

Code Review Checklist

Catch Tech Debt Before It Ships

For All Developers

4 PAGES OF REVIEW COVERAGE

- > Functional & Logic Review
- > Design & Architecture Assessment
- > Security & Performance Checks
- > Testing & Maintainability Standards
- > AI-Generated Code Verification

TechDebt.solutions

<https://techdebt.solutions/>

Functional & Logic Review

Correctness

- Code does what the PR description claims
- Edge cases handled (null, empty, boundary values)
- Error paths return meaningful messages
- No off-by-one errors in loops or pagination
- Race conditions considered for concurrent access

Design & Architecture

- Follows existing patterns in the codebase
- No unnecessary abstractions or over-engineering
- Single Responsibility Principle maintained
- Dependencies flow in the correct direction
- No circular dependencies introduced

AI-Generated Code (if applicable)

- Verified code does not just "look right" but IS right
- No hallucinated imports or dependencies
- No verbose boilerplate that could be simplified
- Consistent with project conventions (not generic AI style)
- Author can explain every line if asked

Security & Performance

Security

- No hardcoded secrets, keys, or credentials
- User input validated and sanitized
- SQL queries parameterized (no string concatenation)
- Authentication/authorization checks present
- No sensitive data in logs or error messages
- Dependencies checked for known vulnerabilities

Performance

- No N+1 queries or unnecessary database calls
- Large datasets paginated or streamed
- Expensive operations cached where appropriate
- No blocking operations on main thread
- Memory leaks considered (event listeners, subscriptions)

Testing & Maintainability

Testing

- New code has corresponding tests
- Tests cover happy path AND error paths
- Tests are not tautological (testing mocks)
- No flaky test patterns (timing, ordering)
- Integration points have integration tests

Maintainability

- Variable and function names are self-documenting
- Complex logic has explanatory comments
- No TODO/FIXME without linked ticket
- Changelog or release notes updated
- Documentation updated for public API changes

Review Verdict

- APPROVE - Ready to merge
- REQUEST CHANGES - Issues must be addressed
- COMMENT - Non-blocking suggestions

Reviewer: _____

Date: _____

[More at https://techdebt.solutions/ai-code-review/](https://techdebt.solutions/ai-code-review/)