Introduction to Web Development

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Agenda

1 - History of the internet

2 - What is the difference between the Internet and the Web?

3 - Web Versions

4 - Servers Talk

5 - Roadmap

6 - Website Basics: HTML, CSS & JavaScript

1 - History of the Internet

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History of the Internet

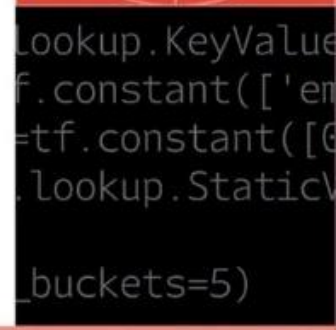
1950s: The Idea Begins

Cold War pushed the U.S. to develop a decentralized communication system

1960s: The First Network

ARPA created ARPANET the first computer network

First message sent on October 29, 1969 ("lo" due to system crash)



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History of the Internet

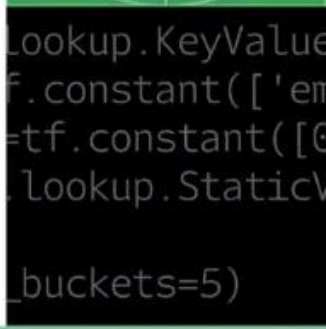
1970s: Internet Foundations

Development of TCP/IP protocols, standardizing data transfer

1980s: Early Internet Growth

TCP/IP adopted as the universal protocol (1983)

Internet mainly used by researchers and government institutions



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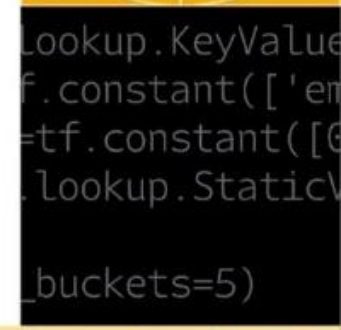
History of the Internet

1989: The Birth of the Web

Tim Berners-Lee invents the **World Wide Web (WWW)** at CERN
Introduces URLs, making websites easily accessible

1990s: Internet Becomes Popular

First web browsers (Mosaic, Netscape) make browsing user-friendly
Rise of major websites like Yahoo, Amazon, and Google
Internet expands beyond universities and enters homes



2 - Difference Between Internet & Web

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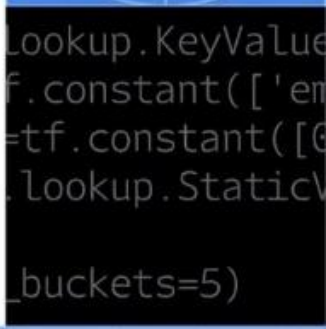
Difference Between the Internet & the Web

The Internet:

A global network that connects devices and transfers data
Like a transportation system (roads, bridges, stations)
Supports various services beyond websites

The Web (WWW):

A part of the internet that allows browsing websites
Works through browsers like Chrome & Firefox
Uses URLs to access sites like Google & YouTube



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Difference Between the Internet & the Web

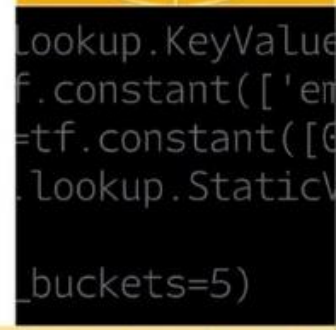
Other Internet Services (Beyond the Web):

Email (Gmail, Outlook)

Video Calls (Skype, Zoom)

Online Gaming

Messaging Apps (WhatsApp, Telegram)



3 - Web Versions

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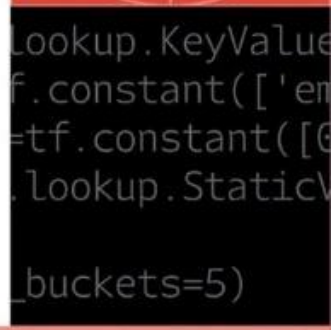
Web Versions

Web 1.0 (Static Web):

First version of the web

Static content, no user interaction (read-only)

Websites built with basic HTML



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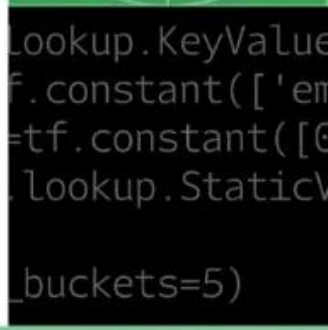
Web Versions

Web 2.0 (Interactive Web):

Social media era (Facebook, Twitter, YouTube)

Users can create accounts, comment, react, and interact

Dynamic and user-generated content



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Web Versions

Web 3.0 (Decentralized Web):

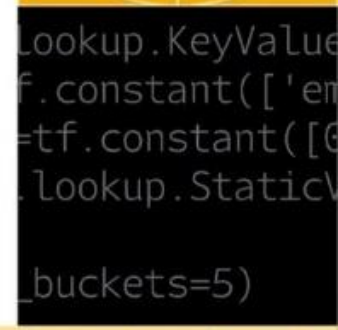
Focuses on decentralization & user control over data

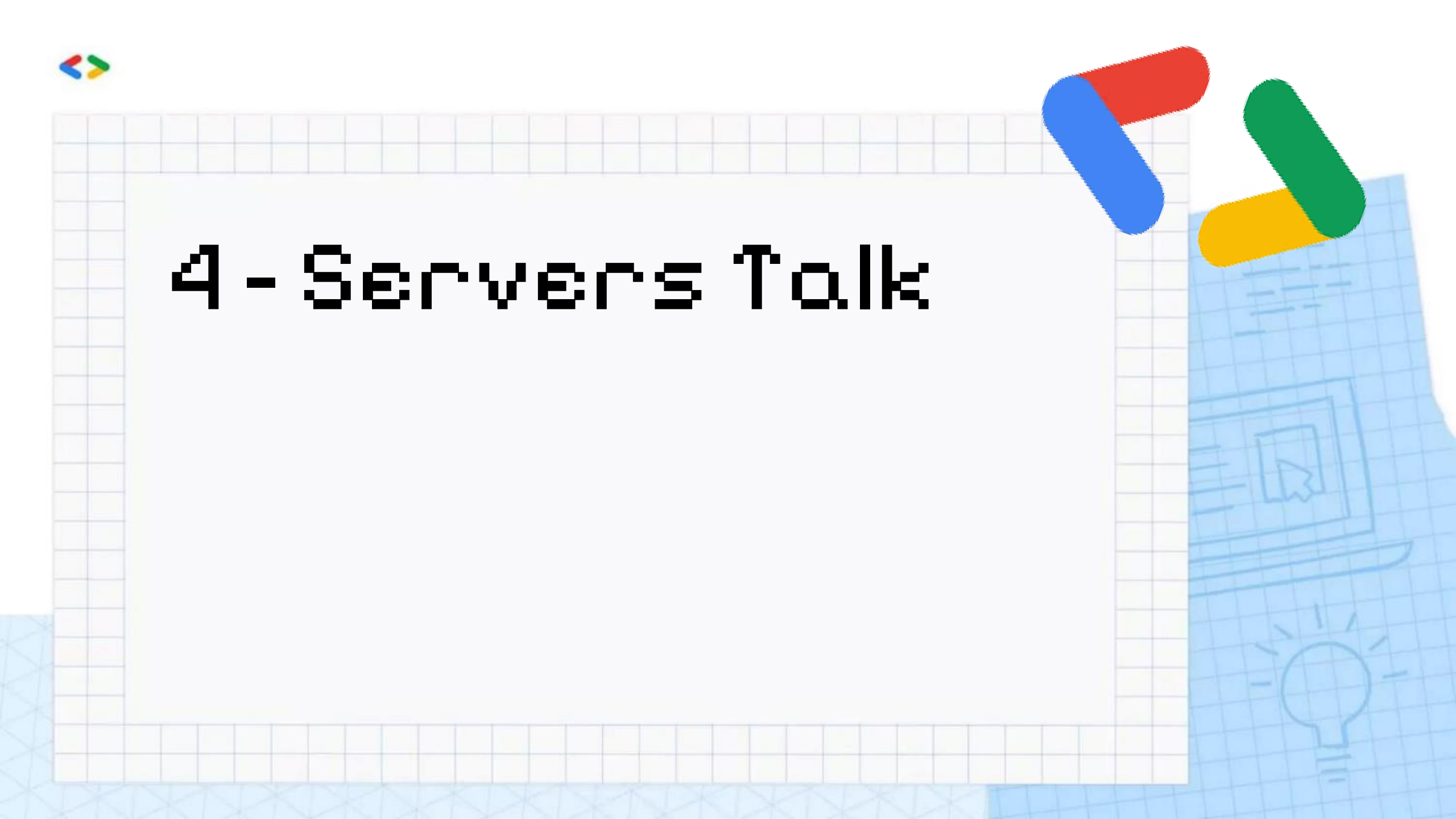
Based on Blockchain technology.

Reduces control from big companies (Google, Facebook, …)

Examples: Bitcoin (decentralized digital currency)

Still in early stages, facing challenges like cost & speed.





4 - Servers Talk

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Servers Talk

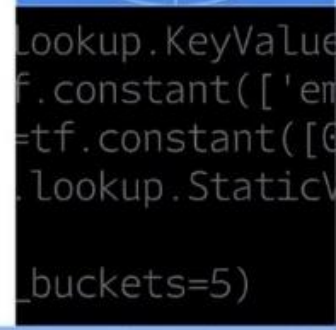
Servers :

A server is a high-performance computer designed to run continuously for years

Hosting companies provide hosting services, allowing users to upload their websites

Each hosted website gets an IP address for access

When a user enters the IP in a browser, the server sends the website files back



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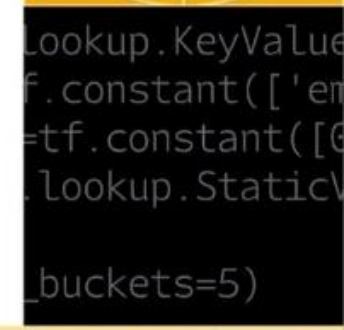
Servers Talk

Domain Names :

IP addresses are numeric (e.g., 142.251.37.174), making them hard to remember

Domain names replace IPs with human-readable addresses (e.g., google.com)



```
D:\>ping google.com

Pinging google.com [142.251.37.174] with 32 bytes of data:
Reply from 142.251.37.174: bytes=32 time=73ms TTL=117
Reply from 142.251.37.174: bytes=32 time=82ms TTL=117
Reply from 142.251.37.174: bytes=32 time=72ms TTL=117
Reply from 142.251.37.174: bytes=32 time=74ms TTL=117

Ping statistics for 142.251.37.174:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 72ms, Maximum = 82ms, Average = 75ms
```

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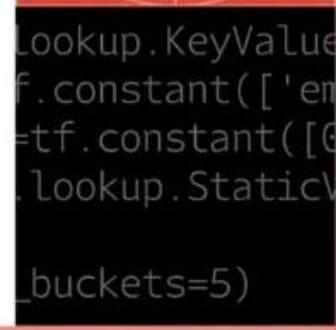
Servers Talk

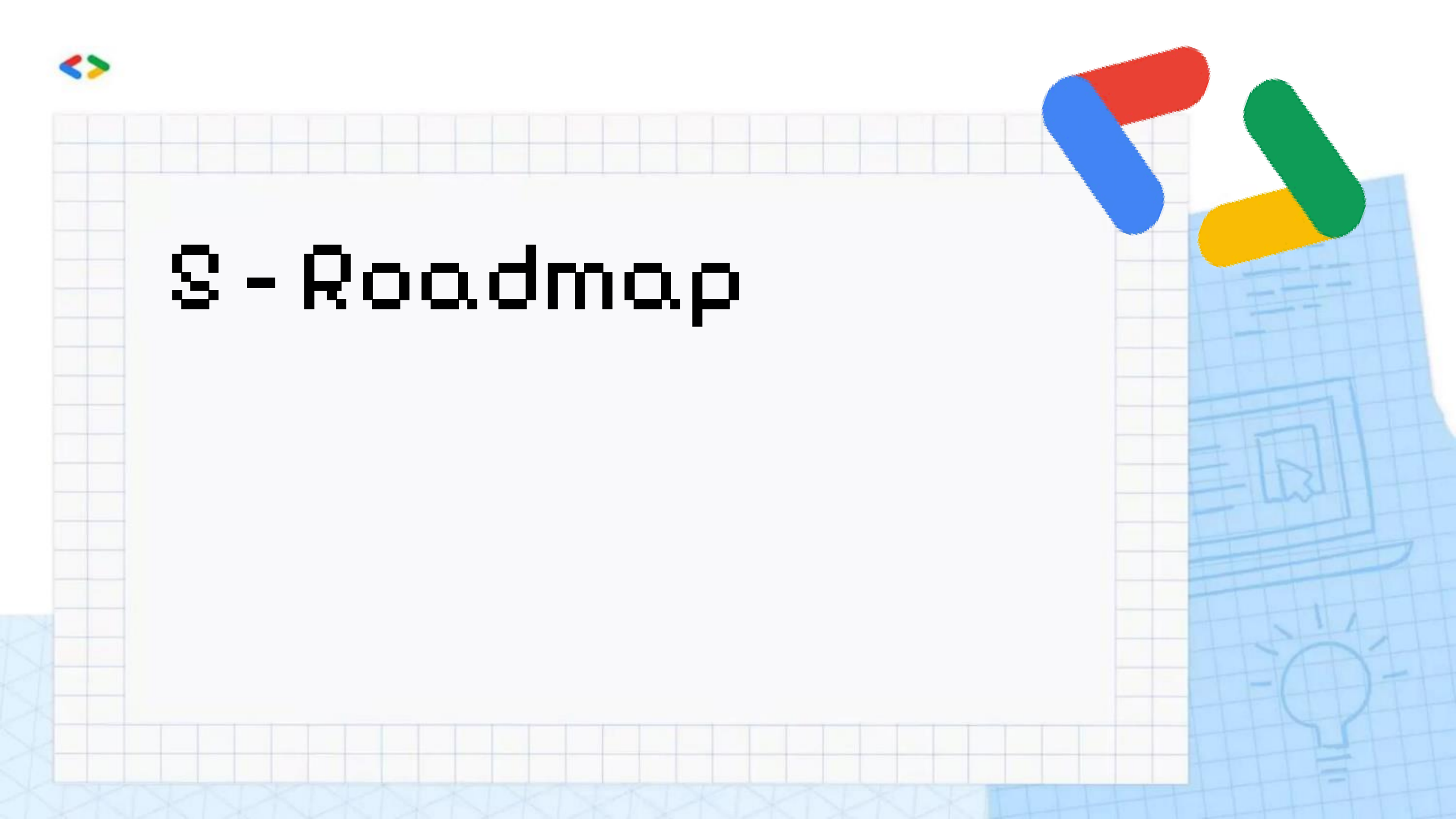
Domain Structure :

Top-Level Domain (TLD) -> The extension (e.g., .com, .net, .org)

Second-Level Domain (SLD) -> The main website name (e.g., "google" in google.com)

Subdomain -> A section of the main domain (e.g., blog.example.com)





9 - Roadmap

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Web Development Roadmap

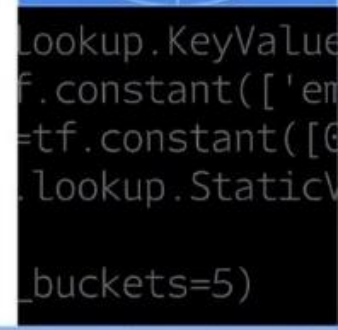
Front-End Development:

Structure & Styling:

HTML: The basic structure (like a skeleton)

CSS: Styling, colors, animations (like clothing)

CSS Frameworks: Bootstrap or Tailwind



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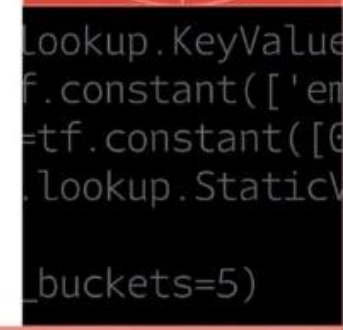
Web Development Roadmap

Front-End Development:

Interactivity & Logic:

JavaScript (JS): Adds functionality (clicks, animations, etc.)

Key Concepts: DOM, BOM, JSON, AJAX, Jest.



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Web Development Roadmap

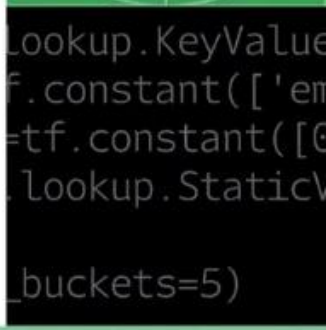
Front-End Development:

Advanced Tools:

Pug: Simplified HTML with programming-like features

Sass: CSS with extra features (variables, nesting)

Gulp: Automates tasks like file compression & code conversion.



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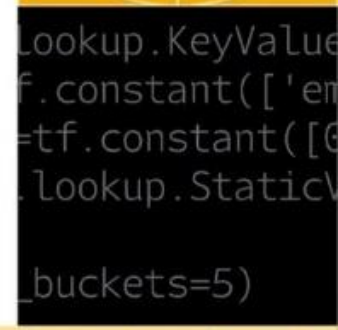
Web Development Roadmap

Front-End Development:

Front-End Frameworks:

React, Vue, Angular

Extra: Three.js for graphics.



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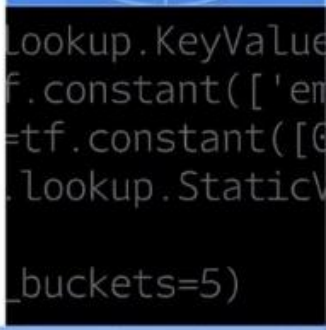
Web Development Roadmap

Back-End Development:

Basic Knowledge: HTML, CSS, JavaScript (basic syntax).



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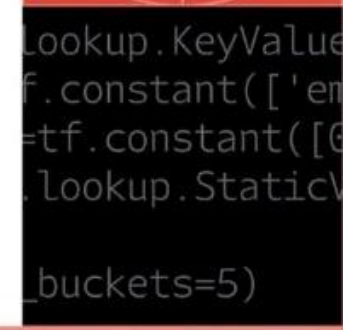
Web Development Roadmap

Back-End Development:

Choosing a Backend Path:

JavaScript-based: Node.js + Express.js (good for Full-Stack)

Databases: MongoDB (often used with Node.js).



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Web Development Roadmap

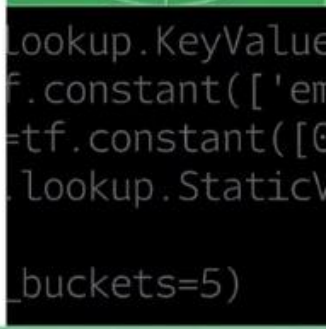
Back-End Development:

Alternative Back-End Paths:

PHP + Laravel

Python + Django

C# + .NET



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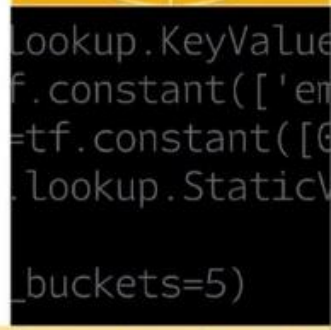
Web Development Roadmap

Version Control (Git & GitHub):

Used for team collaboration & tracking code changes.



6 - Website Basics: HTML, CSS & JavaScript

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Classification of Programming Languages

Programming Languages: Used to develop full applications and software

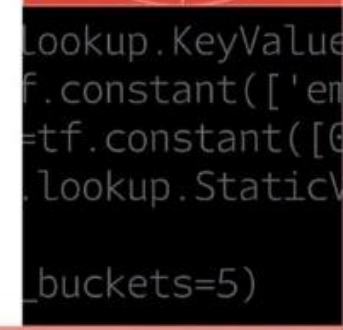
(e.g., C, C++, Java, Python)

Scripting Languages: Used for automating tasks and running scripts without compilation

(e.g., JavaScript, Python, PHP, Bash)

Markup Languages: Used for structuring and presenting data, not actual programming

(e.g., HTML, XML, Markdown).



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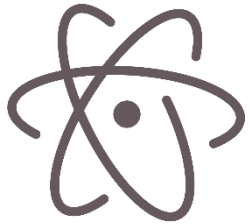
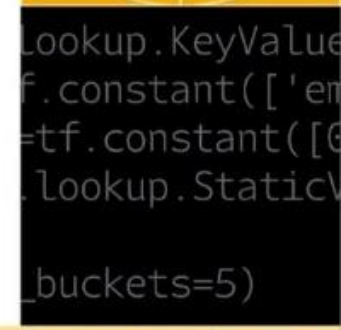
Where will we write



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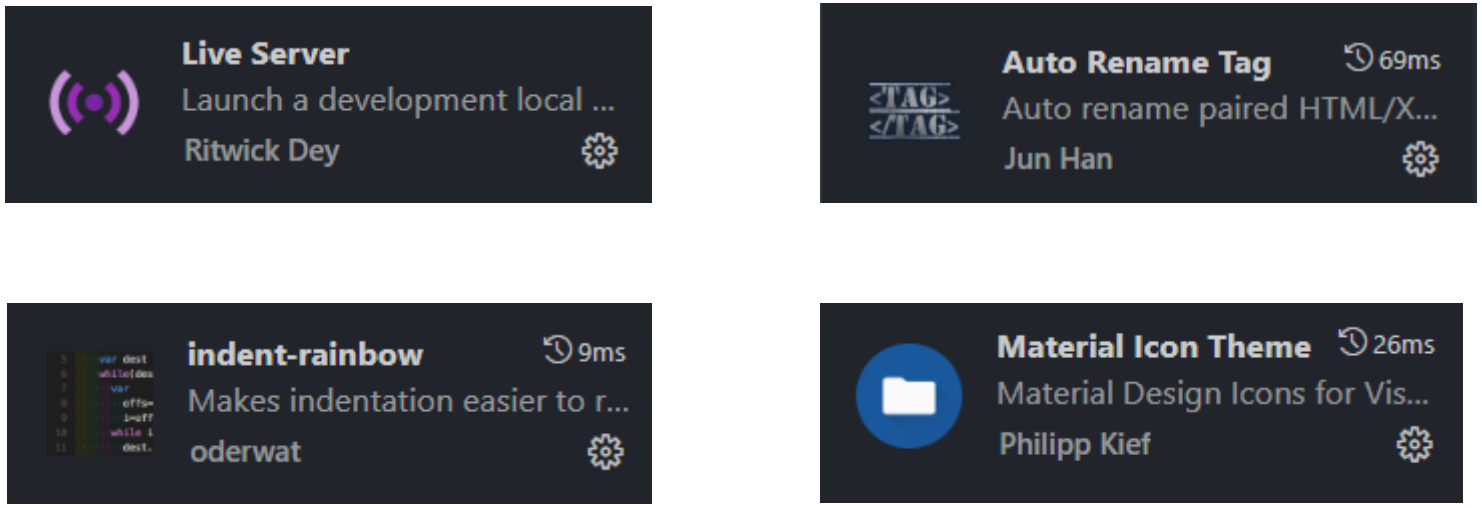
Extensions you need



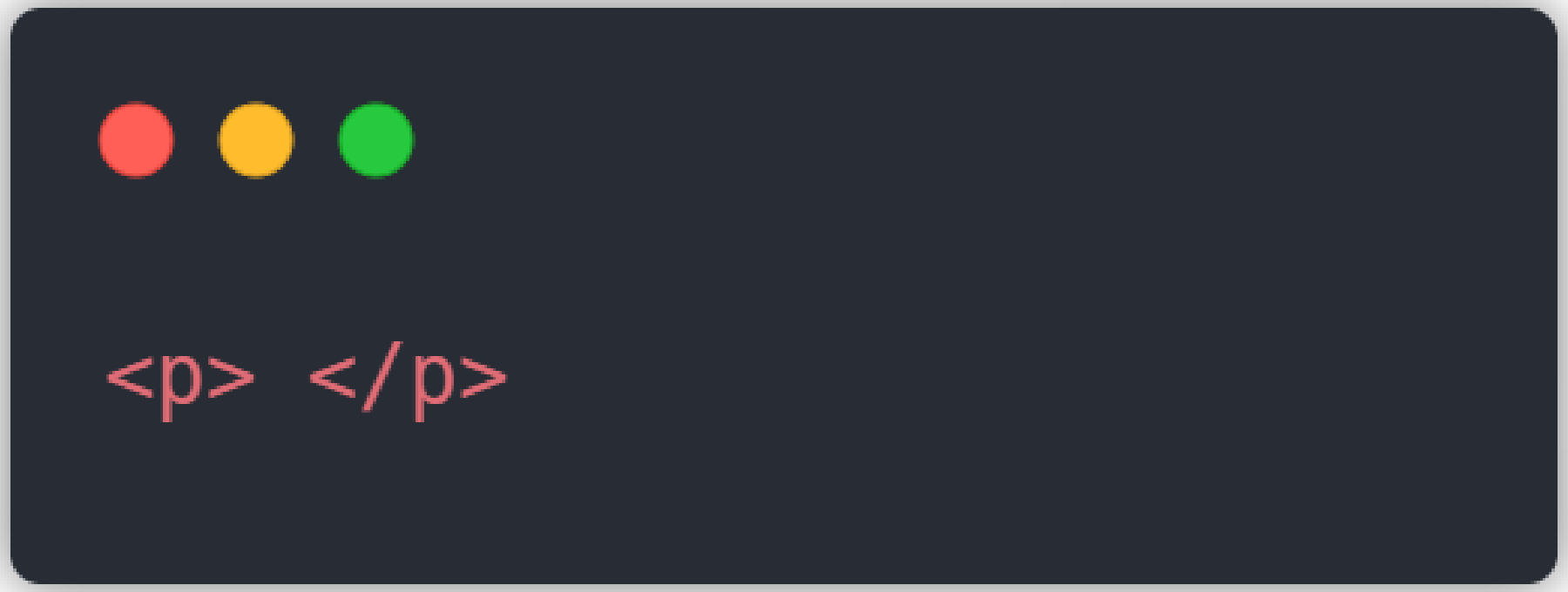
HTML

Hyper text Markup Language

```html
<!DOCTYPE html>
<html lang="en">
    <head>
        <meta charset="UTF-8">
        <meta name="viewport" content="width=device-width, initial-scale=1.0">
        <title></title>
    </head>
    <body>

    </body>
</html>
```

```
<h1>     </h1>
<h2>     </h2>
<h3>     </h3>
<h4>     </h4>
<h5>     </h5>
<h6>     </h6>
```



```html
<a href="https://www.google.com" target="_blank">Google Link</a>


<img src="image.jpg" alt="img logo">
```

```html
<div>
    <h2>This is inside a div</h2>
</div>


<span>This is inside a span</span>
```

```html
<ul>
    <li>Item in an unordered list</li>
    <li>Another item</li>
</ul>



<ol>
    <li>First item in an ordered list</li>
    <li>Second item</li>
</ol>
```

```html
<form>

    <label for="name">Name:</label>
    <input type="text" id="name" required>

    <label for="email">Email:</label>
    <input type="email" id="email" required>

    <button type="submit">Submit</button>

</form>
```

CSS

Cascading Style Sheets

```
<style>
    body {
        background-color: red;
    }
</style>



<body style="background-color: red;">

</body>
```

```html
<head>

    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title> </title>

    <link rel="stylesheet" href="styles.css">

</head>
```

```css
body {
    background-color: #f4f4f4;
    color: #333;
    font-family: Arial, sans-serif;
}

h1 {
    color: blue;
}
```

```css
p {
    font-size: 18px;
    font-weight: bold;
    text-align: center;
    text-decoration: underline;
}
```

```css
div {
    width: 300px;
    height: 200px;
    padding: 20px;
    margin: 10px;
    border: 2px solid black;
    outline: 2px solid black;
}
```

JS

Java Script

```javascript
console.log("Welcome to JavaScript!");


alert("This is an alert message!");
```

```
document.getElementById("myElement").innerHTML = "Content Changed!";
```

Questions?

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Quiz Time

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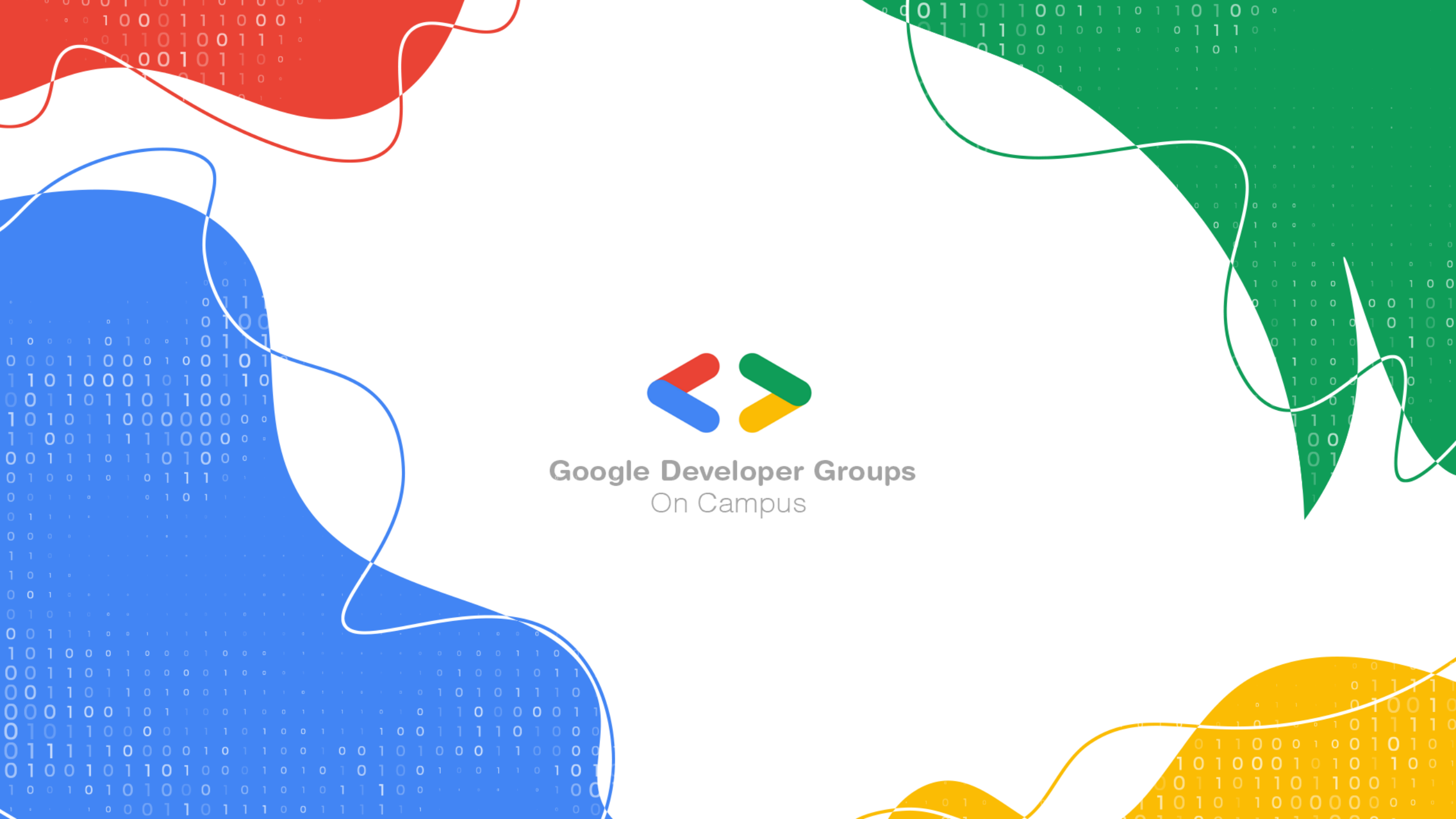
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