

Software Engineering Tools of the Trade

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Outline

- 1 Tool Support
- 2 CASE and Tools
- 3 Questions?

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Goal of Software Engineering

To build high-quality software within budget using software engineering

- ▶ methodologies,
- ▶ techniques, and
- ▶ tools

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Tool Support for Software Engineering

CASE: Computer Aided Software Engineering

CASE tools

- ▶ Analysis and modeling tools, e.g., E/R modeling, object modeling.
- ▶ Development tools, to support design and construction of software, e.g., IDE, debugging tools.
- ▶ Verification and validation, to analyze code and specifications for correctness, performance
- ▶ Configuration management, to control the check-in and check-out of repository objects and files, e.g., Source Code Management tools (SCM)
- ▶ Metrics and measurement, to analyze code for complexity, modularity, performance, ...
- ▶ Project management, to manage project plans, task assignments, scheduling ...

Tool Support for Software Engineering

CASE: Computer Aided Software Engineering

CASE tools can also be viewed as,

- ▶ Upper CASE Tools, support business and analysis modeling (e.g., tools to produce E/R diagrams, Data flow diagram, structure charts, Decision Trees, Decision tables ...)
- ▶ Lower CASE Tools, support development activities (e.g., physical design, debugging, construction, testing, component integration, maintenance, and reverse engineering ...)

Tools for Software Engineering Activities

- ▶ Tools for requirement analysis and elicitation
- ▶ Tools for design and for implementation
- ▶ Tools for verification and validation (e.g., testing)
- ▶ Tools for maintenance
- ▶ Tools for project planning
- ▶ Tools for project management

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Questions

“The beginner mind and the wise mind are one and the same; the only difference is the tools, information, experience on which they draw.” –

Shellen Lubin