## **HOW DOES THE WEB WORK?**

### **Introduction**

Before you can understand how to program the web, you need a more rigorous understanding of the web itself than you likely have now. These concepts provide a more holistic understanding of the ecosystem in which you will be working and will enable you to talk intelligently with other developers about your work.

### **Learning Outcomes**

At the end of this lesson, you should be able to do the following:

* Describe what the internet is.
* Describe what packets are and how they are used to transfer data.
* Understand the differences between a web page, web server, web browser and search engine.
* Briefly explain what a client is.
* Briefly explain what a server is.
* Explain what IP addresses are.
* Explain what DNS servers are.

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### **Assignment**

1. Watch this [BBC short](https://www.youtube.com/watch?v=eHp1l73ztB8) for an overview of how the internet works.
2. Read this [article](https://developer.mozilla.org/en-US/Learn/Common_questions/How_does_the_Internet_work) from Mozilla on “How does the Internet work?”.
3. Watch [How the Internet Works in 5 Minutes](https://youtu.be/7_LPdttKXPc?t=46s).
4. Read up on the [differences](https://developer.mozilla.org/en-US/Learn/Common_questions/Pages_sites_servers_and_search_engines) between a web page, a web server, and a search engine.
5. Watch this [Google short](https://youtu.be/BrXPcaRlBqo) explaining what a web browser is. Then, find out what web browser you are using right [now](https://www.whatsmybrowser.org/).
6. Read about how one part of the web [interacts with another](https://developer.mozilla.org/en-US/Learn/Getting_started_with_the_web/How_the_Web_works#Clients_and_servers) and [read about](https://developer.mozilla.org/en-US/Learn/Common_questions/What_is_a_domain_name#How_does_a_DNS_request_work) or [watch](https://www.youtube.com/watch?v=72snZctFFtA&feature=youtu.be&t=45s) a DNS request in action.

### **Additional Resources**

This section contains helpful links to other content. It isn’t required, so consider it supplemental material if you want to dive deeper into something.

* Listen to [Part 1](https://twit.tv/shows/security-now/episodes/25?autostart=false) (starts around 8:30) and [Part 2](https://twit.tv/shows/security-now/episodes/26?autostart=false) of Security Now Podcast How *the web works* series.
* Watch [A packet’s journey](https://www.youtube.com/watch?v=ewrBalT_eBM&feature).
* Consider buying the book [Tubes: Behind the Scenes on the Internet](https://www.amazon.co.uk/dp/B007TB5SKA/ref=dp-kindle-redirect?_encoding=UTF8&btkr=1).
* If you’re in for a bit more reading, you can check out the [Introduction to HTTP](https://launchschool.com/books/http) online book at LaunchSchool. This book also touches on some topics covered later in the curriculum, such as developer tools and security. Additionally, you can learn about HTTP tools, which you may find helpful in the future.

### **Knowledge Check**

This section contains questions for you to check your understanding of this lesson. If you’re having trouble answering the questions below on your own, review the material above to find the answer.

* What is a network?
* What is the internet?
* What is an IP address?
* What is a router?
* What is an ISP?
* What are packets and how are they used to transfer data?
* What is a client?
* What is a server?
* What is a web page?
* What is a web server?
* What is a web browser?
* What is a search engine?
* What is a DNS request?
* What browser are you currently using?
* In your own words, explain what happens when you run a search on google.com.