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Web Design and Development for Multimedia

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Week 12

Web Optimization and Performance

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Topic

- Speed optimization (image compression, caching)
- SEO basics for multimedia websites
- Testing tools (Lighthouse, GTmetrix)

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Speed optimization (image compression, caching)

Speed optimization improves **website and application loading performance**.
Faster systems create better user experience and engagement.

Image Compression

- Reduce image file size without significant quality loss
- Use optimized formats (JPEG, PNG, WebP)
- Resize images to match display size
- Compress images before uploading

Caching

- Store frequently used data temporarily
- Reduce repeated server requests
- Improve page loading speed



SEO basics for multimedia websites

Search Engine Optimization (SEO) improves website visibility in search engines. Good SEO helps users find multimedia content more easily.

Key SEO Practices for Multimedia

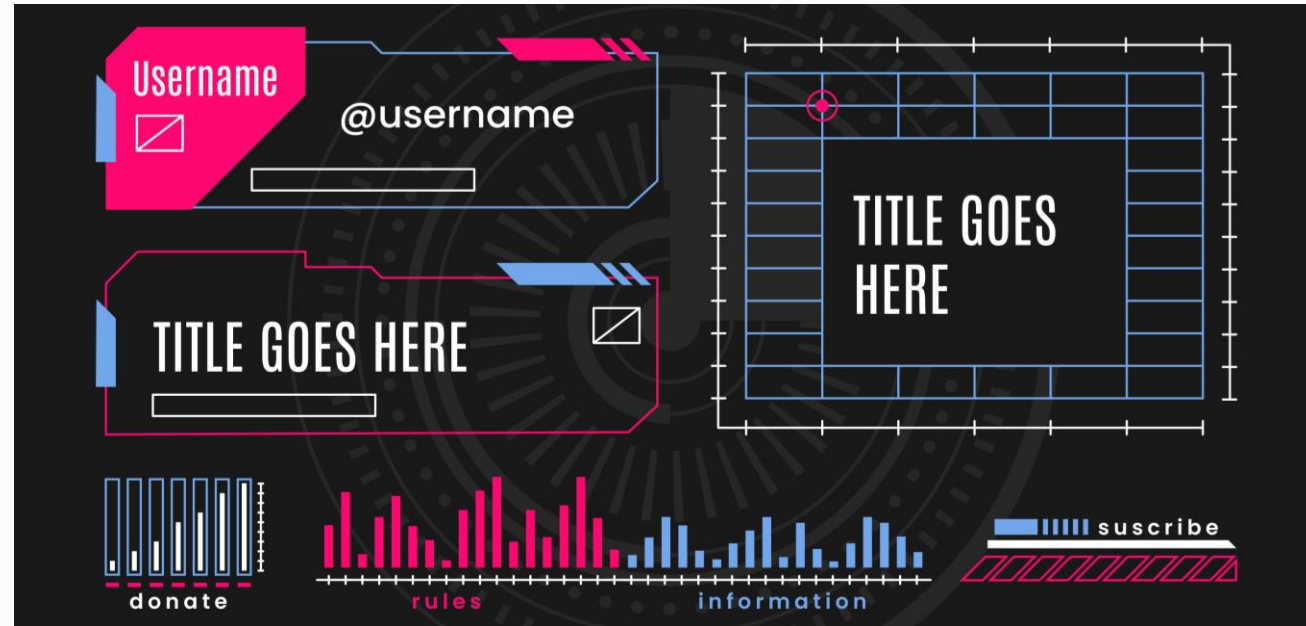
- Use descriptive **page titles** and **meta descriptions**
- Optimize images with **alt text** and **proper file names**
- Add captions and transcripts for audio and video
- Use structured headings (H1, H2, H3)

Testing tools (Lighthouse, GTmetrix)



Google Lighthouse

- Open-source tool by Google
- Measures:
 - Performance
 - Accessibility
 - Best Practices
 - SEO
- Provides scores and improvement suggestions

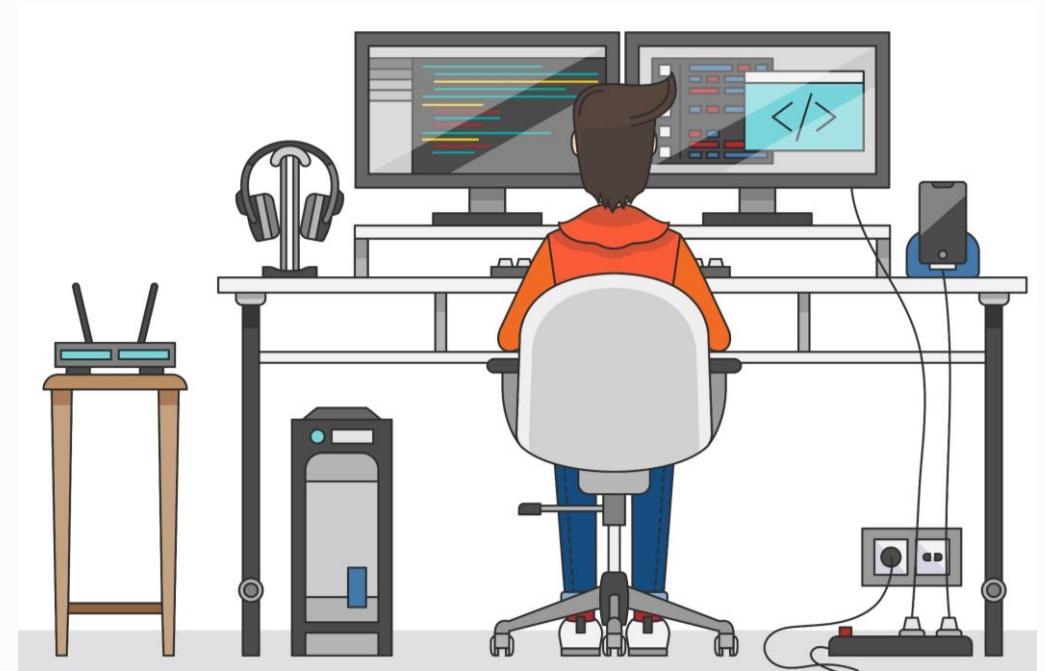


Testing tools (Lighthouse, GTmetrix)



GTmetrix

- Performance testing tool for websites
- Analyzes:
 - Page load time
 - Page size
 - Number of requests
- Offers detailed performance reports and recommendations



Activity

Use Google Lighthouse to analyze a webpage's performance.

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