

Spring Boot

Criterion	Sub-criterion	Notes
Usability	Comprehensive, appropriate	Provides a structured and opinionated framework for building REST APIs. Easy to learn and use.
Maintainability	Copyrights	Open-source framework with no vendor lock-in. Codebase remains fully portable.
Maintainability	Licensing	Free and open-source. Costs only related to hosting or third-party services.
Documentation	Complete / Accurate / Clear	Extensive official documentation, guides, and best practices.
Identity	Own domain name, logo	Supports professional API identity with versioning, OpenAPI, and clear architecture.
Community	Users / developers	Very large enterprise and open-source community.
Accessibility	Binary distributions	Runs anywhere Java is available; easy JAR or Docker deployment.
Testability	Automated tests	Excellent testing support with JUnit, Mockito, and Spring Boot Test.
Interoperability	Open standards	Uses REST, JSON, OAuth2, JDBC, and OpenAPI standards.
Cost	Initial / ongoing	Low cost; mainly infrastructure-related.
Efficiency	Team efficiency	Highly efficient for team development with layered architecture.
Flexibility	Customization	Highly configurable via profiles, modules, and integrations.

Docker

Criterion	Sub-criterion	Notes
Usability	Comprehensive, appropriate	Standardizes application environments and simplifies deployment.
Maintainability	Copyrights	Open-source; configuration and images are developer-owned.
Maintainability	Licensing	Docker Engine is free; optional paid services exist.
Documentation	Complete / Accurate / Clear	Well-maintained documentation with practical examples.
Identity	Own domain name, logo	Enhances professional identity through containerization standards.
Community	Users / developers	Massive global adoption in industry.
Accessibility	Binary distributions	Available on Windows, macOS, and Linux.
Testability	Automated tests	Ensures consistent test environments across CI/CD.

Interoperability	Open standards	Based on OCI standards; works with all stacks.
Cost	Initial / ongoing	Low cost; infrastructure-dependent.
Efficiency	Team efficiency	Eliminates environment inconsistencies.
Flexibility	Customization	Supports custom images and multi-container setups.

Vite (npm run dev)

Criterion	Sub-criterion	Notes
Usability	Comprehensive, appropriate	Fast development server with hot module replacement.
Maintainability	Copyrights	Open-source frontend tooling.
Maintainability	Licensing	Free and open-source.
Documentation	Complete / Accurate / Clear	Concise and developer-friendly documentation.
Identity	Own domain name, logo	Development-only tool; not production-facing.
Community	Users / developers	Large modern frontend community.
Accessibility	Binary distributions	Runs anywhere Node.js is available.
Testability	Automated tests	Works well with frontend testing tools.
Interoperability	Open standards	Uses standard web technologies.
Cost	Initial / ongoing	No direct cost.
Efficiency	Team efficiency	Very high productivity during development.
Flexibility	Customization	Highly configurable via plugins and environment variables.

Auth0

Criterion	Sub-criterion	Notes
Usability	Comprehensive, appropriate	Provides complete authentication and authorization with minimal setup.
Maintainability	Copyrights	Proprietary service but keeps auth logic external.
Maintainability	Licensing	Freemium model suitable for academic projects.

Documentation	Complete / Accurate / Clear	Extensive guides and security documentation.
Identity	Own domain name, logo	Supports custom domains and branded login pages.
Community	Users / developers	Large enterprise and startup adoption.
Accessibility	Binary distributions	Cloud-based with SDKs for many platforms.
Testability	Automated tests	Supports mocked tokens and test tenants.
Interoperability	Open standards	Implements OAuth2, OIDC, and JWT.
Cost	Initial / ongoing	Free tier with scaling costs.
Efficiency	Team efficiency	Greatly reduces security implementation effort.
Flexibility	Customization	Highly configurable roles, rules, and actions.

InfinityFree

Criterion	Sub-criterion	Notes
Usability	Comprehensive, appropriate	Simple hosting for static sites and basic PHP projects.
Maintainability	Copyrights	Proprietary hosting; user code remains owned.
Maintainability	Licensing	Completely free with limitations.
Documentation	Complete / Accurate / Clear	Basic documentation aimed at beginners.
Identity	Own domain name, logo	Supports subdomains and custom domains.
Community	Users / developers	Popular among students and beginners.
Accessibility	Binary distributions	Accessible via web panel and FTP.
Testability	Automated tests	Limited CI/CD and automation support.
Interoperability	Open standards	Supports basic web standards only.
Cost	Initial / ongoing	No cost, limited features.
Efficiency	Team efficiency	Suitable mainly for small projects.
Flexibility	Customization	Restricted server configuration.

MySQL

Criterion	Sub-criterion	Notes
Usability	Comprehensive, appropriate	Widely used relational database with standard SQL support.
Maintainability	Copyrights	Open-source with Oracle stewardship.
Maintainability	Licensing	Community Edition is free.
Documentation	Complete / Accurate / Clear	Extensive and well-structured documentation.
Identity	Own domain name, logo	Strong and recognizable database identity.
Community	Users / developers	Very large global user base.
Accessibility	Binary distributions	Available on all major platforms.
Testability	Automated tests	Supports integration testing and containers.
Interoperability	Open standards	SQL-compliant with standard drivers.
Cost	Initial / ongoing	Free; hosting costs may apply.
Efficiency	Team efficiency	Reliable and efficient for collaborative projects.
Flexibility	Customization	Flexible schemas and configurations.

Playwright

Criterion	Sub-criterion	Notes
Usability	Comprehensive, appropriate	Modern API for end-to-end browser testing.
Maintainability	Copyrights	Open-source and maintained by Microsoft.
Maintainability	Licensing	Free and open-source.
Documentation	Complete / Accurate / Clear	High-quality documentation with examples.
Identity	Own domain name, logo	Quality assurance tool enhancing professionalism.
Community	Users / developers	Large and growing community.
Accessibility	Binary distributions	Installable via npm on all platforms.
Testability	Automated tests	Designed for reliable E2E testing.

Interoperability	Open standards	Compatible with modern web standards.
Cost	Initial / ongoing	No direct cost.
Efficiency	Team efficiency	Reduces manual testing effort.
Flexibility	Customization	Highly configurable test environments.

JaCoCo

Criterion	Sub-criterion	Notes
Usability	Comprehensive, appropriate	Easy integration for Java code coverage.
Maintainability	Copyrights	Open-source Java library.
Maintainability	Licensing	Free and open-source.
Documentation	Complete / Accurate / Clear	Clear setup and CI integration guides.
Identity	Own domain name, logo	Quality assurance and coverage tool.
Community	Users / developers	Widely used in Java ecosystem.
Accessibility	Binary distributions	Available via Maven and Gradle.
Testability	Automated tests	Provides detailed coverage metrics.
Interoperability	Open standards	Integrates with standard Java tooling.
Cost	Initial / ongoing	No financial cost.
Efficiency	Team efficiency	Improves test quality and discipline.
Flexibility	Customization	Configurable rules and thresholds.