

# SOFTWARE ENGINEERING

A Progressive Approach



Ikvinderpal Singh

## SOFTWARE ENGINEERING A Progressive Approach

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| <b>Author :</b>         | Ikvinderpal Singh                            |
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## Product Description

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**Software Engineering: An Engineering Approach** provides a comprehensive and reader-friendly introduction to software development as a rigorous engineering discipline. Tailored for upper-level undergraduate students, first-year graduate students, and industry practitioners, this text bridges the gap between chaotic programming habits and mature software practices. It outlines structural development life cycles, detailed cost estimation metrics, design modeling frameworks, and exhaustive verification methodologies. By highlighting the integration of Computer-Aided Software Engineering (CASE) tools, the text provides readers with the practical skills needed to deploy high-quality, reliable, and maintainable systems. Ultimately, this volume serves as an essential manual for navigating the rapid technical shifts within modern industrial applications. **Salient Feature:**

- **Foundational Learning Paradigms:** Evaluates core software development principles, stakeholder management roles, Davis's rules, and CMM quality frameworks to establish structural programming discipline.
- **Essential Algorithms:** Covers foundational process pathways including Waterfall, prototyping, incremental growth, Spiral architectures, and rapid development life cycles.
- **Practical Implementation:** Explains algorithmic test-case design using equivalence partitioning, boundary values, structural basis paths, and systematic integration testing methodologies.
- **Data Strategy:** Integrates data flow diagrams, structured dictionaries, entity relationships, and structural object-oriented UML modeling to streamline architectural configurations.
- **Model Optimization:** Maximizes lifecycle efficiency through automated CASE tool environments, repository coordination architectures, and software quality assurance planning guides.

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## Author

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**Ikvinderpal Singh** Ikvinderpal Singh, is Lecturer of P.G. Deptt. Of Computer Science & Applications, Khalsa College, Amritsar which is a premier institute in North India. He obtained his MCA with distinction from Guru Nanak Dev University, Amritsar. He has always been excellence right from his student career. He has written five books. He brought name for himself when he topped the college in B.Sc. His other areas of interest include Fuzzy systems, digital electronics and java programming.

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