Software Engineering Streaming

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Outline

• Introduction
• Course Structure
• Research Topics
• Application Example from Thesis
• SE Career
Software Engineering

Definition

• The process of **solving customers’ problems** by the **systematic development** and evolution of large, **high-quality software** systems within **cost, time and other constraints**

• The systematic activities involved in the **design, implementation** and **testing** of software to optimize its production and support.
Nature of Software

- **Software is intangible**
  - Hard to understand development effort
- **Software is easy to reproduce**
  - Cost is in its development
- **The industry is labor-intensive**
  - Hard to automate
Why Software Engineering

[Diagram showing the process of software engineering from the customer's perspective, including stages such as explanation, understanding, design, writing, and description, followed by documentation, installation, billing, support, and customer need satisfaction.]
Course Structure

4th Semester

Code Reengineering  4
Agile Software Engineering  2
Pattern Software Design  2/2

5th Semester

Object Oriented Analysis & Design  2/2
Framework Layer Architecture  2/2
Code Reengineering

- Refactoring Science
- Simplify your code
- Less your complexity code
Agile Software Development

- Learn Scrum Methodology
- Learn Scrum practically with software tools
Pattern Software Design

- Learn Design Pattern in Object Oriented Programming
- Course starter to learn framework architecture software
Object Oriented Analysis & Design

- Learn thinking OO Design with UML Tools
- Use UML Tools effectively
Framework Layer Architecture

- Learn how to create architecture code in Enterprise Level
- Learn from MVC to Enterprise Architecture
Research Topics

- E-Health
- E-Commerce
- E-Learning
- E-Workflow Business
- Enterprise Integration System

Mobile Application

- Mobile Ubiquitous Computing
- Mobile Application

Computer Aided Software Engineering Tools

- Integrated Development Environment (IDE)
- Code Editor
- Diagram Software Tools
- Project Management Tools
Former Students Thesis

MindKeepin – IOS
OCR MindMap

WEB IDE SCRUM
METHODOLOGY

Medical Record System
Former Students Thesis

Content Management System (CMS)

Smart Traveling

System Penelusuran Publikasi

Mobile Apps – Pencarian Tempat makan
Former Students Thesis

- PENGEMBANGAN APLIKASI PERKIRAAN KEDATANGAN BUS TRANSJAKARTA MENGGUNAKAN GPS DAN WEB SERVICE

- PENGEMBANGAN APLIKASI VIRTUAL MEETING "DOVO" PADA SMARTPHONE BERBASIS ANDROID MENGGUNAKAN TEKNOLOGI VOICE OVER INTERNET PROTOCOL BERBASIS SESSION INITIATION PROTOCOL

- PENGEMBANGAN APLIKASI EVENT ORGANIZER "BOLT EVENT" DENGAN TEKNOLOGI RESTFUL PADA SMARTPHONE ANDROID

- PENGEMBANGAN APLIKASI PENGORGANISASIAN DOKUMEN "LETTERY" PADA SMARTPHONE BERBASIS ANDROID

- PENGEMBANGAN APLIKASI PENGENDALI KOMPUTER JARAK JAUH "ALTERMOTE" MENGGUNAKAN TEKNOLOGI WI-FI PADA SMARTPHONE BERBASIS ANDROID

- PENGEMBANGAN APLIKASI MOBILE BUKU HARIAN UNTUK BAYI PADA PT. DIHARDJA SOFTWARE SOLUTIONS
Former Students Thesis

• LAYANAN PERENCANAAN DAN PENJADWALAN PARIWISATA MASYARAKAT INDONESIA DENGAN KONSEP JEJARING SOSIAL BERBASIS WEB

• PENGEMBANGAN PROTOTYPING APLIKASI NOTE-SHARING BERBASISKAN MULTIUSER DENGAN MENGIMPLEMENTASIKAN TEKNOLOGI WEBSOCKET DI TABLET ANDROID

• PENGEMBANGAN E-ORGANIZER EVENT BERBASIS WEB DAN MOBILE DENGAN MENGGUNAKAN TEKNOLOGI NOSQL

• PENGEMBANGAN SISTEM PENGUKURAN BIAYA PEMBUATAN PIRANTI LUNAK

• SISTEM PENGAMBILAN NOMOR ANTRIAN MELALUI PENDEKATAN UBIQUITOUS COMPUTING
Management
- Chief Technology Officer
- Chief Information Officer
- IT Consultant

System Development
- Project Manager
- Systems Analyst
- Systems Administrator
- Systems Programmer
- Applications Programmer

Web Specialist
- Web Designer
- Web Programmer
- Web Administrator

Scientist
- Lecturer / Trainer
- Researcher
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