

Software Engineering Coding and Review Standards

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Department: IT & Engineering - R&D

1. Goal

To ensure the delivery of high-quality, maintainable, secure, and performant code across all product teams.

2. Code Quality and Style

- **Linting and Formatting:** Automated linting (e.g., ESLint, Black, Prettier) must be enforced in the CI pipeline for all supported languages (Python, JavaScript/TypeScript, Go). Code must conform to team-agreed style guides.
- **Comments and Documentation:** All public APIs, classes, and complex functions must be documented with clear, concise inline comments and docstrings explaining purpose, parameters, and return values.
- **Readability:** Code must be clear, simple, and self-documenting. Avoid excessive abstraction or premature optimization.

3. Code Review (Pull Request) Process

- **Mandatory Review:** All code merged to main (or a release branch) requires approval from a minimum of **two** qualified peers.
- **Review Focus:** Reviewers must check for:
 - Functional correctness and test coverage.
 - Adherence to security best practices (OWASP Top 10).
 - Performance implications (e.g., N+1 query issues, complex loops).
 - Documentation updates (READMEs, API specs).
- **Size Limit:** Pull Requests should be kept small (ideally < 300 lines of change) to facilitate effective review.

4. Testing Requirements

- **Unit Test Coverage:** Mandatory minimum of **80%** code coverage for all new feature development and bug fixes, enforced in CI.
- **Integration Tests:** Critical application flows must be covered by integration tests that run against the Staging environment.
- **Security Testing:** All new endpoints must pass SAST/DAST (Static/Dynamic Analysis)

scans run during the CI/CD pipeline.

5. Handling Technical Debt

Technical debt must be explicitly tracked in the backlog (e.g., JIRA). Teams must dedicate a minimum of **20%** of each sprint to addressing critical technical debt and refactoring activities (per the **Technical Debt Management Strategy**).