Web Development

What is a Web Developer?

A web developer is a type of programmer that creates websites. Web developers have a difficult job because they act as an interpreter between clients and computer capabilities, taking a conceptual design, and translating it into a language that computers understand, such as Python or HTML [1]. The primary responsibility of a web developer is to build consistent and efficient, web applications and services to the specifications of the client.

Important Skills

▷ Ability to empathize with co-workers, clients and users

▷ Strong work ethic and willingness to be flexible

▷ Working with others and being a team player

▷ Have a willingness to grow from criticism

Statistics About the Industry

Today, having an online presence is critical for all organizations, and the demand for web developers is growing across all industries, not just within the tech sector:

▷ In Atlantic Canada, the average salary for a web developer ranges between $41,000 - $81,000, depending on location, employer, and experience level [6].

▷ This role has previously been dominated by men, with a reported 88 per cent of all web developers in the country identifying as men in 2017. But, this has slowly begun to change over the past two years, as the ratio of men-to-women web developers has decreased from 17-1 in 2017, to 10-1 currently [7].

digital
nova scotia

Roles and Skills needed

There are three common types of web developer roles, each with a different focus [2]:

Front-End Developer

A front-end developer designs and writes the code needed to implement the website or service. The web developer is responsible for making sure that all the content that is needed for the website is clear, visible, and found in the right place. They are also responsible for the design and look of the website, including text colors, background colors, headers, links, and buttons.

Back-End Developer

While front-end developers are responsible for client-side programming, back-end developers focus on the server-side. They must create the code and programs that power the website's server, databases, and any applications that it contains. The most important thing as a back-end developer is the ability to be able to create a clean, and efficient, code that does what you want it to in the quickest way possible.

Full-Stack Developer

Full-stack developers understand both front and back-end strategies, which means that they are perfectly positioned to oversee the entire process. Learning full-stack development techniques has a huge range of benefits, and positions like this are likely to be paid more than standard web development positions, making them more attractive to developers.

Analytical Skills

Behaviours are constantly changing, so your designs, coding, and development skills will have to change too. There are a number of ways to understand consumers, but one great method is to hone-in on their online behaviors. There are tools available such as Google Analytics, MOZ, and SEMRush that can help. With statistics, you'll better understand your specific target audiences, as they show you which keywords users search for, and how long they stay on your websites.

Photoshop

As a web developer, Photoshop will give you the ability to do your work faster, and better. You will use Photoshop primarily for creating mock-up websites for your clients. You can use Photoshop to edit, design, and stylize websites before presenting them or going live with them. You will also learn how to translate and code designs through working in Photoshop as well.

HTML/CSS

Web developers need to understand the basics of coding, including HyperText Markup Language (HTML). HTML forms practically every web page on the Internet, and how a website functions depends on the way a developer writes the code. Cascading Style Sheets (CSS) interprets documents written in a markup language, and can describe how a HTML document will look visually as a website. It lays the foundation for font, colors, and overall layout.

JavaScript

JavaScript is a higher-level programming language that makes websites more interactive and functional, and allows you to create better experiences for web users. With JavaScript, you can write special features directly onto your sites, including search bars, social media share buttons, and videos. JavaScript compliments HTML.

With the industry growing quickly, web development is a continuous need. There are several post-secondary courses in Nova Scotia for students to enroll in to learn how to become a web developer:

Nova Scotia Community College (NSCC) IT Web Programming [8]:

This program teaches students computer programming by exploring, and building, web applications. In this two-year program, students will learn how to be a skilled computer programmer, how to develop complex data-driven web applications using a wide variety of different technologies and languages, how to work within an evolving ecosystem of web technologies, how to deploy and administer content management systems, and the basics of server administration and visual design.

Dalhousie University Computer Science (9):

Students will gain an understanding of the theory, design, and application of computer science by exploring a wide range of areas including software development, algorithms, networking and graphics. Students will gain the foundational knowledge to create new, and innovative, technologies using computers and how we will interact with each other in the future. Students will take courses that will expand their knowledge about operating systems, cybersecurity, machine learning and AI, and much more.

Saint Mary's University (SMU) Computer Science [10]:

Computer science involves the systematic study of the algorithms that underlies the acquisition, representation, processing, storage, communication of information. It also involves the study of computing platforms and programming languages, such as C++ and Java. In this program, students will explore creative ways to solve problems as they discover how computers and computer systems can be applied to everything from medicine, to security, to entertainment. Students will also gain project management, and software design and development skills.

Nova Scotia College of Art and Design (NSCAD) Interdisciplinary Design [11]:

Interdisciplinary Design is a unique program that takes a distinctly collaborative, interdisciplinary, and process-oriented approach. It covers a range of design disciplines from communication, to graphic interaction and product design. Focusing on the process of design thinking and the various visual and technical skills associated with the design disciplines, students learn to solve problems, identify opportunities, and communicate solutions across a broad range of media and contexts.

Saint Francis Xavier University Computer Science [12]:

In this program, students will learn scientific foundations of information and computation together with practical techniques for the implementation of these foundations. The material in this program is applicable to almost every facet of life, and students will learn through an intensive, hands-on approach. There are many sub areas of this program, including artificial intelligence, databases, game development, cyber security, graphics, high performance computing, big data, networking, programming languages, robotics, and much more. There are new areas, such as health informatics and the internet of things, being created and included in the program to keep up as the discipline evolves. This program takes students four years to complete.

Acadia University Computer Science [13]:

Students will be brought up to industry standards by the program providing them a mix of computational theory, systems and architecture knowledge, problem solving, systems analysis and application development skills and experience. Throughout these courses, students will also improve upon their soft skills, such as interpersonal communication, team work, project management and entrepreneurial skills. This program takes four years to complete.

Udemy Computer Science [14]:

An online resource that anybody with reliable internet can access and make use of. There are three computer science programs (101: Master the Theory behind Programming, 101: Computers & Programming for Beginners, and Introduction to Computer Sciences) available to register for. Each of these programs costs under $15, and there is a series of lecture slides and notes that students can read at their own pace to learn the course material.

digital
nova scotia

GETTING STARTED

WHAT DO THE PROFESSIONALS THINK?

We spoke to current web developer Chris Jones, working in the tech sector in Halifax, and discussed the current state of the profession:

Chris Jones said that in today's industry, web developer's roles are much more defined and specific than they were in the past for many organizations, tech or not.

"When I first started working at a web developer in the 1990's, a web developer's role was often viewed as the 'Web Master', as they would be responsible for doing almost all the computer-based work for the office. In 2019 though, companies hire developers who can complete a specific role of programming, such as front or back-end developers, database analysts, performance engineers, and many other roles."

Jones also spoke about how the profession is currently doing in Nova Scotia, and said that it is definitely on the rise.

"I think there is quite a bit of good stuff going on in Nova Scotia when it comes to the web developer industry; it's very much on the up, there's lots of smart people here, lots of opportunities, and lots of post secondary institutions to help them."

When asked for one piece of advice that he would give students, or those interested in becoming a web developer, Chris encouraged asking yourself:

"Do you enjoy being challenged? Are you a problem solver, and enjoy thinking outside the box? Do you enjoy constantly learning, and advancing your skills? Do you enjoy creating and building new things? If you answer 'yes' to any of those questions, then I believe you can have a career being a web developer."

CHRIS JONES

WEB DEVELOPER,
\ABLE SENSE

digital
nova scotia

WHAT DO THE PROFESSIONALS THINK?

We also spoke to Derek Morash, another web developer at Able Sense. We asked him what his piece of advice would be, and it was simple; go online and start trying to create things on your own.

"I would suggest for anyone that is interested in this type of work just to simply go on Youtube and look up 'How to Build a Website', and then try to do it themselves. If they try it, they'll quickly know if they like it or not, and they'll also gain first-hand exposure to the type of work they would be doing working as a web developer. I think it's a fun, and effective, way to get people introduced to the industry."

DEREK MORASH

WEB DEVELOPER,
ABLE SENSE

The more you know

According to Atlantic Canada Data Information and Communications Technology Council's 2019 report, a web developer is one of the most in-demand positions throughout the tech industry in Canada (5) .

digital
nova scotia

References page 1

[1] https://www.bitdegree.org/tutorials/what-is-a-web-developer/

[2] https://www.bitdegree.org/tutorials/what-is-a-web-developer/

[3] https://simpleprogrammer.com/soft-skills-2019/

[4] http://classifieds.usatoday.com/blog/careers/7-skills-every-web-developer-needs-resume/

[5] https://www.ictc-ctic.ca/wp-content/uploads/2019/11/canada-growth-currency-2019-FINAL-ENG.pdf

[6]https://www.glassdoor.ca/Salaries/nova-scotia-web-developer-salary SRCH_IL.0,11_IS4079_KO12,25.htm

[7] http://brookfieldinstitute.ca/wp-content/uploads/BrookfieldInstitute_StackingUp.pdf

[8] https://www.nscc.ca/learning_programs/programs/PlanDescr.aspx?prg=ITWP&pln=ITWEBPRO

[9] https://www.dal.ca/faculty/computerscience/undergraduate-programs/study-computer-science.html

[10] https://smu.ca/academics/computing-science.html

[11] https://my.nscad.ca/programs/faculty/3/Interdisciplinary-Design

[12] https://www.stfx.ca/academics/science/computer-science

[13] https://cs.acadiau.ca/bachelor-of-computer-science.html

[14] https://www.udemy.com/courses/search/q=computer%20science&src=sac&kw=computer%20s