (UX) skills are essential in making sure that the users have an enjoyable and easy to use experience. UX takes into consideration the needs and wants of the consumer, such as colour-blindness, or other accessibility requirements. It also looks to improve the flow of the website from initial page load to checkout. The goal is to make the process seamless. 70% of businesses fall through due to bad UX design. (Gajic 2022)

Is coding required?

Coding is an essential skill to compete against larger brands and is required to create a unique website that is designed to suit the needs of the consumer. To integrate new features that are requested from consumers, HTML, JavaScript, and CSS will be required to create, design and setup the functionality. JavaScript is used by 97.4% (W3Techs 2022a), HTML is used by 94.8% (W3Techs 2022b), and CSS is used by 96.5% of all websites on the web which highlight their importance (W3Techs 2022c).

Is website prototyping needed?

The ability to design the entire flow of the website along side the buttons and interactive components of a website is a fundamental requirement in creating a seamless, well thought out website that allows for an optimised shopping experience that is targeted towards a website's consumer. Having a well-designed User Interface (UI) will increase a websites conversion rate up to 200% (Lazar 2022).

Are graphical design skills required?

Being able to display custom graphics on a website will create a unique website that is separated from other online websites. 54% of online users prefer a personal online experience (Lynkova 2022), therefore being able to meet this expectation will separate a good website from a great website. This is a required skill for a website that is looking to stand apart from the hundreds of thousands of other websites that are on Google.

Is GDPR knowledge a necessity?

Yes. Knowing GDPR regulations and rules while developing a website is important. Neglecting these rules and guidelines can result in unsatisfactory customer interactions or in extreme cases, legal action. Understanding GDPR means knowing how to handle customer data, that data is being collected with knowledge and consent of the user and that their data is easily accessible and can be erased or sent to the user at their request. (Byrne 2018)

SUMMARY:

A web developer/designer must possess the skills to allow them to integrate custom content to a website whether this be in the form of motion graphics, video's or added functionality. A developer/designer must also be aware of the legal requirements of gathering data on consumers and what the legal obligations of that entails.

Question 2: Soft Skills

Is time management a required skill?

Yes, time management is a required skill needed to successfully develop an e-commerce website. 8% of developers say they struggle with time management, and this leads to an increase in website completion time. 60% of web developers say that it takes them 11-40 hours of work to complete a website while on good time management and 22% say that it takes them 41-61 hours, this is considering their time management skills are lacking. (Kohler 2020)

Are IT skills needed?

To assume a technical issue will never arise when working on a website would be negligent. IT skills are required to debug and fix any issues that may arise. Understanding everything from client to server-side issues are required to make sure that a website runs smoothly and can be updated and maintained in a professional manner. Issues can range from being asset related, to server issues as well as human error such as incorrect code. The IT expertise required to fix these wide range of issues means that there must be significant experience in that role. (Froehlich 2022)

What soft skills are required to run an e-commerce website?

Self-awareness, open-mindedness, problem solving/critical thinking, time management, IT skills and adaptability are soft skills every web developer/designer must have to design and develop a professional and bespoke e-commerce website. (Meier 2014; Cipan 2019; Brewster 2022)

These set of skills allow a designer/developer to correct self-imposed issues, be open to every evolving technology, overcome new issues, manage work time and fix or debug any issues that may arise.

SUMMARY:

It is important to understand that not all problems are related to code when it comes to an e-commerce website. Having the necessary soft skills to dissect and analyse issues as they arise is a vital part of running and managing a successful e-commerce website.

Question 3: Languages

What coding languages are required for creating a website?

When creating an e-commerce website, the foundations of the website will be constructed using HTML5 as a mark up language. For styling and design, CSS will be applied. For functionality, there are many different solutions. JavaScript is the most popular language as of 2022 (W3Techs 2022a) for adding extra functionality and is light weight so it can be used both server side and client side. Frameworks such as Typescript, React, Angular or Bootstrap can also be applied to allow for additional features.

Will there be a need to add any external libraries/frameworks?

No, external libraries such as Bootstrap or Angular simply allow for a faster turnover and added functionality and are not required to develop a website.

This however can all be achieved using the base language which is JavaScript.

These libraries are simply a build up of classes and code that has been developed to help speed up the design process.

How many languages are needed to setup an e-commerce website?

To setup a functional, custom, e-commerce website multiple languages are required. For website design CSS will be required, for website development HTML and JavaScript (JS) or any JS alternative is needed. For data storage and manipulation, a developer will need to know SQL so that they can store customer and product information on their database. (Young 2022)

Is a database needed when developing an e-commerce website?

Yes, a database is required when setting up an e-commerce website. A database is the location for which all user information will be stored alongside all other product information. Inside a database there will be multiple tables that will have different uses. For an e-commerce website, the most common database will have a table for users and a table for products. For scalability purposes, it is important to think about indexing and performance optimisation. There are many database solutions such as Amazon Web Services (AWS) or a self-hosted server such as MySQL. (Lim 2020)

Is it hard to learn multiple programming languages?

It is very difficult to learn multiple coding languages at the same time for any developer that has not learnt at least one before. When learning a language, it is advised to learn the core concepts first and then work on the syntax and methods that come with the selected language. It is discouraged by professionals to try and learn multiple languages at once as their syntax can vary. (Darling 2022)

SUMMARY:

When it comes to understanding programming languages, a firm understanding of CSS is required if you wish to do any professional looking customisation to your website. For added functionality it is important to know either HTML or JavaScript. Although it is possible to create a website based of CMS themes, they will not be able to hold up the professional teams that other large companies and brand can employ that makes their website stand out compared to the rest. Being able to set your website apart from the others is what will gain traffic and keep customers returning.

Question 4: Software

What software is required for graphical design?

There are paid and free alternatives when it comes to graphical design software. Adobe Illustrator (AI) is a premium software that is well equipped to provide you with professional standard graphics if you know how to use it. AI is capable of exporting SVG file types which are favourable for website images.

Inkscape is free alternative that also has SVG exporting. Compared to AI, Inkscape uses a node-based design method so it tedious to use for some projects.

What software is required for coding languages?

For coding you can use a variation of IDE's (Integrated Development Environment). Visual Studio Code (VSC) is very popular and free. It comes with a massive store that allows for plugins to be installed. An IDE makes finding mistakes easier as it will highlight the issues using intellisense, which is a smart feature in most programming tools. VSC has support for HTML, CSS, JavaScript and many more.

What software is required for prototyping?

It is important to have a good prototyping tool so that you can plan out each page of your website, how your buttons will look and anything else that goes into your website.

Adobe XD and Figma are two of the leading prototyping tools. Both have tools that the other doesn't so it's about finding what suits you best. Figma has a large open-source community, while Adobe XD is a premium software and requires a subscription to Adobe Creative Cloud.

What software is required for motion design/videos?

When creating videos to be used on your website or for branding then Adobe After Effects (AE) is a premium software that has a medium/challenging learning curve.

Blender is free open-source software that has video editing capabilities. Although not as intuitive of an interface as AE, there are plenty of instruction videos provided by the Blender.org institution.

What software is required for image manipulation?

Adobe Photoshop is the industry leading image manipulation software on the market. With its smart features such as content aware fill, you will be able to clean up product photos, re-size, and export multiple files at once, all formatted and ready for web upload.

A free version of Photoshop would be GIMP. GIMP is an open-source GNU Image Manipulation Program that allows for web exporting.

SUMMARY:

There are both paid and free software packages out there that are capable of producing professional assets for an e-commerce website designer. Time and dedication are going to be the defining factors when it comes to the quality of the assets that are outputted. The user will need to be efficient with their time and not get caught up in the tools that all these software offer.

Question 5: Qualifications

Do you need a degree/3rd level education?

You do not need a 3rd level education or a college degree to create or manage an e-commerce store. Although a vast majority of people benefit from the skills and knowledge they learn while attending their studies in that area, it is not a requirement.

(‘What Kind of Degree Do I Need to Become a Web Designer’ 2022)

What makes you qualified to manage an e-commerce website?

Having completed a course or degree in that field of work, one could say that at that point you are qualified to take on the job of creating an e-commerce website.

Another method of gauging if your qualified is by having a good broad portfolio that demonstrates the core principles of coding alongside some personal projects.

Are there many learning options available for web design/web development?

There are loads of education options in that field. One could pursue a degree from an accredited college, or if there was a specific topic you wanted to learn you could look on a reputable online course provider such as Udemy or Skillshare.

A final resource could be simply reading coding documentation and learning from online material such as Stack Overflow or YouTube.

What is the average time of competition to become a web designer?

By looking at multiple college courses online, attending both a design-oriented degree myself in the past, and currently studying an computing degree I can say confidently that it will range from 3-4 years for any course that teaches their modules to a professional standard while attending full time and 4-5 for a part time course.

SUMMARY:

Although you don’t need a degree or any qualifications for that matter to run, design or create an e-commerce website, the skills and knowledge that come with them degrees or the lessons learned from online material such as Udemy courses will prove invaluable if you were to come across any issues. These courses aim to teach not just how to use certain CMS but to also teach the core values that you can carry to any e-commerce project.