

Level#	Designation	Education & Qualifications Required	Methodologies	QA Methodologies	Software Reuse	Typical Technologies	Application Areas	Examples
1	<b>Coding</b>	Pre-University / Self-studies / Internet courses	No or very rudimentary methodologies adhered	Manual testing (unsystematic)	None or ad-hoc copy-paste	PHP, MySQL, entry-level JavaScript	Simple Web sites	
2	<b>Programming</b>	BSc in IT. Knowledge of Algorithms, Data Structures, Programming Languages, OSES and other key elements	Simple OOP, simple concurrency	Manual testing, elementary test scripts	Unsystematic (say ~10% or code reused)	Entry-level JavaScript and Python	Web front-ends and back-ends	
3	<b>Software Development</b>	As for Programming, + working in a managed team and knowledge of collaboration infrastructures and processes	As for Programming but under team / managed standards	QA process imposed by the organization / team: unit, integration etc testing, both manual and automated.	As imposed by the organization, but typically small degree (considered to be "waste of time")	Enterprise-level JavaScript, Java, Go, Python	Large-scale web infrastructures, entry-level blockchain	Typical Indian start-up
4	<b>Software Engineering</b>	MSc in Software Engineering or Applied Mathematics or similar	In-depth OOP, template meta-programming, functional programming, design patterns, reliable concurrency patterns	QA primarily by design (e.g. strong typing, design by contract), testing is secondary	Systematic design for reuse, reuse degree of 30%+	Modern C++, F#, OCaml, Haskell, Ada, Erlang/OTP	Dependable, high performance, distributed real-time solutions (e.g. Financial Matching Engines)	Financial exchanges (e.g. LMAX)
5	<b>Computer Science</b>	PhD in a related discipline	Formal design and verification methods	QA by formal verification and design	Very high degree of reuse (~70%) of components + proofs	B Method, Coq, HOL	Dependability-critical applications (Defense, Transportation Industry, Nuclear Power, High-End Finance etc)	Defense / nuclear industry contractors