HTML and Web Fundamentals

<!-- Learning Module 1 -->

Internet

Global collection of networks. It is an **infrastructure** allowing for devices which are a part of a network to communicate.

World Wide Web

Collection of information stored on web servers and shared across the Internet. It is a **service** which uses the infrastructure of the Internet.

Much of the internet is connected through copper wire, satellite and fiber optic cables all over the planet. The infrastructure is owned and maintained by public and private entities.
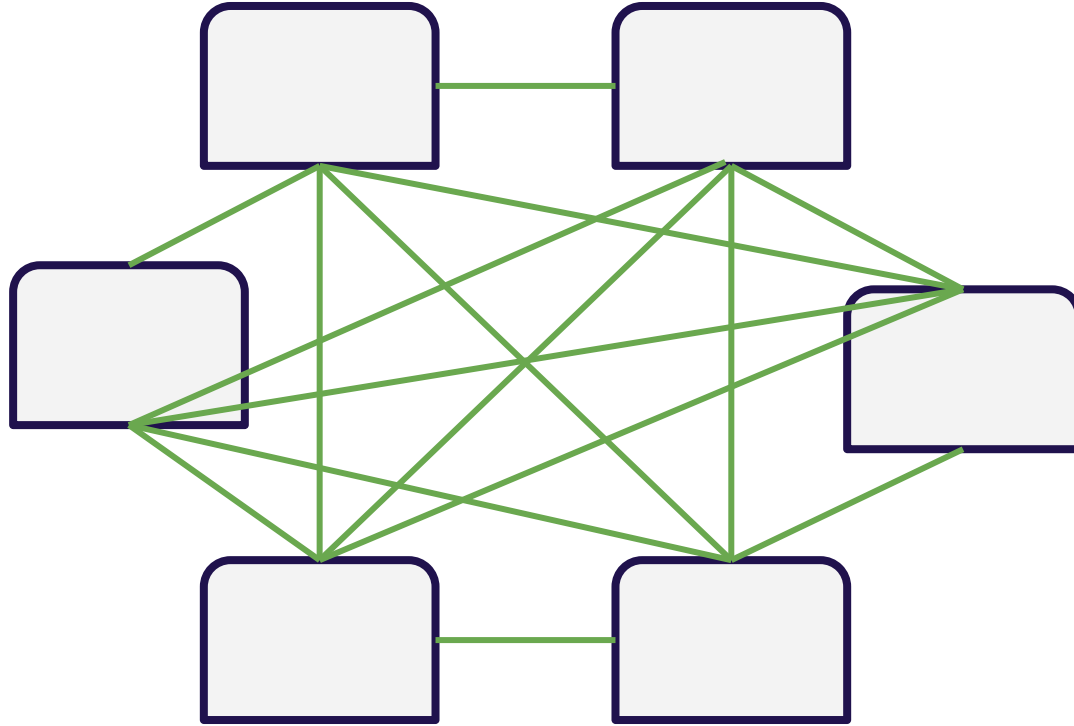
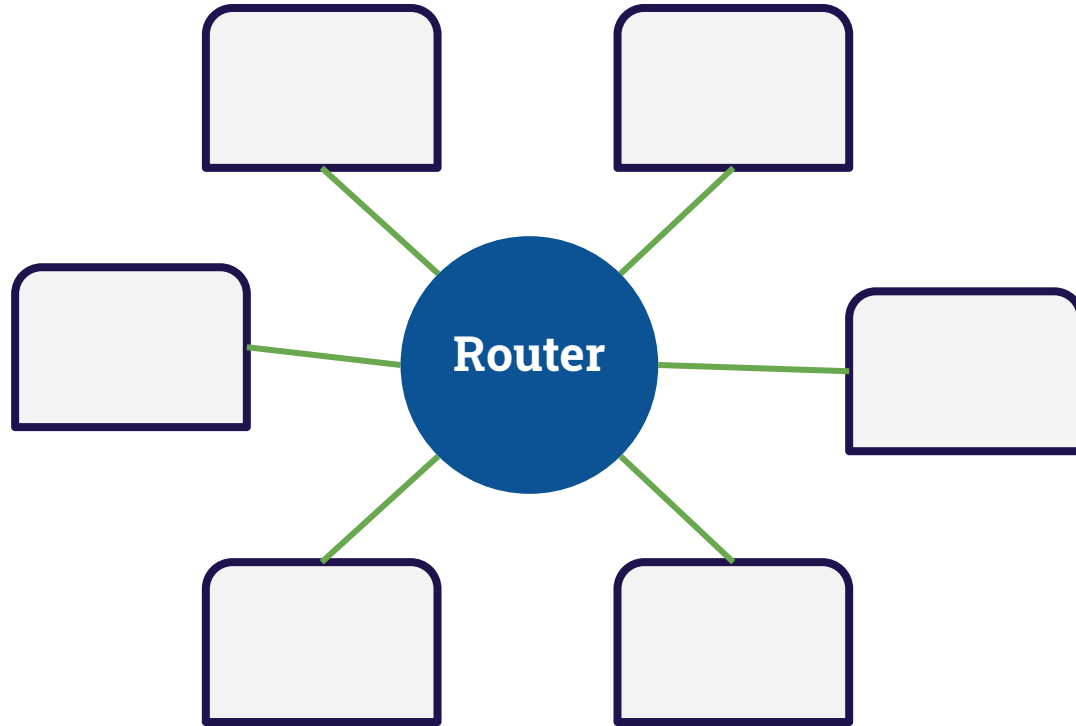Access to the 'internet' is controlled by Internet Service Providers - ISP
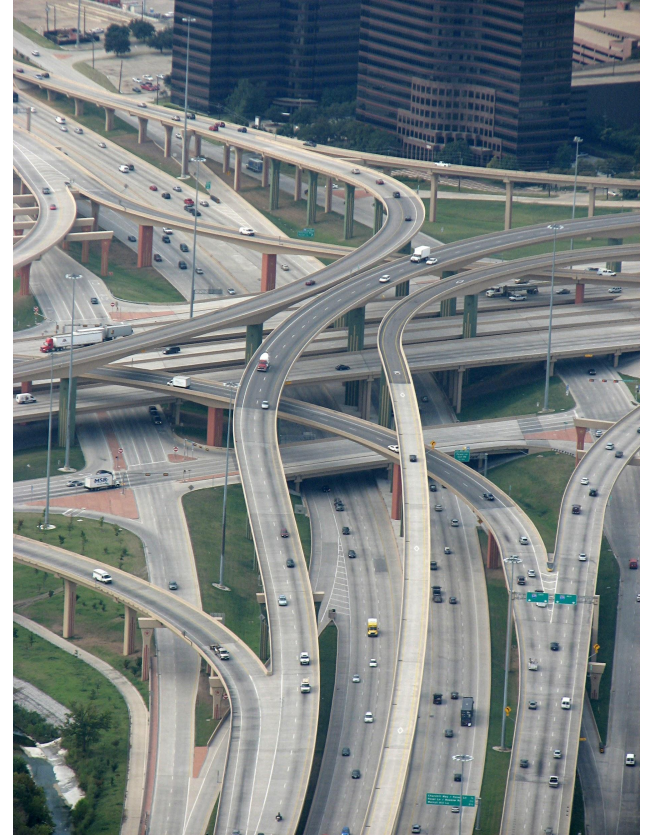
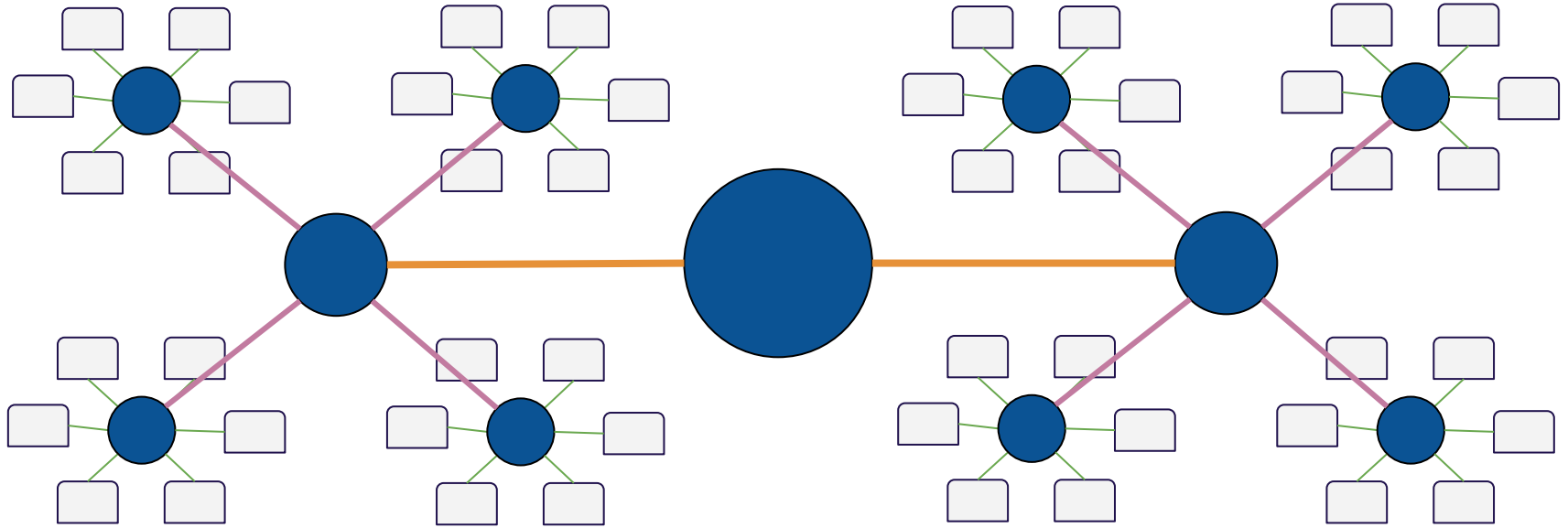# To communicate, computers need to be connected either wirelessly or physically.
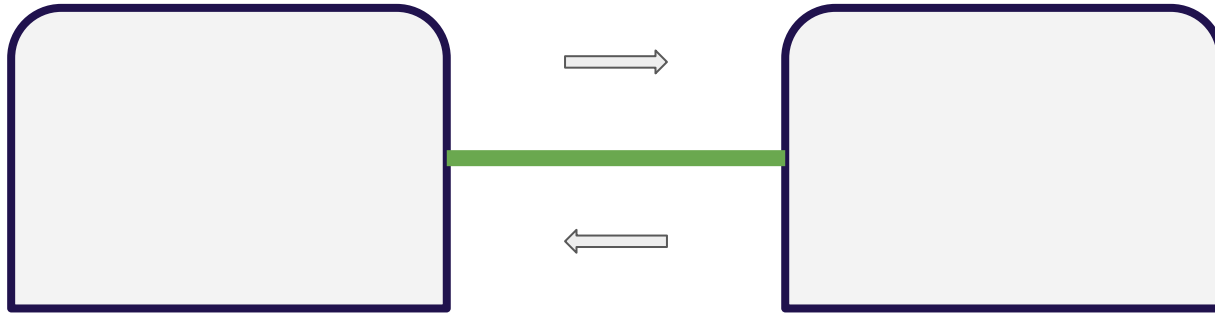
Computers on a network can communicate since they are connected to each other.

Routers ease this communication by moving packets of data between computers on a network (like a switchboard)
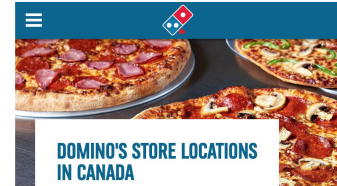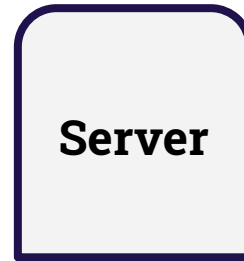
This can be scaled to allow for huge amounts of interconnectivity.

No one owns the internet really, it's made up of many different pieces

The World Wide Web is a service which uses the infrastructure of the Internet

My Laptop

Client

Server

DOMINO'S STORE LOCATIONS IN CANADA

Domino's Pizza Online lets you browse coupons and Order Online.

Websites are collections of files. To access a website on the internet from your laptop, you would need to be connected to the internet through an ISP and the files would need to be on a web server. Your laptop would need to communicate with the web server.

pizza.dominos.ca

Browser

Server
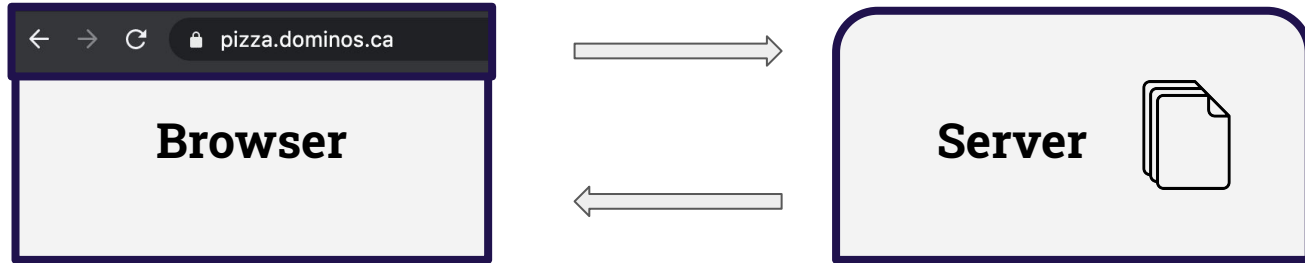
Communication over networks is controlled by protocols. Like the HyperText Transfer Protocol HTTP.

Browser		Server
← → C 🔒 pizza.dominos.ca	HTTP request → ← HTTP response	📄
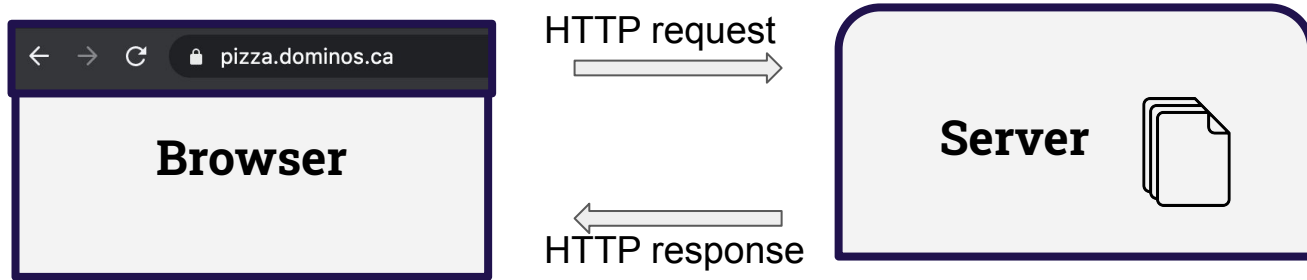
Identifying Devices

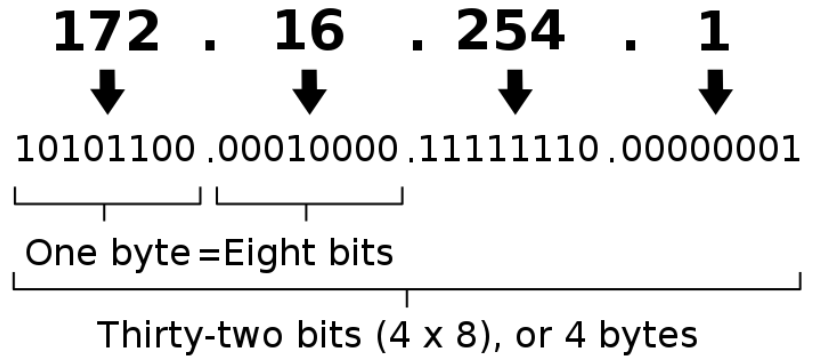Every device connected to the Internet has an Internet Protocol address which is a series of bits represented by numbers

The **Domain Name System** attributes a human readable name to these IP's and is meant to scale.

An IPv4 address (dotted-decimal notation)

172 . 16 . 254 . 1

10101100 . 00010000 . 11111110 . 00000001

One byte = Eight bits

Thirty-two bits (4 x 8), or 4 bytes

1 DNS lookup

http://recipes.com/apple-pie.html ➡ 176.432.2.2 = http://176.432.2.2/apple-pie.html

Chrome

← → ↻ http://recipes.com/apple-pie.html

2 Request →
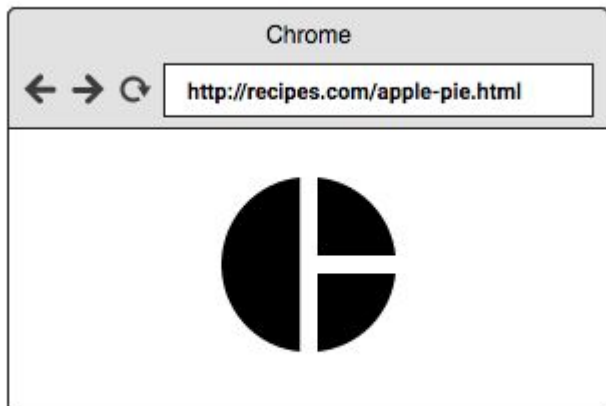
Hello my name is
176.432.2.2

3 ← Response
apple-pie.html

The **URL** www.yoursite.com will bring you www.yoursite.com/index.html

If the server can't find a web page, it will respond with a **Server Response Code** of 404 which means page not found https://www.georgiancollege.ca/404-not-found/

If the server can't find an embedded or linked resource like an image, it will still load the webpage just without the resource

Interpreted by the browser
CLIENT

The foundation of all web pages - **HTML**

HTML - It's impossible to have a web page without it!

An HTML document is made up of **Three basic components**

Text Content
References to other files
HTML 'Markup' - These are your

HYPER**T**EXT **M**ARKUP **L**ANGUAGE

What do I mean by Markup?

'**Mark-up**' refers to the bits of HTML (tags, elements, attributes within tags)

`<h1>`An Important Heading`</h1>`

When we 'mark-up' page content, we're building the page structure based on the meaning and roles of the content

ALL content on your web page, from headings and paragraphs to images and more specific textual pieces should be contained *within* HTML tags.

Marking-up a web page is kind of like organizing a box full of smaller boxes.
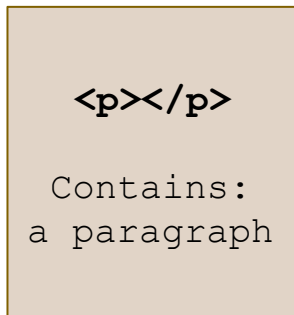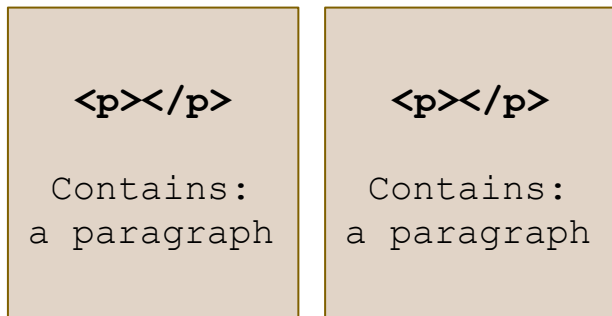
Each box serves a purpose

The boxes are labelled based on the meaning, purpose or role of the content inside.

It doesn't matter how the page looks in the browser at this stage!

You can have duplicates of certain 'box' types, but not of others.

This is fine.

This would be confusing

<p></p>

Contains:
a paragraph

<p></p>

Contains:
a paragraph

<p></p>

Contains:
a paragraph

<h1></h1>

Contains:
Most important heading

<h1></h1>

Contains:
Most important heading

<h1></h1>

Contains:
Most important heading
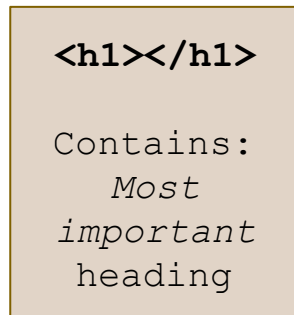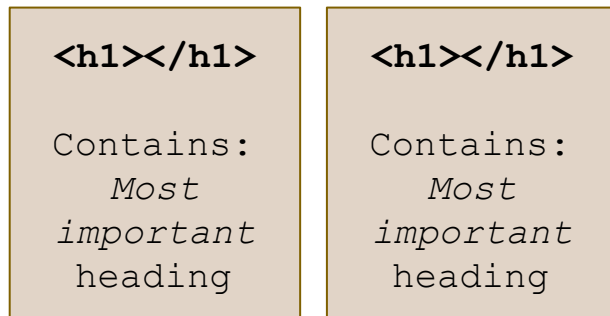
Purpose of HTML is to provide our web pages with structure.

This structure is not simply *presentational* - it should be *meaningful.*

Correct, Semantic markup with **HTML5** allows for better communication on the web.

Meaningful HTML Elements

- Allow for better machine understanding of text content by providing more information and context

- Provide logical structure that helps developers to maintain web pages

- Create a structured document keeping our web pages understandable and concise for the end user.

- Easier to use with JS and CSS

Page sectioning and Document Outline

header   aside

nav   footer

main   div

article   h1 - h6

section   p

When we create **semantic** and **valid HTML**, we contribute to the progression of web technologies and the widespread access to the internet.

The more meaningful, organized and correct our web pages are - the greater their ability to adapt to new technological progressions.

The more people who can access the web, the more complete it becomes.