How The Web Works

Let’s learn something!

PIERIAN DATA

Django Bootcamp

- This lecture will discuss the following:
    - How the web works
    - What do we mean by “Full-Stack”
    - A brief overview of the course tech
    - Why we chose Django for the course
- Let’s get started!

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- Before we can begin to learn about all the technologies in this course, we need to understand how the web works and what constitutes the “Full-Stack”

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- So what happens when your at home and you open up your browser and visit a website?
- Let’s breakdown the basic steps!

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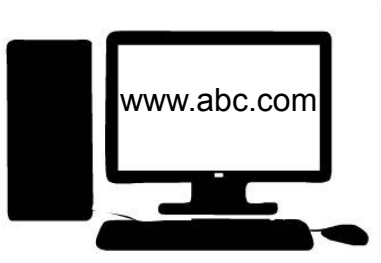
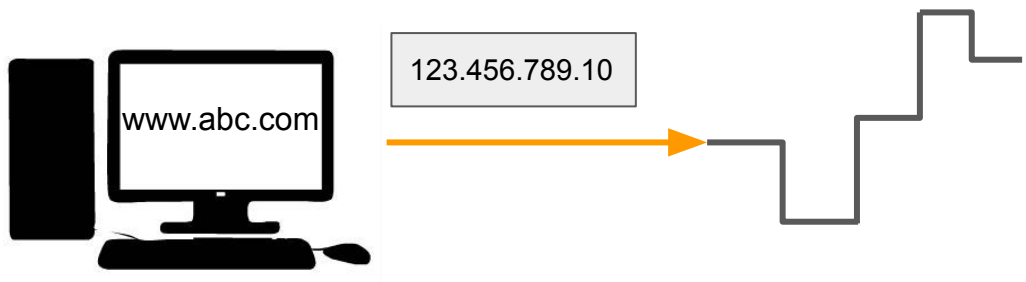
- You start off by typing the URL into your browser.

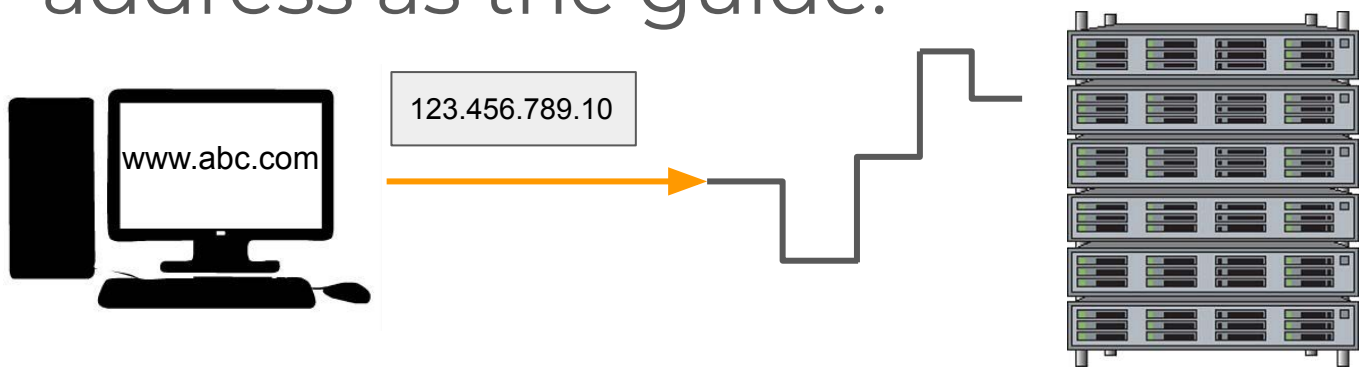


- Your computer then sends this request as a packet, which includes the IP address of the website you want.

- It sends this request through wires, or a satellite which eventually links to wires using your ISP.



- Your ISP will then re-route the request to the appropriate server location, using the IP address as the guide.



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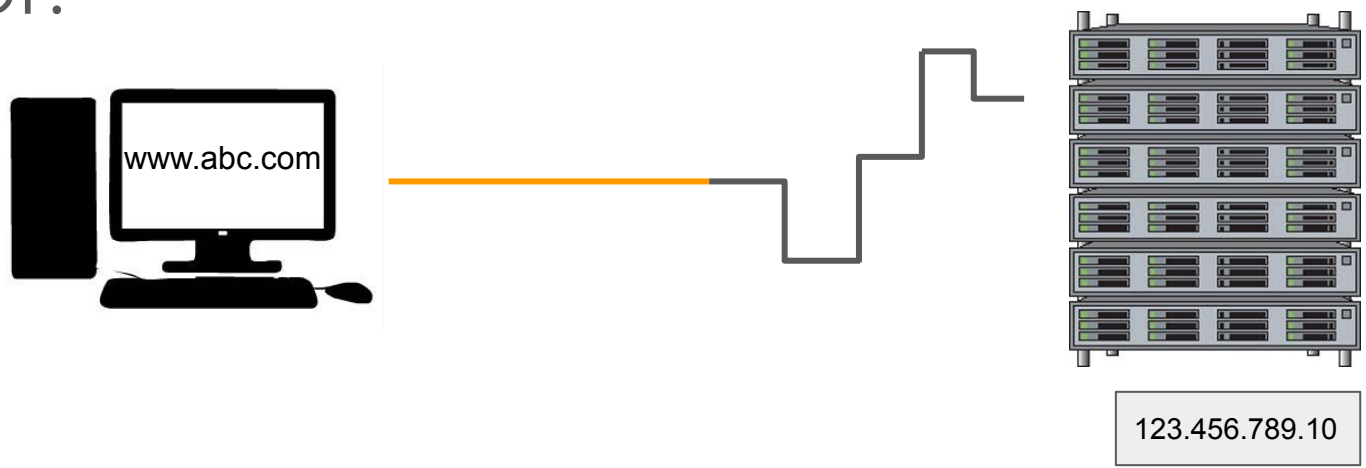
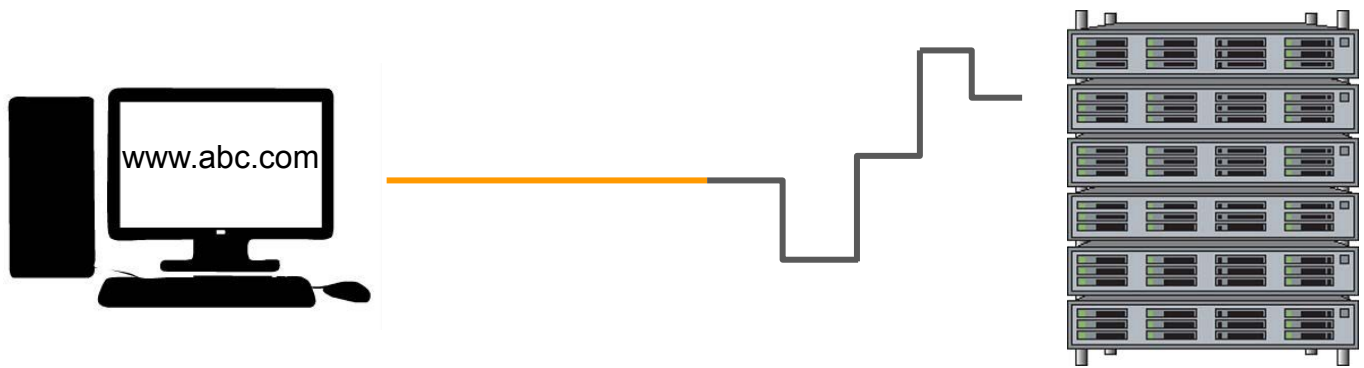
- Once your request reaches the server, it can send back the website you asked for.



- However a full website with content is too big to send as a single packet of data.



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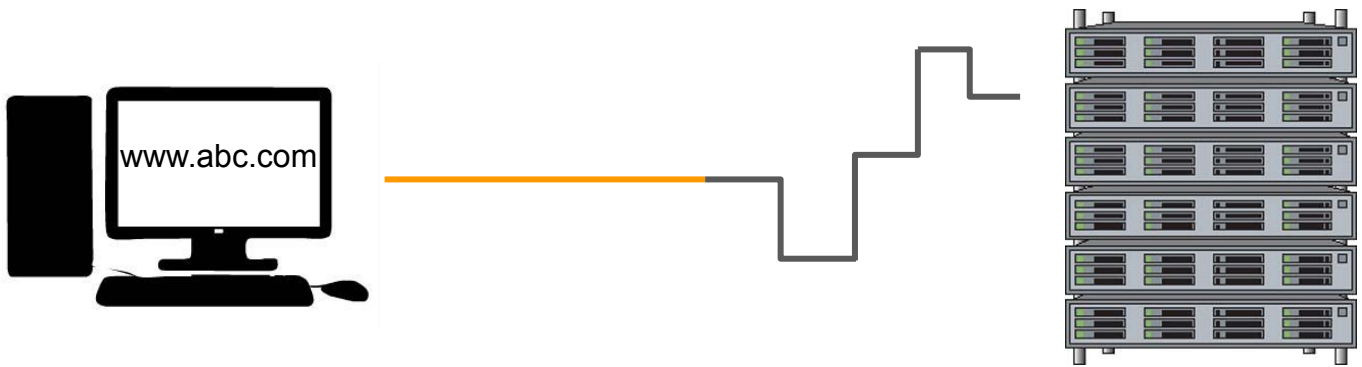
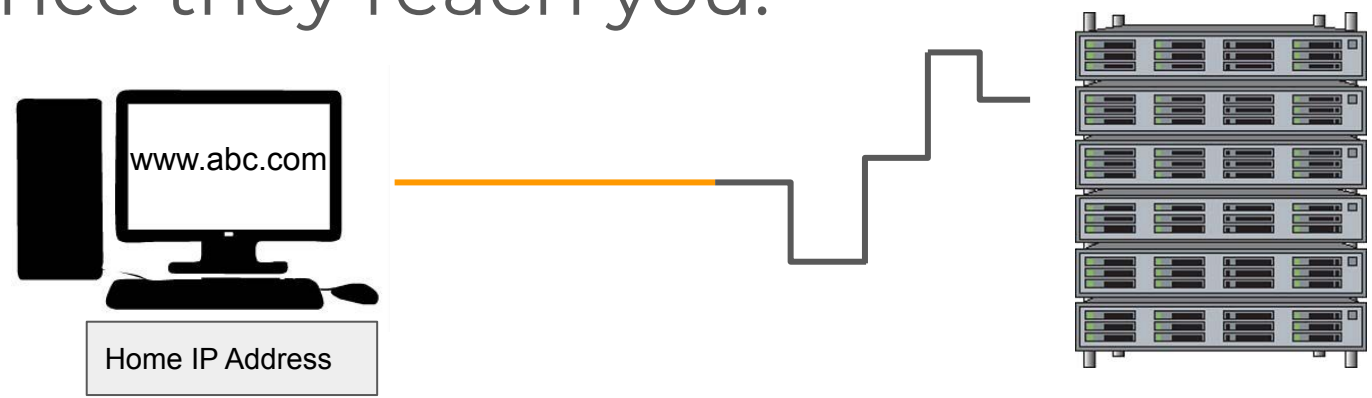
- To solve this, the server sends back the website split up into many packets



- The packets come with instructions on how to get back to you and reassemble once they reach you.



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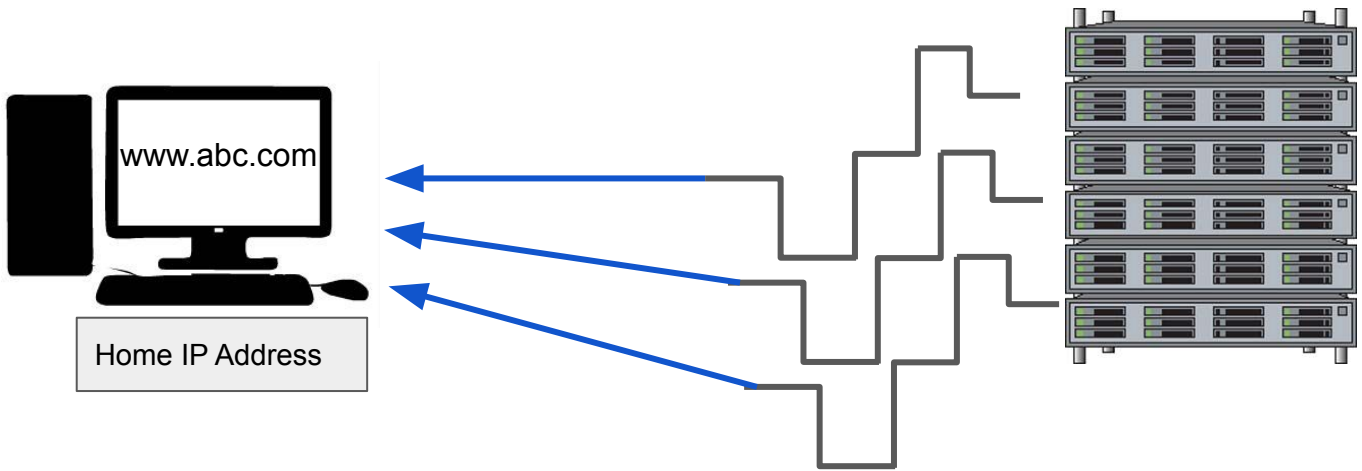
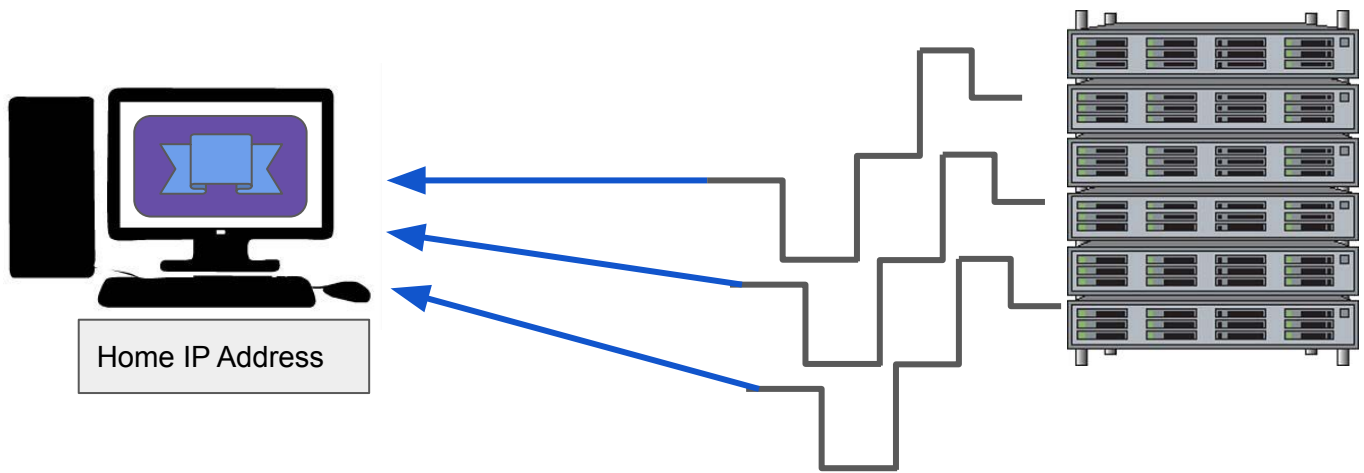
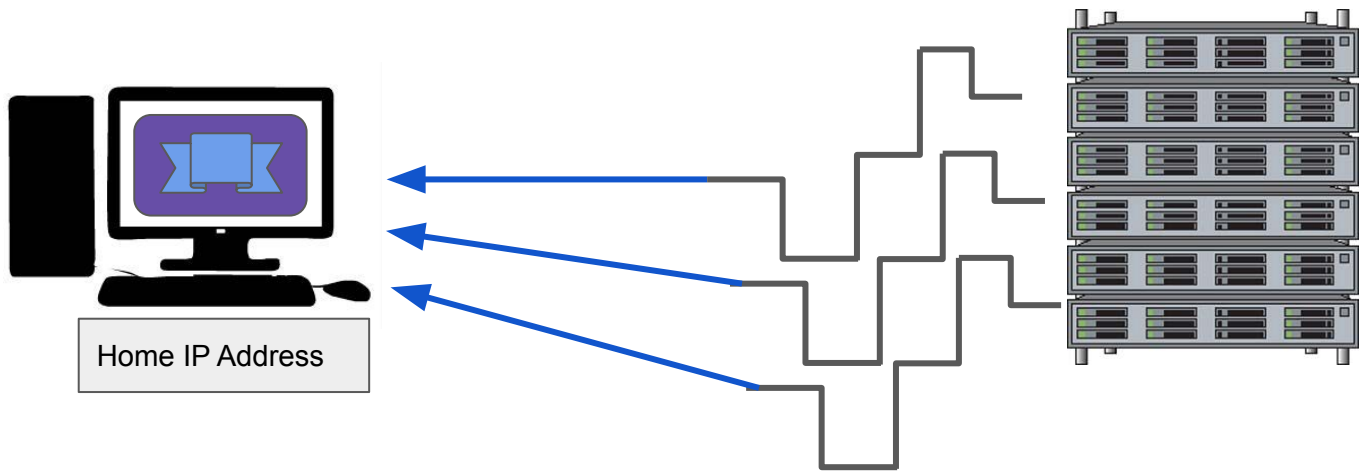
- The packets don’t care how they get to you, just the final location.



- Once the packets reach you, they are reassembled to show the page.



- All of this moves at close to the speed of light, so it happens very fast.



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- This is a higher level explanation, but for our purposes it is all we need to know for now.
- Let’s continue by discussing what the term “Full-Stack” means.

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- There are two main components of a website
    - The Front-End
    - The Back-End

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- The Front-End is what you see as a user on the website.
- The Back-End is the technology used to actually decide what to show you on the Front-End.

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- The Front-End revolves around three technologies:
    - HTML
    - CSS
    - Javascript

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- You will hear about Front-End technologies such as jQuery and Bootstrap, but those are all built using the previous three.

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- HTML - HyperText Markup language
- Every website will have HTML, it is the structure of a page.
- You can view it by right-clicking and selecting “View Page Source”

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- CSS - Cascading Style Sheets
- CSS is the actual styling of the website.
- Colors, fonts, borders, etc is all defined by CSS.
- CSS is not mandatory, but almost all sites have it.

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- Javascript allows you to add interactivity to the website, including programming logic.
- Any site with interactivity uses Javascript in some way, otherwise the site is “static”.

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- The first half of the course focuses on the Front-End.
- The Front-End always uses those three technologies.
- However the Back-End is where a multitude of options come up!

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- The Back-End of a site has three components:
    - The Language
    - The Framework
    - The Database

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- Technologies such as Php, Node.js, Ruby/Rails, Java, Python, etc. are all viable options for a website.
- So how do we decide which to choose?

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- Our course Back-End uses:
    - Python as the language
    - Django as the Framework
    - SQLite as the Database

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- Python is a great language to learn, it's simple, powerful, and has many libraries.
- Django is the most popular framework for Python, it's fast, secure, and scalable.
- SQLite comes with Django and Python making it an easy choice.

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- As we continue along with the course we will be discussing each of these topics in much more detail, but for now you should have a high-level view of what we use in this course to turn you into a Full-Stack Web Developer with Django!

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