HTML Links Tutorial: Understanding URL Protocols

What Are HTML Links?

HTML links (also called hyperlinks) are what make the web "web-like" - they connect different pages, files, and resources together. When you create a link in HTML, you use the `<a>` tag (which stands for "anchor").

The basic structure of an HTML link is:

```html
<a href="URL">Link Text</a>
```

Understanding URL Protocols

The beginning part of a URL (before the `://`) is called a **protocol**. It tells the browser how to handle the link. Let's explore the main protocols you'll encounter:

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1. File Protocol - `file://`

Purpose: Links to files stored locally on your computer

Format: `file:///path/to/file`

Example:

```html
<a href="file:///C:/temp/image.png">View Local Image</a>
```

When to use:

- Linking to images, documents, or other files on your computer
- Creating offline websites for personal use
- Testing websites before uploading them to the internet

Important Notes:

- Only works on the computer where the file exists
- Won't work for other people visiting your website

- Three slashes (`///`) are used after `file:`

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2. FTP Protocol - `ftp://`

Purpose: Links to files on FTP (File Transfer Protocol) servers for downloading/uploading

Format: `ftp://server.com/path/to/file`

Example:

```html
<a href="ftp://www.example.com/somefile.txt">Download Text File</a>
```

When to use:

- Downloading large files from FTP servers
- Accessing file repositories
- Linking to software downloads

What happens: Your browser will typically download the file or open it in a new tab

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3. HTTP Protocol - `http://`

Purpose: Standard web protocol for unencrypted websites

Format: `http://website.com/page`

Example:

```html
<a href="http://www.example.com/">Visit Example Site</a>
```

When to use:

- Linking to older websites that don't use encryption
- Local development servers
- Internal company websites

Important: Most modern websites use HTTPS instead for security

4. HTTPS Protocol - `https://`

Purpose: Secure, encrypted web protocol (the "S" stands for "Secure")

Format: `https://website.com/page`

Example:

```html
<a href="https://www.example.com/">Visit Secure Example Site</a>
```

When to use:

- Linking to modern websites (most websites today)
- Any site that handles sensitive information
- Shopping websites, banks, social media

Why it's better: Data between your browser and the website is encrypted and secure

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5. Mailto Protocol - `mailto:`

Purpose: Opens the user's email program to send an email

Format: `mailto:email@address.com`

Basic Example:

```html
<a href="mailto:sue@msn.com">Send Email to Sue</a>
```

Advanced Examples:

```html
```

```html
<!-- Email with subject line -->
<a href="mailto:teacher@school.edu?subject=Homework Question">Email Teacher</a>

<!-- Email with subject and body text -->
<a href="mailto:friend@email.com?subject=Hey!&body=How are you doing?">Email Friend</a>

<!-- Email multiple people -->
<a href="mailto:person1@email.com,person2@email.com">Email Multiple People</a>
```

When to use:

- Contact forms on websites

- "Email us" links

- Quick way to let visitors contact you

Complete HTML Example

Here's a full HTML page showing all these link types in action:

```
html
```

```html
<!DOCTYPE html>
<html>
<head>
    <title>Link Protocol Examples</title>
</head>
<body>
    <h1>Different Types of Links</h1>

    <h2>Web Links</h2>
    <ul>
        <li><a href="https://www.google.com">Google (Secure)</a></li>
        <li><a href="http://www.example.com">Example Site (Not Secure)</a></li>
    </ul>

    <h2>File Links</h2>
    <ul>
        <li><a href="file:///C:/Users/Student/Documents/essay.pdf">My Essay (Local File)</a></li>
        <li><a href="ftp://files.example.com/software.zip">Download Software</a></li>
    </ul>

    <h2>Communication</h2>
    <ul>
        <li><a href="mailto:teacher@school.edu">Email My Teacher</a></li>
        <li><a href="mailto:study-group@school.edu?subject=Study Session">Email Study Group</a></li>
    </ul>
</body>
</html>
```

Quick Reference Guide

Protocol	Purpose	Security	Example
file://	Local files	Local only	file:///C:/temp/image.png
ftp://	File downloads	Not encrypted	ftp://server.com/file.zip
http://	Web pages	Not encrypted	http://www.example.com
https://	Web pages	Encrypted ✅	https://www.google.com
mailto:	Email	Depends on email	mailto:friend@email.com

Tips for High School Students

1. **Always prefer HTTPS over HTTP** when both are available

2. **Test your file:// links** - they only work on your computer

3. **Use mailto: links** to make it easy for visitors to contact you

4. **Be careful with FTP links** - some schools block FTP access

5. **Remember the colon** - it's `mailto:` not `mailto://`

Practice Exercise

Create an HTML page with:

- A link to your favorite secure website (https://)

- A mailto link to your school email

- A link to a local file (that you create)

Try opening your HTML file in a browser and test each link!