Semester Ganjil - 2023/2024

Dasar-dasar Perangkat Lunak

Materi 2:

Software Development Life Cycle

Dosen pengampu:

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Capaian Pembelajaran Mata Kuliah (CPMK) 0801

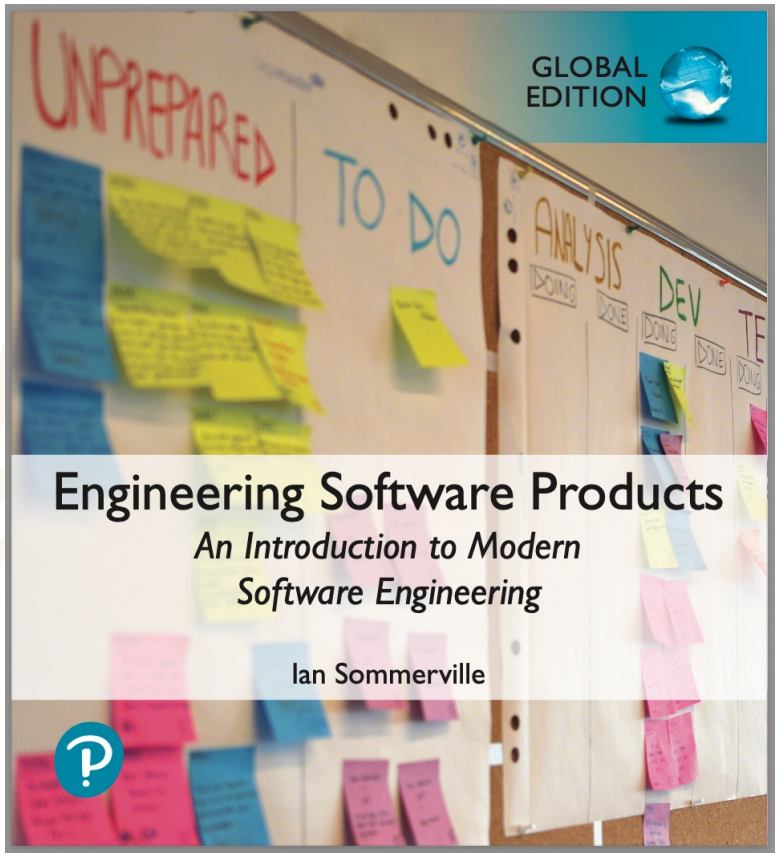
Mahasiswa mampu mengonsepkan teori, metode, teknik/algoritma untuk mengembangkan produk/layanan berbasis IoT secara sistematis secara mandiri dengan benar

Sub-CPMK 080102

Mahasiswa mampu menjelaskan siklus pengembangan perangkat lunak (*software development life cycle*) dalam pengembangan perangkat lunak untuk *software service* dan IoT

Pokok Bahasan

- Software product
- Software product management
- Software development process/life cycle

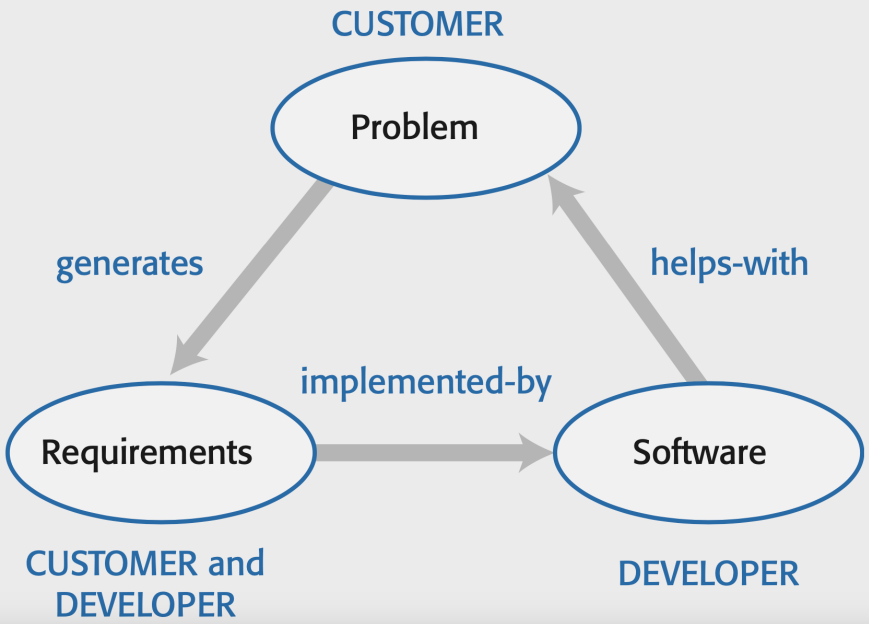


Referensi: Engineering Software Products: An Introduction to Modern Software Engineering, Ian Sommerville, 2019.

Software Product

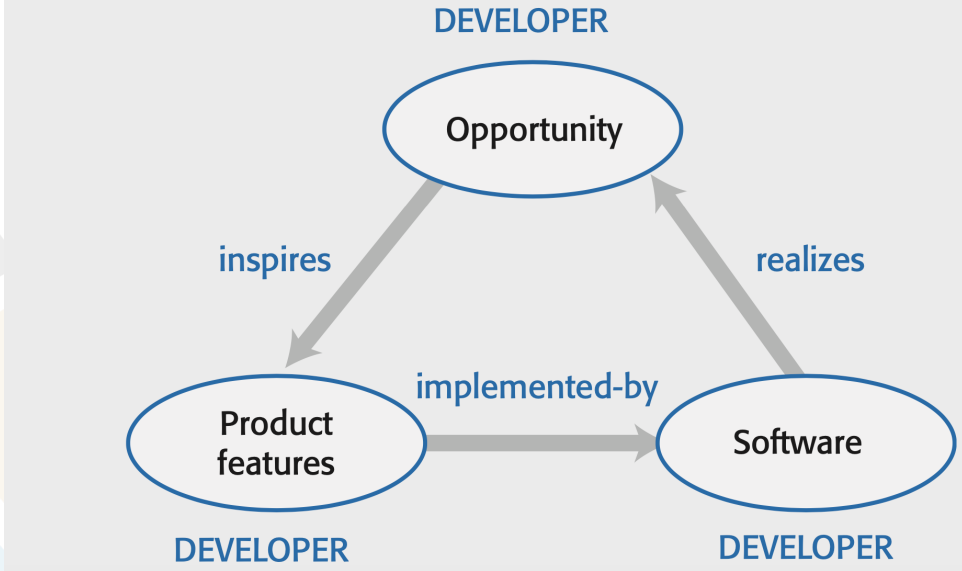
Software Product

Figure 1.1 Project-based software engineering



Project-based software engineering

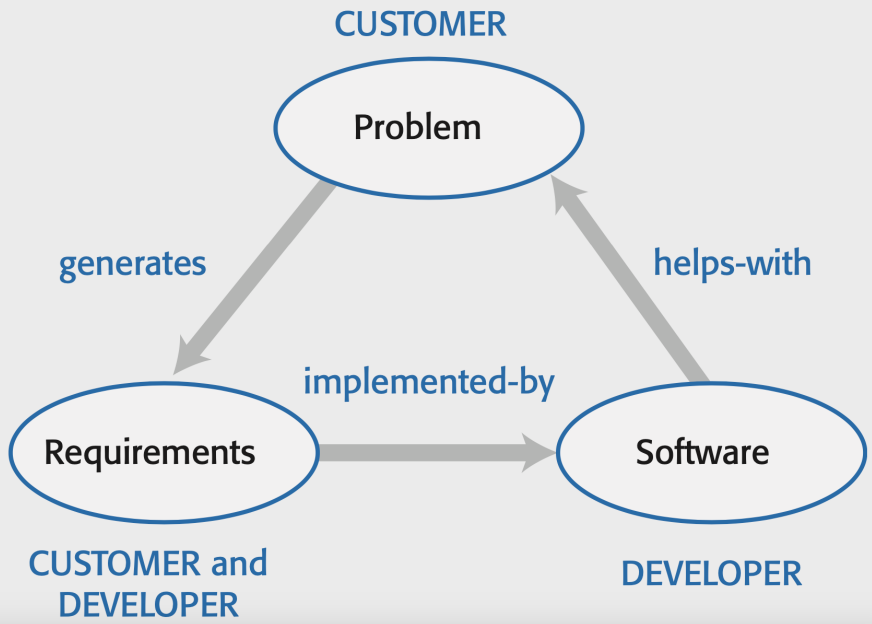
Figure 1.2 Product software engineering



Product software engineering

Project-based Software Engineering

Figure 1.1 Project-based software engineering



Project-based software engineering

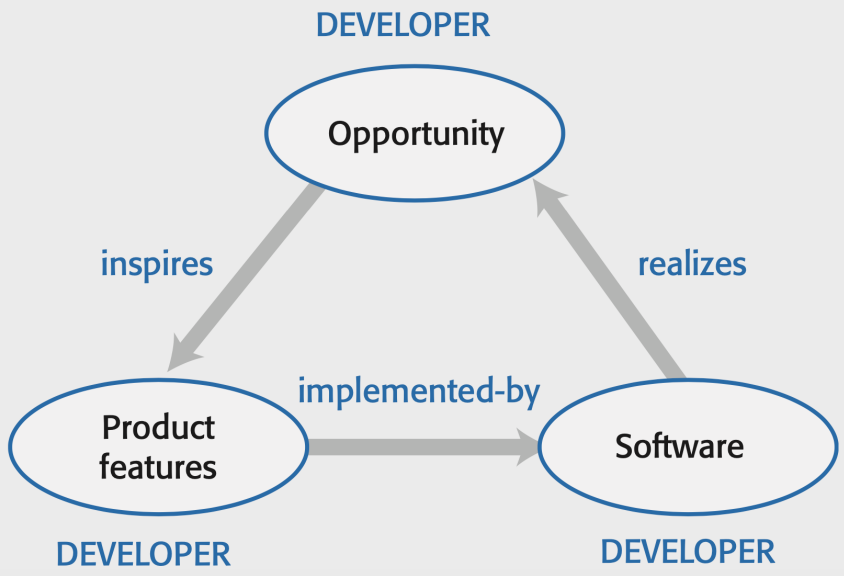
- Custom by client
- Software system based on a set of software requirements
- Successful software engineering = need a lot of preparatory work before starting program
- Customer defined the details requirements

Long lifetime, as long as the company still need it

Maintain cost usually exceed the initial software development cost

Product-based software engineering

Figure 1.2 Product software engineering



Product software engineering

- No external customer who creates requirements that define what the software must do
- Software developer decides on the feature of the product
- Needs of potential customers, but can not insist that the sotware includes particular features/attributes

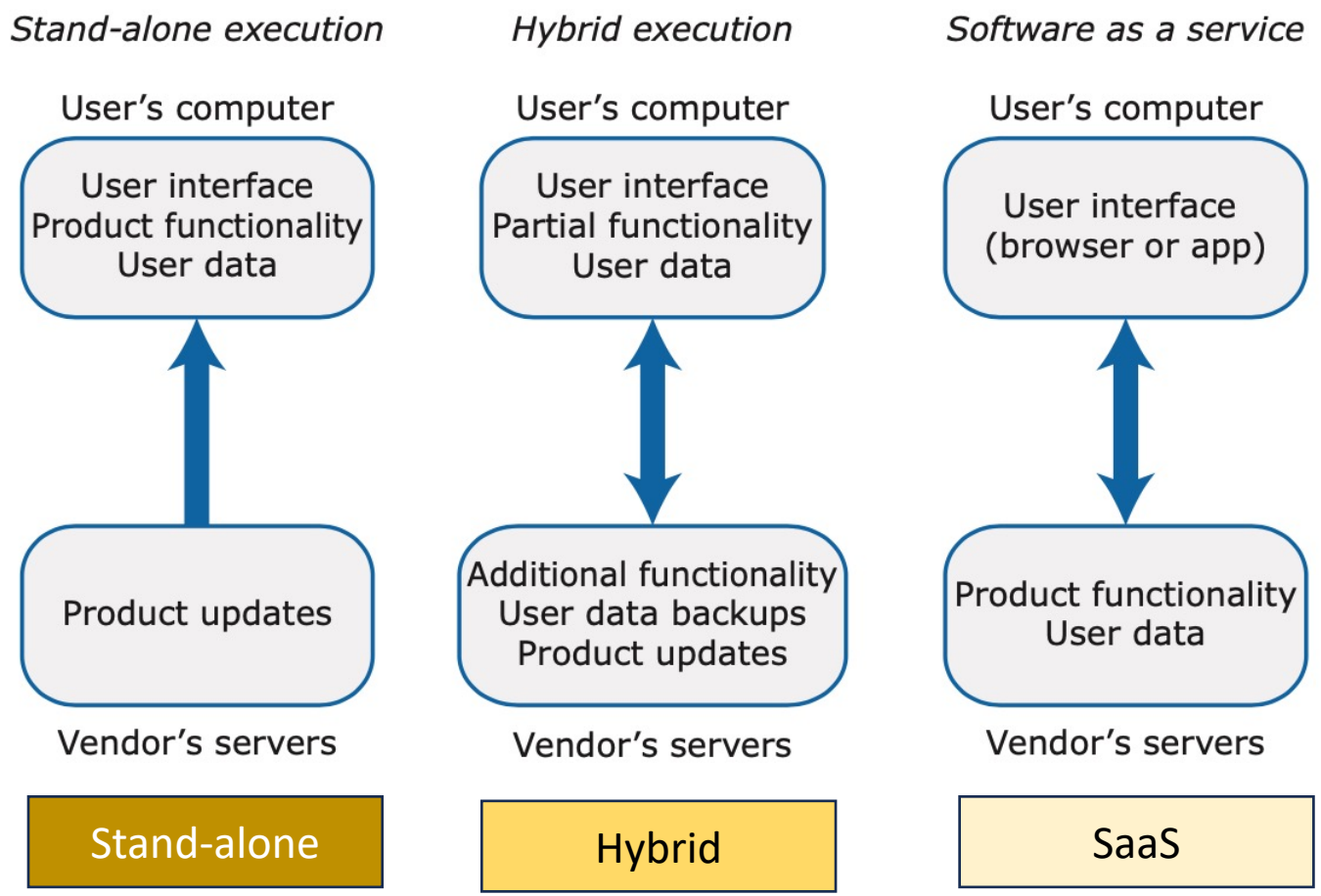
There is a risk that the developer will stop supporting the software

There is a risk that the developer will stop supporting the software

Bring the product to the market quickly!!!

Software Execution Models

Figure 1.3 Software execution models



Product Vision

What makes your product different from competing products?

Who are the target user and customer for the product?

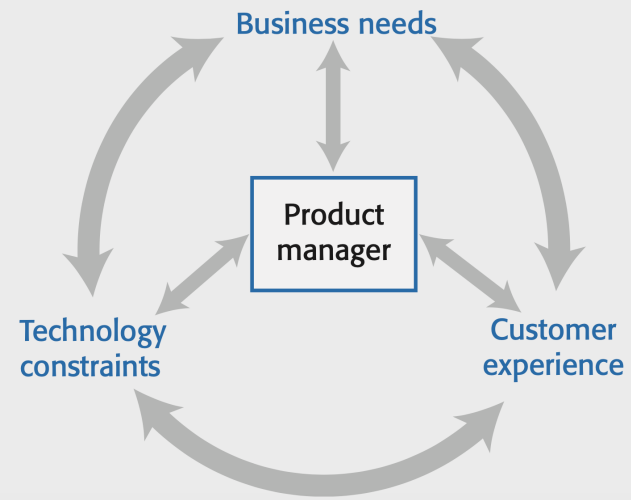
Why should customer buy this product?

Software Product Management

Software Product Management

- Software product management is a business activity focusing on the software products that are developed and sold by the business
- Product Management lead by **Product Manager(PM)**

Figure 1.4 Product management concerns

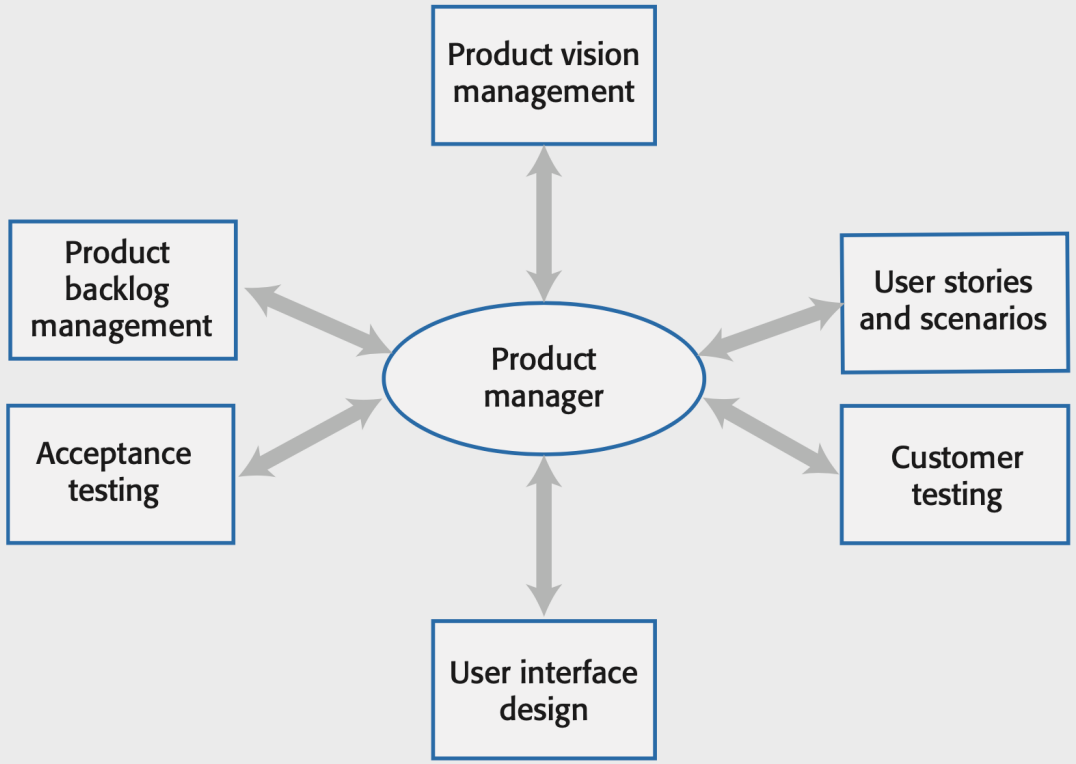


PM should consider all of them:

- Business needs
- Technology Constraint
- Customer experience

Technical Interactions of Product Managers

Figure 1.5 Technical interactions of product managers



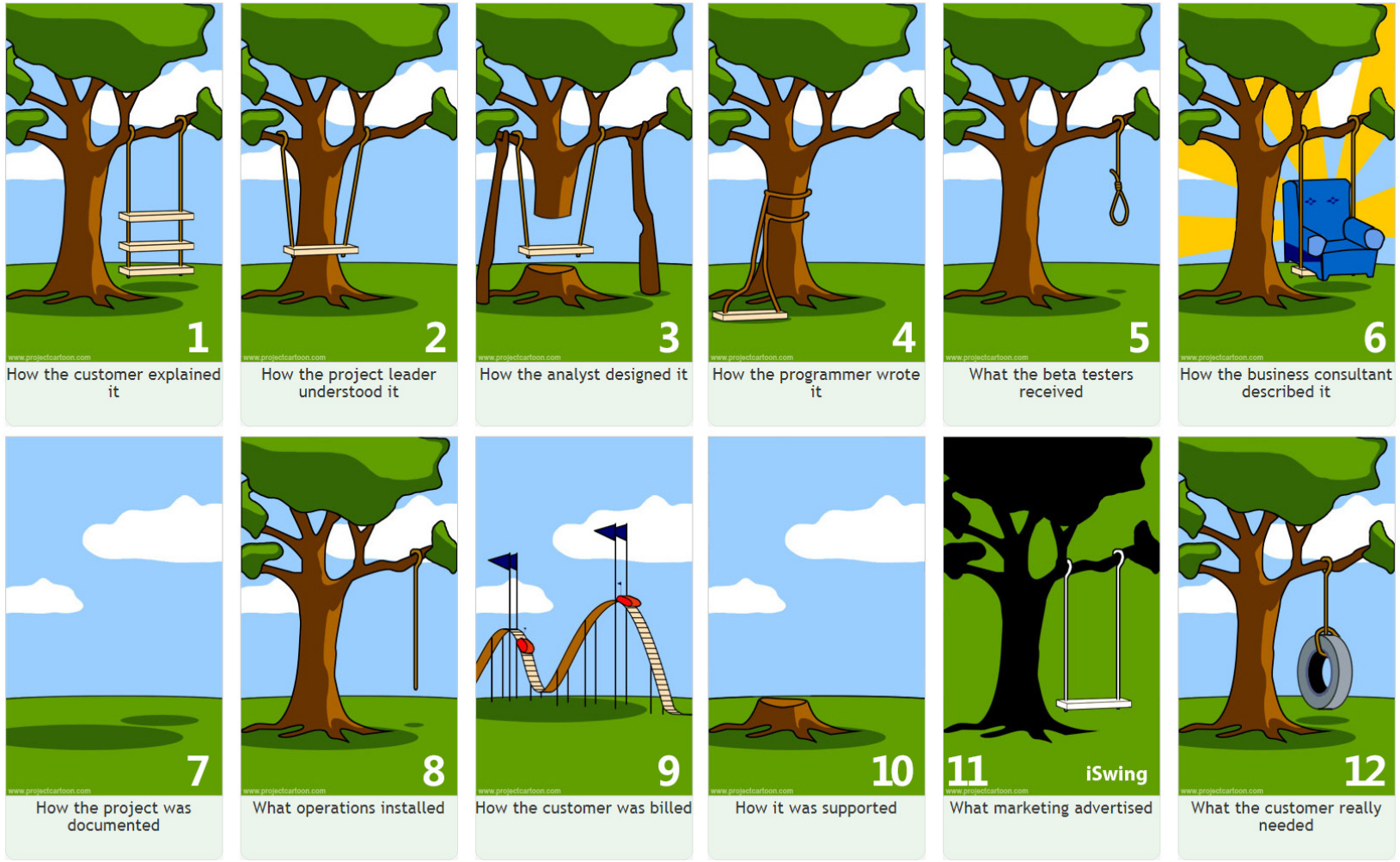
Product Prototyping

- Developing early version of a product to test your ideas and convince yourself and company funders that ypur product has real market potential
- Help identify fundamental software components or services and test technology

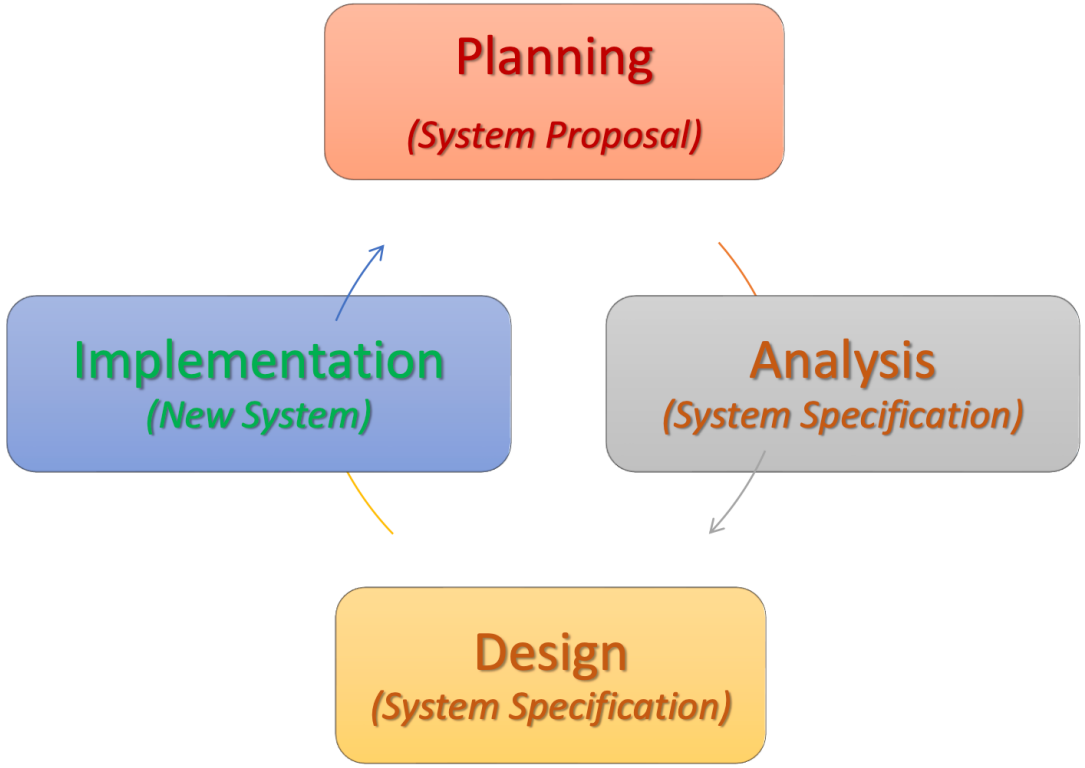
Software Development Life Cycle

Disadur dari materi Romi Satria Wahono : https://romisatriawahono.net/publications/2016/data-mining.pdf

The Tree Swing Story



Software Development Process



(Tilley, 2012) *(Dennis, 2016)* *(Valacich, 2017)*

Software Development Process

1. Planning : **Mengapa** harus dikembangkan?
   - System request, feasibility analysis, project size estimation
2. Analysis : **Siapa, Kapan** digunakan, dan **alur kerja** software
   - Requirement gathering, business process modelling
3. Design : **Bagaimana** bekerja dan komposisi dari software
   - Program design, user interface design, data design
4. Implementation : **Konstruksi** dan **Penyerahan** Software
   - System construction, testing, documentation, instalation

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