

Class: CS 230

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Category	Linux	Mac	Windows	Mobile (iOS & Android)
Server Side				
Server Deployment Method	Yes, widely used for web servers (Apache, Nginx)	Yes, possible with macOS Server	Yes, IIS and other web servers	N/A
Licensing Costs	Free (Open Source)	High (macOS Server)	Medium to high (Windows Server)	N/A
Client Side				
Web Browser Compatibility	Full compatibility with major browsers	Full compatibility with major browsers	Full compatibility with major browsers	Requires responsive design for mobile browsers
Mobile App Compatibility	N/A	N/A	N/A	Full compatibility required for both iOS and Android
Development Considerations				
Software Development Process	Utilize cross-platform frameworks (e.g., React, Angular) to ensure compatibility	Utilize cross-platform frameworks (e.g., React, Angular) to ensure compatibility	Utilize cross-platform frameworks (e.g., React, Angular) to ensure compatibility	Use React Native or Flutter for mobile apps to ensure cross-platform compatibility
Development Costs	Moderate, due to open-source tools and frameworks	High, due to cost of Mac hardware and tools	Moderate to high, depending on tools used	Moderate to high, depends on cross-platform tool chosen (e.g., React Native, Flutter)
Development Time	Moderate	Moderate	Moderate	Moderate to high, due to need for mobile optimization
Expertise Required	Expertise in web	Expertise in web	Expertise in web	Expertise in mobile app

	technologies (HTML, CSS, JS) and Linux server management	technologies (HTML, CSS, JS) and macOS	technologies (HTML, CSS, JS) and Windows server management	development for iOS and Android, as well as web technologies
Development Tools				
Programming Languages & Tools	JavaScript, HTML, CSS, Node.js, React, Angular, VS Code, Sublime Text, Linux server tools	JavaScript, HTML, CSS, Node.js, React, Angular, Xcode, VS Code	JavaScript, HTML, CSS, Node.js, React, Angular, Visual Studio, VS Code	JavaScript, HTML, CSS, React Native, Flutter, Android Studio, Xcode
Impact on Development Team	May require separate teams for server-side and client-side development, but can use full-stack developers	May require separate teams for server-side and client-side development, but can use full-stack developers	May require separate teams for server-side and client-side development, but can use full-stack developers	May need specialized mobile developers in addition to web developers
Licensing Costs	Generally low, many open-source tools available	High, due to cost of Mac hardware and Xcode	Moderate to high, depending on tools used	Moderate to high, Android Studio is free, but Apple Developer Program costs for iOS

Summary

Linux is a cost-effective, open-source, server-grade operating system that is both resilient and secure.

Weaknesses: Linux server management skills is required, and there may be a learning curve for developers who are new to Linux.

Mac: Advantages: Excellent programming tools (Xcode); suitable for online and mobile app development (iOS).

Weaknesses: Expensive, limited server use compared to Linux, and requires Mac hardware. Advantages of Windows include widespread use, strong enterprise support, and effective development tools (e.g., Visual Studio).

Weaknesses: Higher licensing prices, potential security issues, and poorer stability than Linux for server use.

Mobile (iOS & Android):

Advantages: Large user base, essential for mobile app reach, cross-platform development tools available.

Weaknesses: Requires expertise in mobile development, additional cost and time for app store approvals and maintenance.

This evaluation provides a holistic view of each platform's capabilities, costs, and requirements, aiding The Gaming Room in making an informed decision for their distributed gaming application.