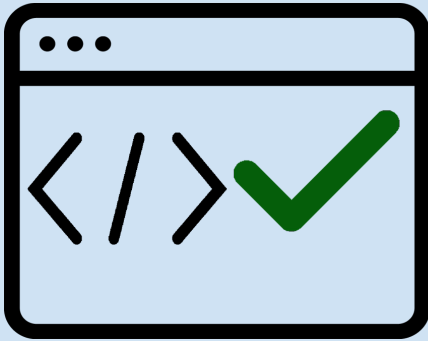## WHAT IS CODE QUALITY?

Code quality refers to the **non-functional requirements of code**, and code that is **free from deficiencies**. These quality measurements go beyond features/functions.

FUNCTIONAL VERSUS NON-FUNCTIONAL REQUIREMENTS

Functional

Rapid, low-effort travel over distances up to 300 miles

0-60 in 6 seconds

Sport styling

Stiff suspension

Non-functional

Serviceability

Reliability

COMMON NON-FUNCTIONAL REQUIREMENTS: (the "-ilities")

Adaptability	Durability	Usability
Availability	Maintainability	Efficiency
Customizability	Predictability	Fault-tolerance
Dependability	Sustainability	Modularity
		Safety

FIVE PILLARS OF CODE QUALITY

PILLAR	FACTORS	OUTCOMES
Readability	• Consistent Coding Style • API Documentation • Clearly labeled test cases • Good variable and method names	• Easier onboarding • More efficient cross-team collaboration • Better maintainability
Performance	• API best practices • Computational complexity • Profiling • Software architecture / algorithms	• Cost savings (especially with SaaS) • Broader reach (especially with Mobile)
Maintainability	• Library / framework choice • Moving away from deprecated functions • Keeping up to date	• Lower maintenance costs • Easier recruiting / onboarding • Easier to make product changes
Reliability / Resiliency	• Eliminating memory errors • Eliminating resource leaks • Error handling • Incorporating SRE testing	• Better user experience • Meeting / exceeding SLA commitments • Lower cloud costs • (less replication needed)
Security	• API best practices • Information flow • Secure crypto • Pen testing	• Less risk • Customer confidence

FROM REQUIREMENTS TO PRODUCT

If we specify…

- Rapid, low-effort travel over distances up to 300 mile
- 0-60 in 6 seconds

But not…

- Cargo capacity
- Style