BTEC Level 3 Computing

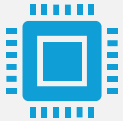
Unit 1 - Principles of Computer Science

Coding For The Web

The issues and implications of implementing code on a web platform in terms of:

Performance.

Platform independence.



Power o protocols and APIs (Application Programming Interface) .

Security.

Coding For The Web

What is Web Performance?

How fast your website loads and responds to users.

How smoothly your website runs.

How much computer resources your website uses.

Why Performance Matters

Users leave slow websites.

Google ranks faster websites higher.

Better user experience means happy visitors.

How to Improve Performance

1. Optimize images to load faster.
2. Use efficient code that runs quickly.
3. Cache (save) information to load faster next time.

What is Platform Independence?

Your website works everywhere:

Different web browsers (Chrome, Firefox, Safari).

Different devices (phones, tablets, computers).

Different operating systems (Windows, Mac, Android).

The RonsTechHub Website can be accessed on any modern browser on any Operating System.

Why Is Platform independence Important

Everyone can access your website.

No users are left out.

Save time by writing code once that works everywhere.

Power Considerations

How much battery your website uses on mobile devices.

How much processing power is needed.

How efficiently your code runs.

Why Power Matters

Saves users' battery life.

Reduces energy consumption.

Better experience on mobile devices.

What are Protocols?

Rules for how websites communicate.

Common protocols:

HTTP: For loading web pages.

HTTPS: For secure connections.

FTP: For file transfers.

What are APIs?

- Application Programming Interface.

- Tools that let websites talk to each other.
- Examples:

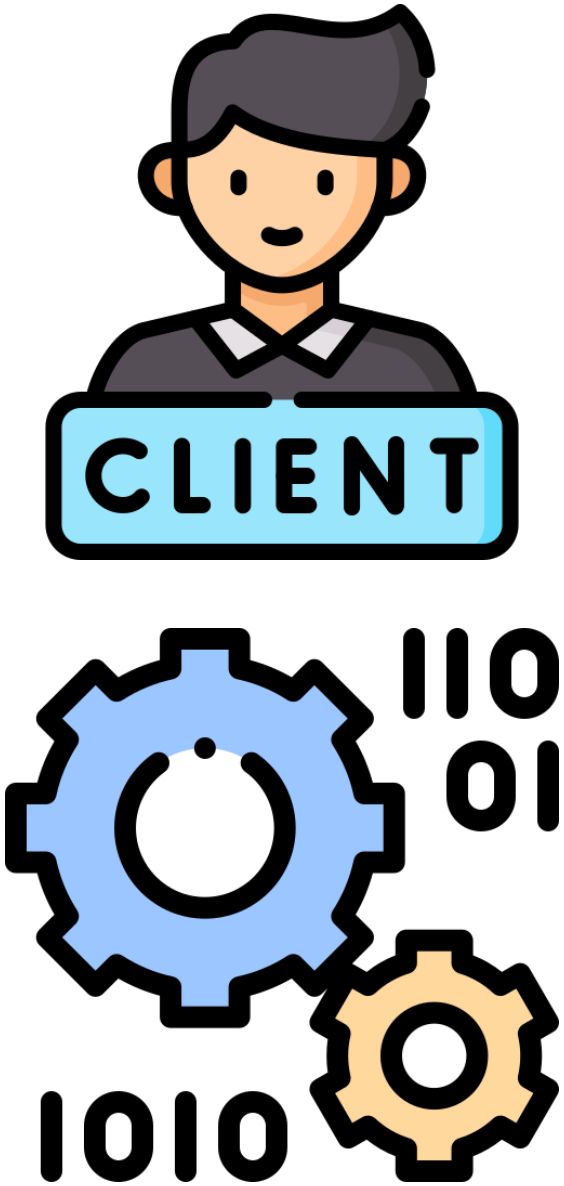
- Weather APIs to show forecasts.
- Payment APIs to process orders.
- Google Maps API to show locations.

Why Web Security Matters

- Protects user information.
- Prevents hackers from attacking.
- Maintains user trust.

Common Security Measures

- Using HTTPS for secure connections.
- Encrypting passwords and sensitive data.
- Checking user permissions.
- Regular security updates.



Client-Side Processing

- Code that runs in the user's web browser.
- Examples:

- Showing/hiding menus.
- Form validation.
- Animations.

Benefits of Client-Side Processing

Faster response times.

Works without internet connection.

Reduces server load.

Client-Side Processing Challenges

Security concerns.

Different browser support.

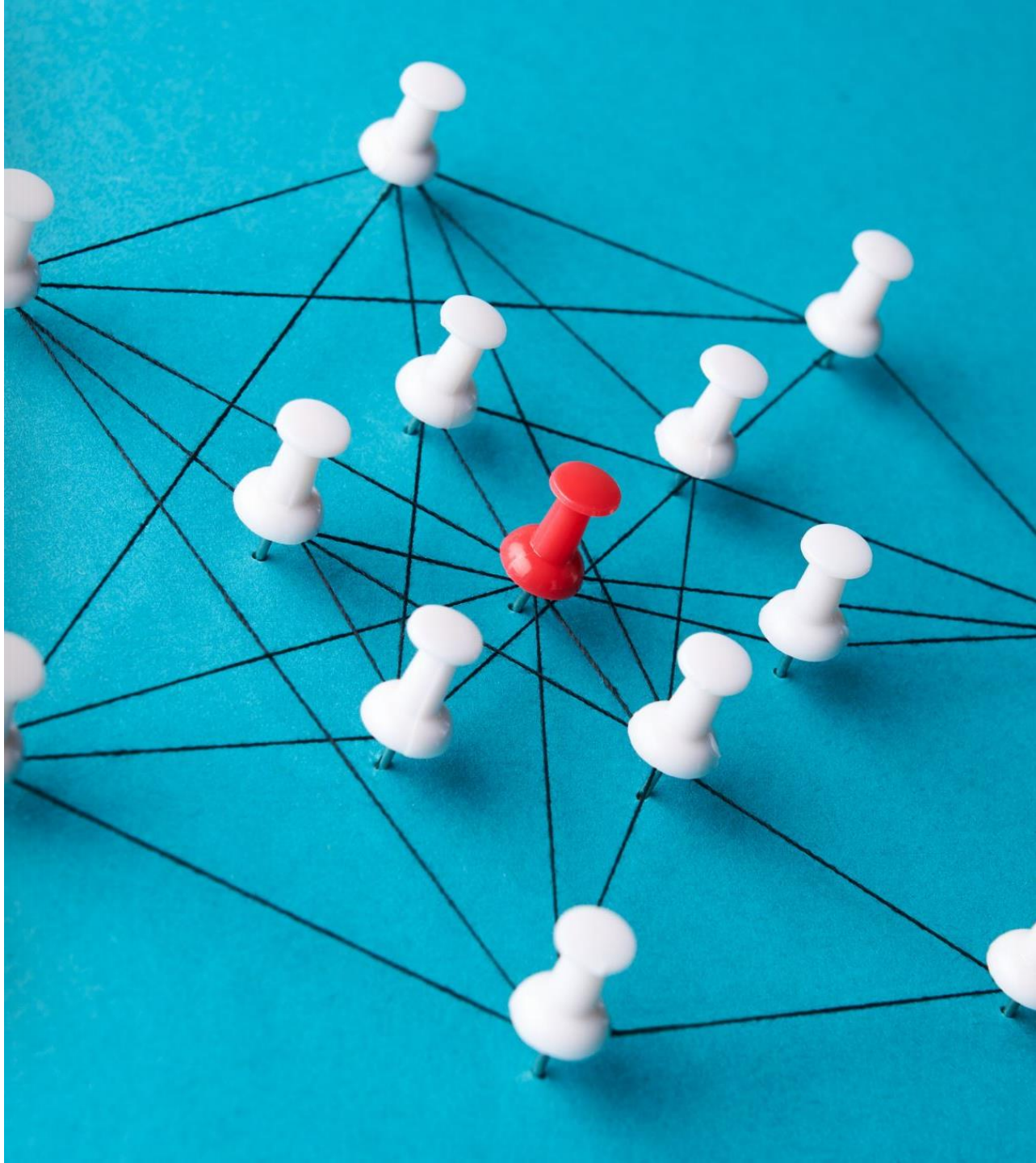
Limited processing power.

Client-Side Process Real World Examples

- Online shopping carts.
- Social media websites.
- Online banking.
- Email services.
- Video streaming sites.

Things To Remember

- Performance affects user satisfaction.
- Websites must work everywhere.
- Security is crucial.
- Balance client and server processing.
- Regular testing and updates are important.



Next Time

Translation