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

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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

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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)

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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.guru/ai-code-review/

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