REKAYASA PERANGKAT LUNAK 1

PENDAHULUAN

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DESKRIPSI MATA KULIAH

- Sifat : **WAJIB**

- Prasyarat : Struktur Data, Basis Data, IMK

- Bobot : 3 SKS

PENILAIAN

- 10% kehadiran (min. 80%) + 20% tugas/quiz + 30% uts + 40% uas

Indeks	Nilai
A	$80 \leq NA \leq 100$
B	$68 \leq NA \leq 79$
C	$56 \leq NA \leq 67$
D	$45 \leq NA \leq 55$
E	$0 \leq NA \leq 44$

- Tidak tugas / kuis / ujian susulan / perbaikan / tambahan *
- Nilai akhir "E" jika ada indikasi plagiat dalam tugas / ujian
- WAJIB mengikuti responsi tugas besar dan presentasi

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SILABUS MATA KULIAH

- Pendahuluan
- Pengantar Rekayasa Perangkat Lunak
- Proses Pembangunan Perangkat Lunak
- Rekayasa Kebutuhan Perangkat Lunak
- Analisis dan Desain Perangkat Lunak (Terstruktur)
- Pengujian Perangkat Lunak
- Pemeliharaan Perangkat Lunak

REFERENSI

- Roger S. Pressman, *"Software Engineering: A Practitioner's Approach, 6th edition"*.

- Ian Sommerville, *"Software Engineering, 8th edition"*.

- Kendall, *"System Analysis and Design, 8th edition"*.

- Slide perkuliahan.

PENDAHULUAN

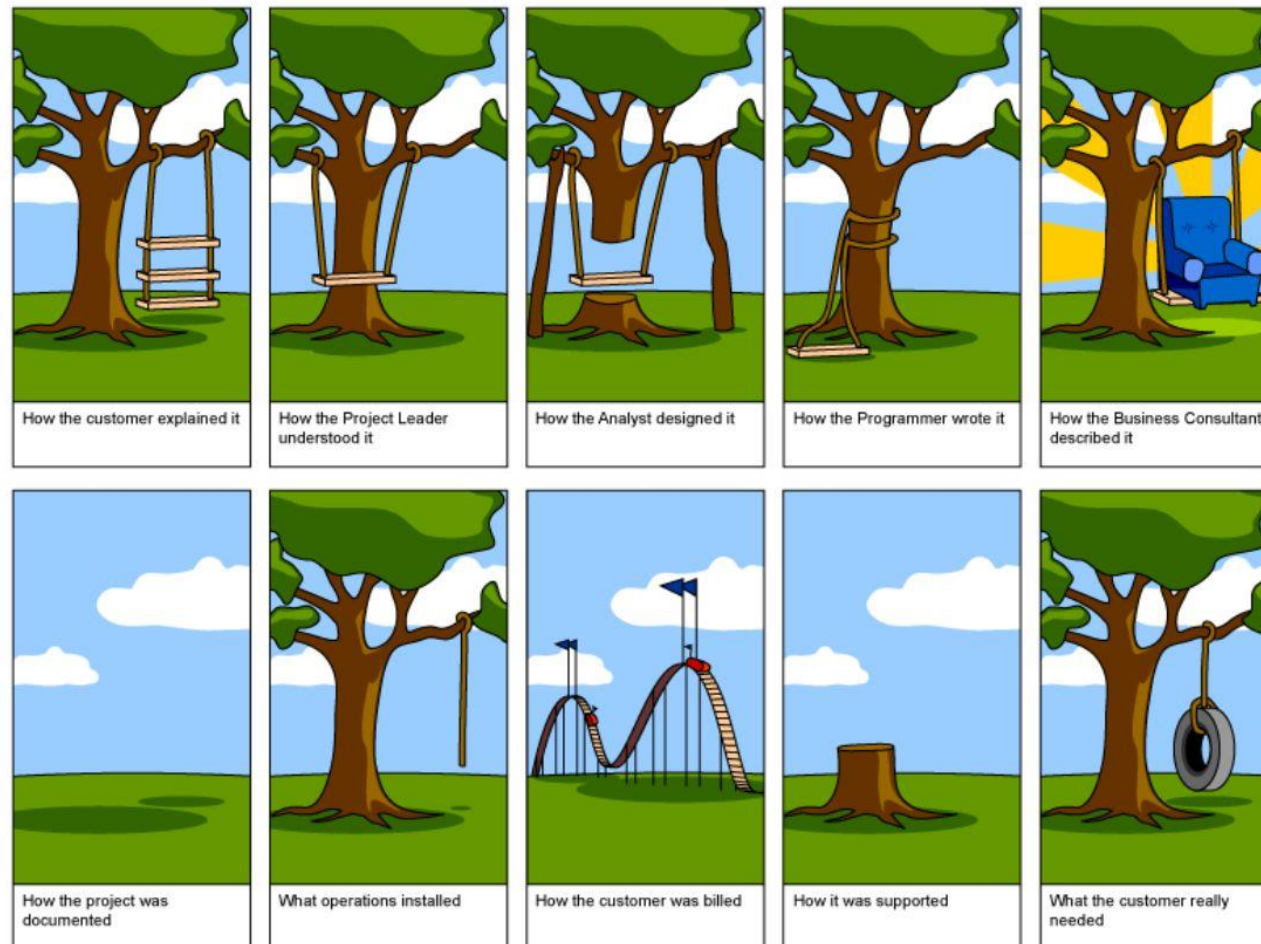Why we need to learn software engineering?

What is software and software engineering?

Software process

Criterias of Good Software

CASE Tools

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WHY WE NEED TO LEARN SOFTWARE ENGINEERING?

WHAT IS SOFTWARE?

- Instructions (computer programs) that when executed provide desired features, function, and performance;

- Data structures that enable the programs to adequately manipulate information;

- Documentation that describes the operation and use of the programs.

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WHAT IS SOFTWARE?

- Software is developed or engineered, it is not manufactured in the classical sense.

- Software doesn't "wear out."

- Although the industry is moving toward component-based construction, most software continues to be custom-built.

- Generic → Public software & Bespoke (custom) → Private software

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SOFTWARE APPLICATIONS

- system software
- application software
- engineering/scientific software
- embedded software
- product-line software
- WebApps (Web applications)
- AI software
- Etc.

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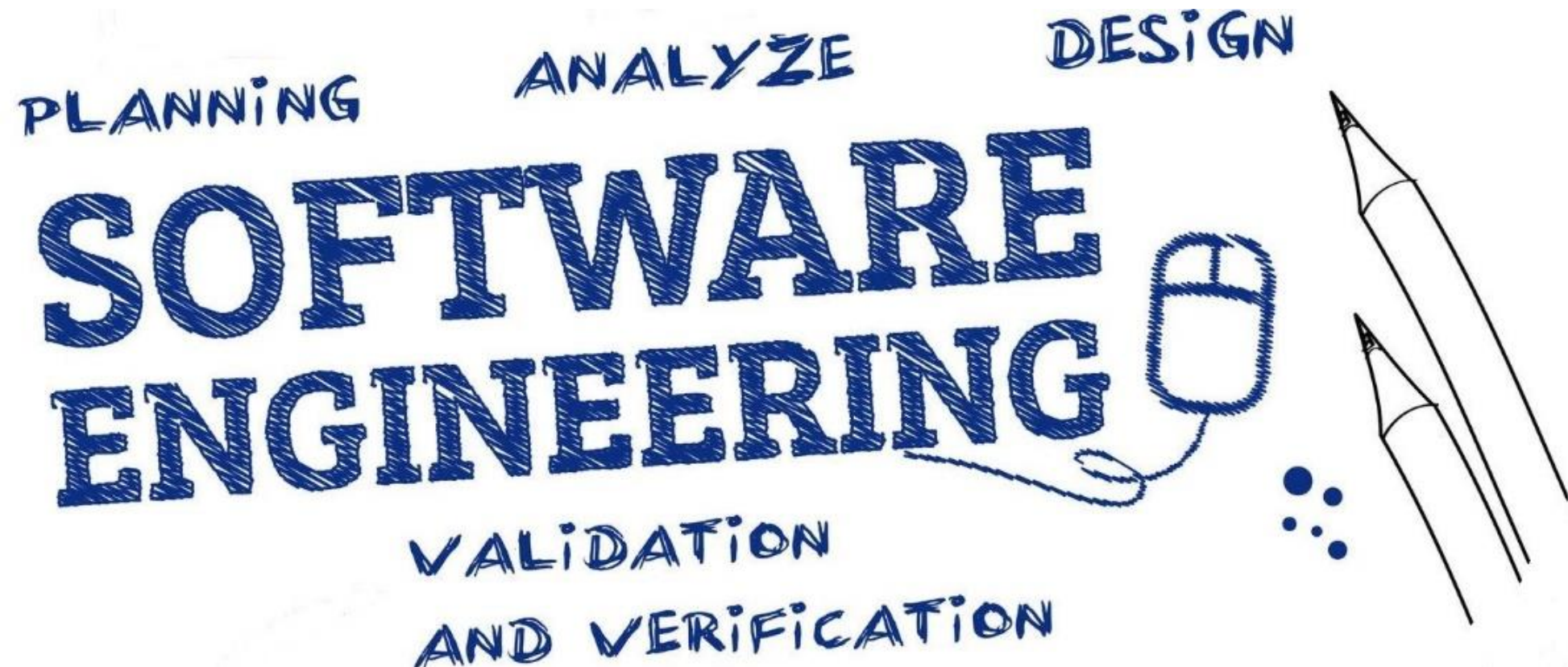UNIKOM

SOFTWARE APPLICATIONS

LEGACY SOFTWARE

Why must it change?

- software must be adapted to meet the needs of new computing environments or technology.
- software must be enhanced to implement new business requirements.
- software must be extended to make it interoperable with other more modern systems or databases.
- software must be re-architected to make it viable within a network environment.

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WHAT IS SOFTWARE ENGINEERING?

- Disiplin ilmu rekayasa atau teknik yang berkaitan dengan semua aspek dalam membuat perangkat lunak.

- The IEEE definition:
  - Software Engineering: "(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)".

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WHAT IS SOFTWARE ENGINEERING?

SOFTWARE PROCESS

- Serangkaian aktifitas yang tujuannya adalah pembangunan atau evolusi perangkat lunak dengan aktifitas:
  - Spesifikasi
  - Pembangunan
  - Validasi
  - Evolusi

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CRITERIAS OF GOOD SOFTWARE

Maintainability
- Software must evolve to meet changing needs

Dependability
- Software must be trustworthy

Efficiency
- Software should not make wasteful use of system resources

Usability
- Software must be usable by the users for which it was designed

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CASE (Computer Aided Software Engineering) TOOLS

- **Computer-aided software engineering** (**CASE**) is the domain of software tools used to design and implement applications.
- CASE tools are similar to and were partly inspired by computer-aided design (CAD) tools used for designing hardware products.
- CASE tools are used for developing high-quality, defect-free, and maintainable software.
- CASE software is often associated with methods for the development of information systems together with automated tools that can be used in the software development process.

CASE (Computer Aided Software Engineering) TOOLS

Upper-CASE

- Tools untuk mendukung aktifitas proses awal dari requirement dan desain

Lower-CASE

- Tools untuk mendukung aktifitas selanjutnya seperti programming, debugging, dan testing.

ANY QUESTIONS?

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