Perspectives on Software Engineering

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Information Systems
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Goals of this Lecture

To finish tutorial planning

To discuss perspectives on software engineering

- Stages
- Management Issues

To perform tutorial on interative and agile development basic reflections

Group	Date
EVU 01	14 Februar 2008
D403a, s601a	25 Februar 2008
D401b, s601b	28 Februar 2008
D402a, s601c	3 March 2008
D401a, s601d	6 March 2008
D403b (not presented), s601e (not presented)	10 March 2008
D404a (not presented), i201ab (not presented)	26 March 2008
-	27 March 2008
d406b	31 March 2008
D407a, d408a	3 April 2008
D405a, D406a	7 April 2008
	14 April 2008
	28 April 2008
	5 May 2008

What is SE?

WHAT IS SOFTWARE ENGINEERING?
The IEEE Computer Society defines software engineering as "(1) The application of a systematic, disciplined, quantifiable approach to the development, operation, and maintenance of software; that is, the application of engineering to software. (2) The study of approaches as in (1)."

SOE - Related Disciplines

Zelkowitz (1978):

Mathematics	Engineering	Management Science
Algorithms	Costs and Tradeoffs	Requirements, Risks, Personnel, Monitoring

SWEBOK (2004):

Table 2 Related disciplines

- Computer engineering
- Computer science
- Management
- Mathematics
- Project management
- Quality management
- Software ergonomics
- Systems engineering

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SD Life Cycle (Zelkowitz)

Requirements analysis
Specification
Design
Coding
Testing
Operation and maintenance

Design, Structure Diagram

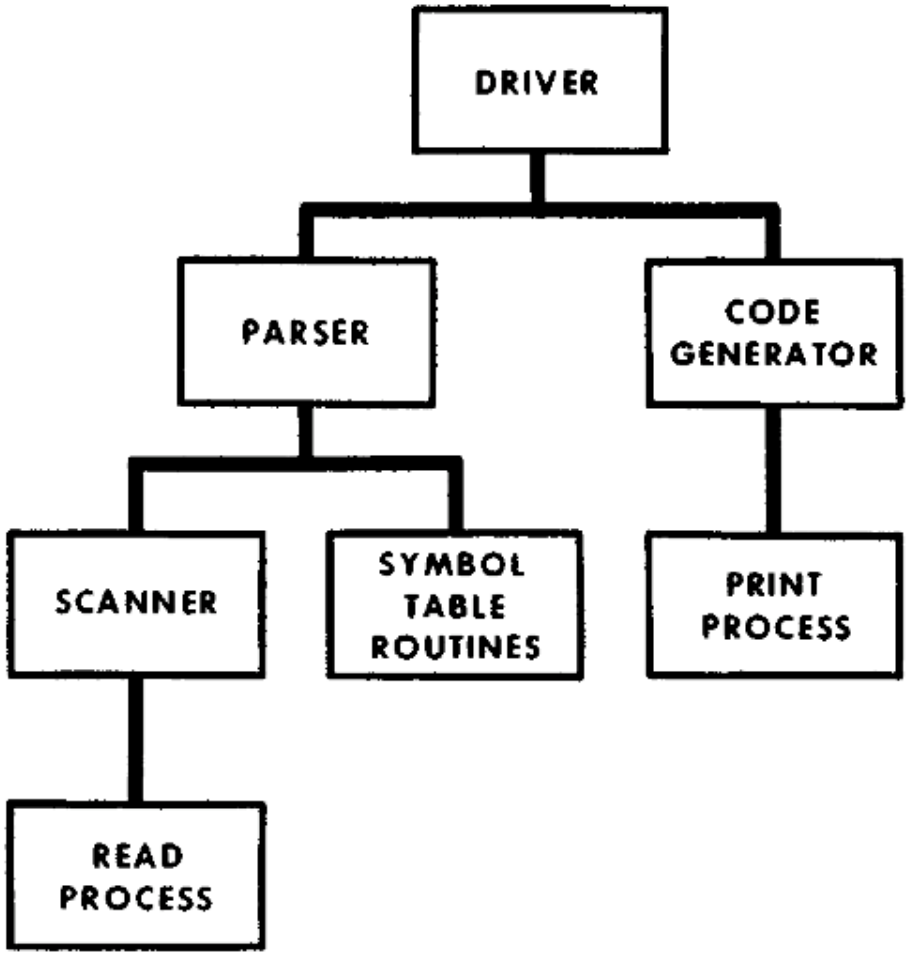
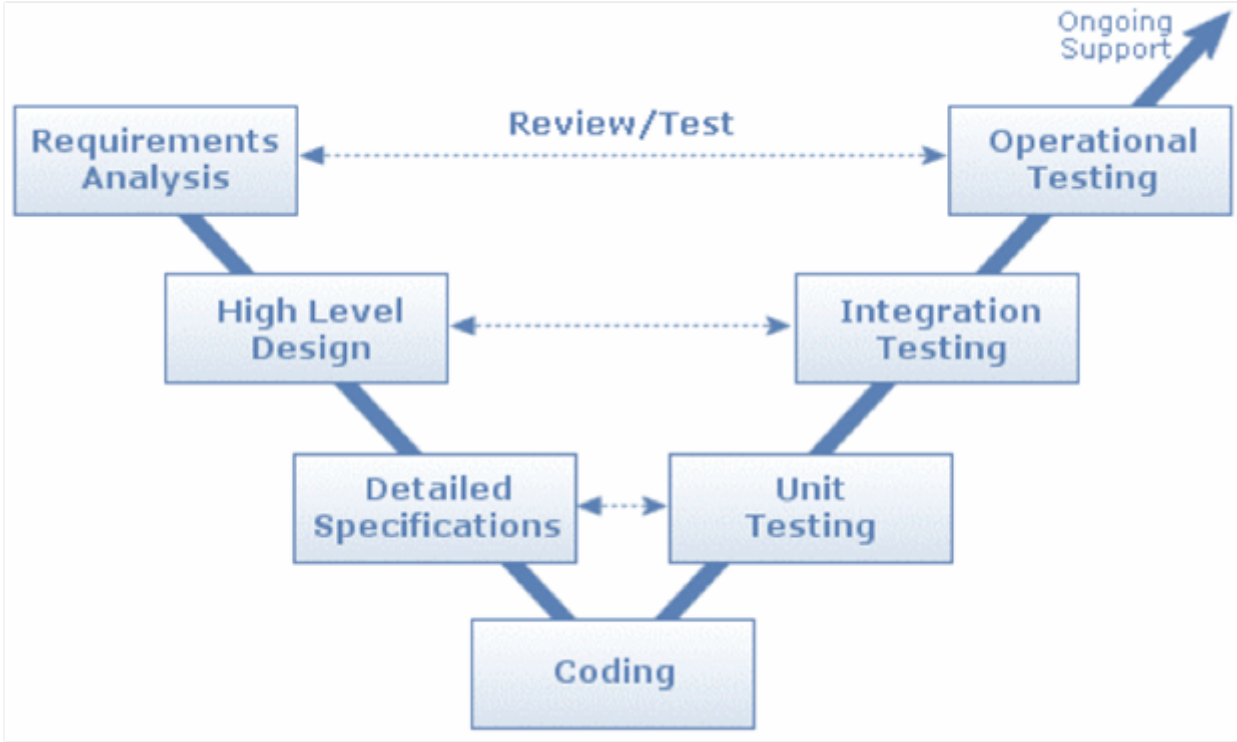


FIGURE 2. Sample baseline diagram for a compiler.

Testing

Unit test
Integration test
System test
Acceptance test



V-Model

Effort distribution in percentages

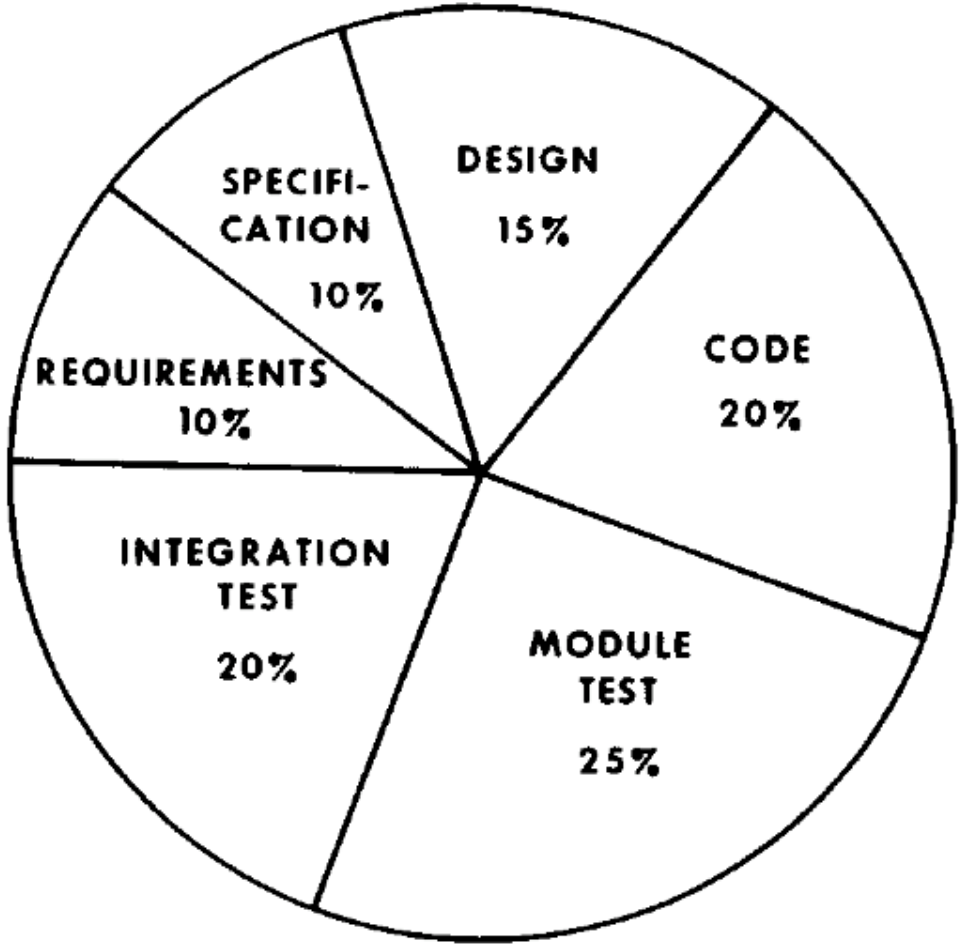


FIGURE 1. Effort required on various development activities (excluding maintenance)

Life-cycle Effort Distribution

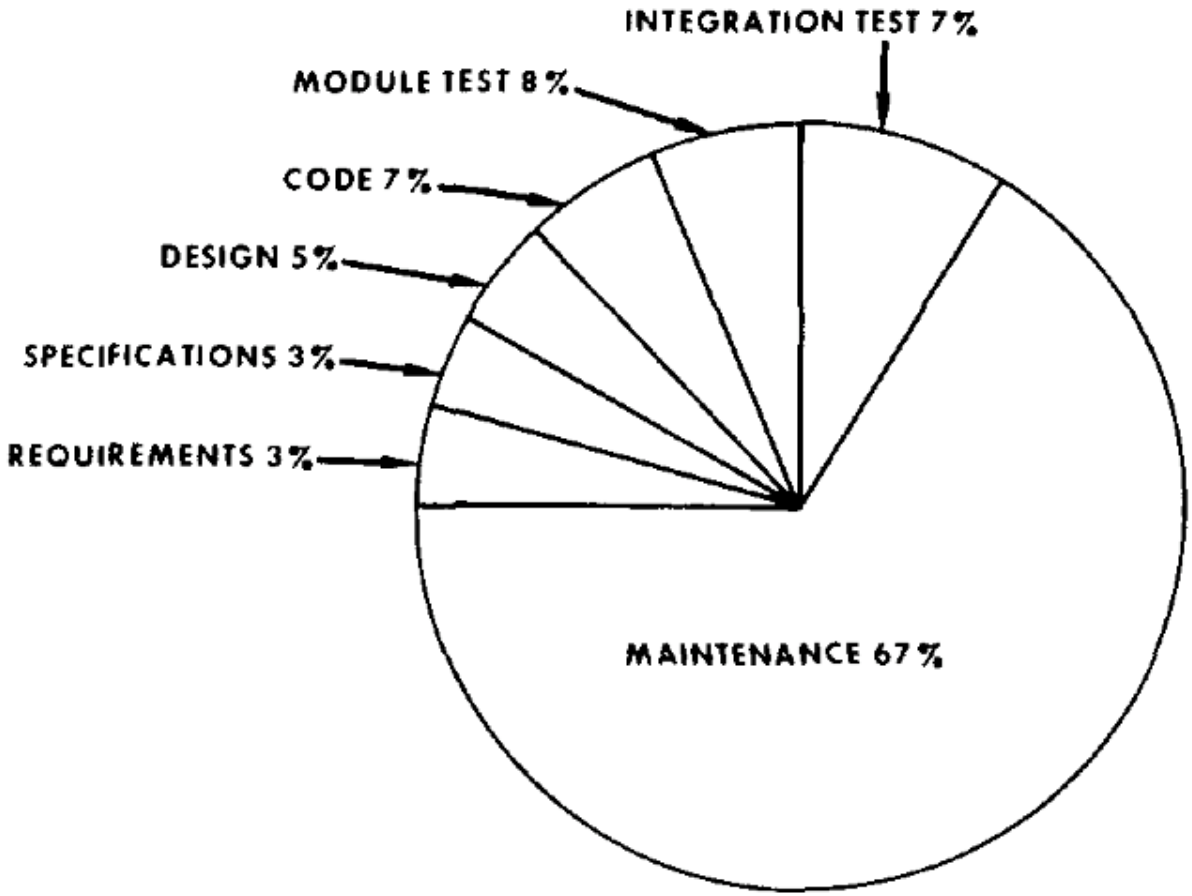


FIGURE 3. True effort on many large-scale software systems.

Goals of Software Engineering

Use techniques that manage complexity
Increase reliability and correctness
Develop techniques to predict costs accurately