



PERANCANGAN SISTEM INFORMASI

Session 1 Introduction

Based on *System Analysis & Design 2nd Edition*

Authors : Alan Dennis & Barbara Haley Wixom

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Objectives

- Understand the fundamental systems development life cycle and its four phases.
- Understand several different types of methodologies and how to choose among them.
- Be familiar with the different skills and roles on the project team.



THE SYSTEMS DEVELOPMENT **LIFE CYCLE**



Project Phases

■ Planning

- Why build the system? How should the team go about building it?

■ Analysis

- Who uses system, what will it do, where and when will the system be used?

■ Design

- How will the system work?

■ Implementation

- System delivery



Planning

- **Identifying business value**
- **Analyze feasibility**
- **Develop work plan**
- **Staff the project**
- **Control and direct project**

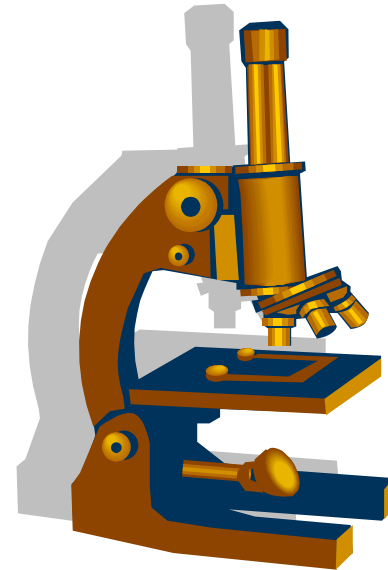
What are deliverables of planning phase?



Analysis

- **Analysis strategy**
- **Gathering business requirements**
- **Requirements definition use cases**
- **Process modeling**
- **Data modeling**

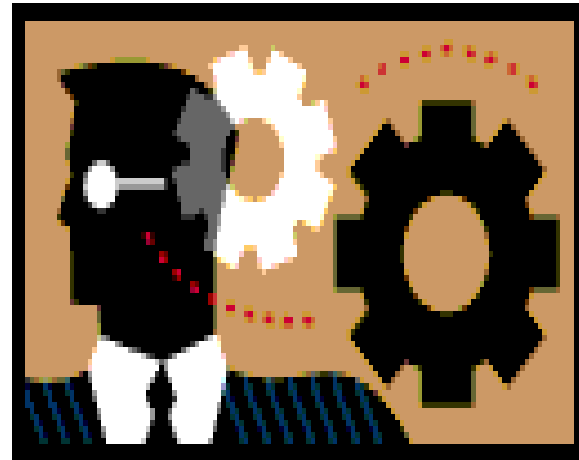
**What are deliverables
of analysis phase?**



Design

- Design selection
- Architecture design
- Interface design
- Data storage design
- Program design

What are deliverables of design phase?



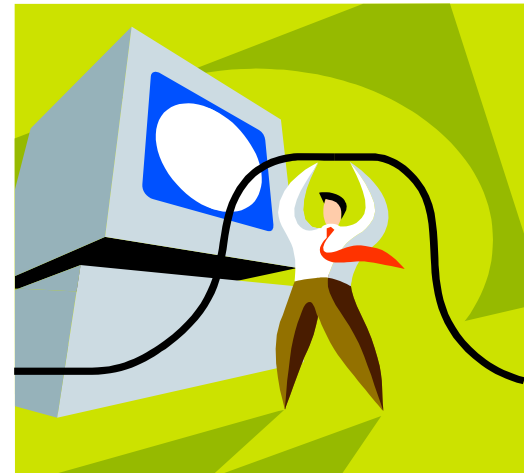
Implementation

■ Construction

- Program building
- Program and system testing

■ Installation

- Conversion strategy
- Training plan
- Support plan



**What are deliverables
of implementation phase?**

SYSTEM DEVELOPMENT **METHODOLOGIES**

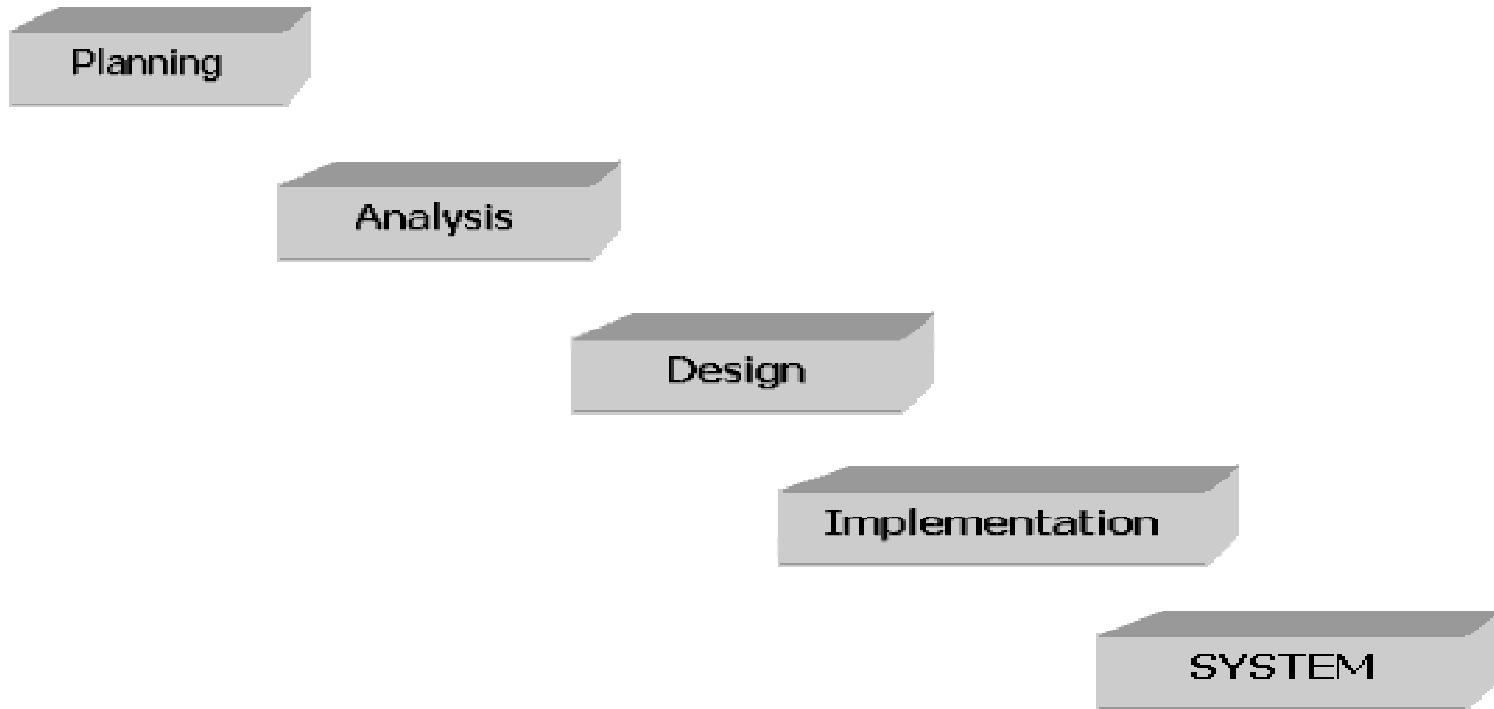


What is Methodology ?

- **A formalized approach to implementing the SDLC**
 - A series of steps and deliverables
- **Methodology Categories**
 - Process-Centered
 - Data-Centered
 - Object-Oriented
 - Structured Design
 - Rapid Application Development
 - Agile Development



Waterfall Development Methodology



Pros and Cons of the Waterfall Methodology

■ PROS

- Identifies systems requirements long before programming begins
- Minimizes changes to requirements as project progresses

■ CONS

- Design must be specified on paper before programming begins
- Long time between system proposal and delivery of new system



Rapid Application Development

- **Incorporate special techniques and tools:**
 - **CASE tools**
 - **JAD sessions**
 - **Fourth generation/visualization programming languages**
 - **Code generators**

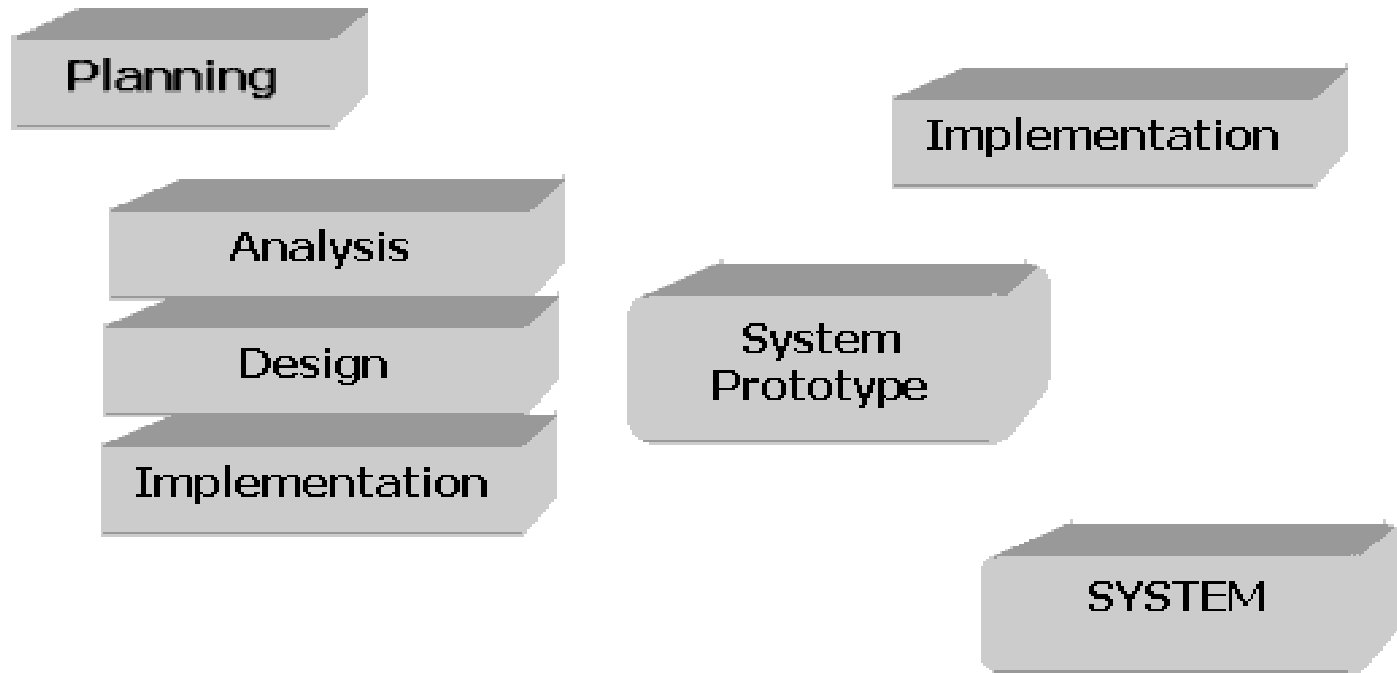


Three RAD Categories

- **Phased development**
 - A series of versions developed sequentially
- **Prototyping**
 - System prototyping
- **Throw-away prototyping**
 - Design prototyping



How Prototyping Works



Pros and Cons of Prototyping Methodology

■ PROS

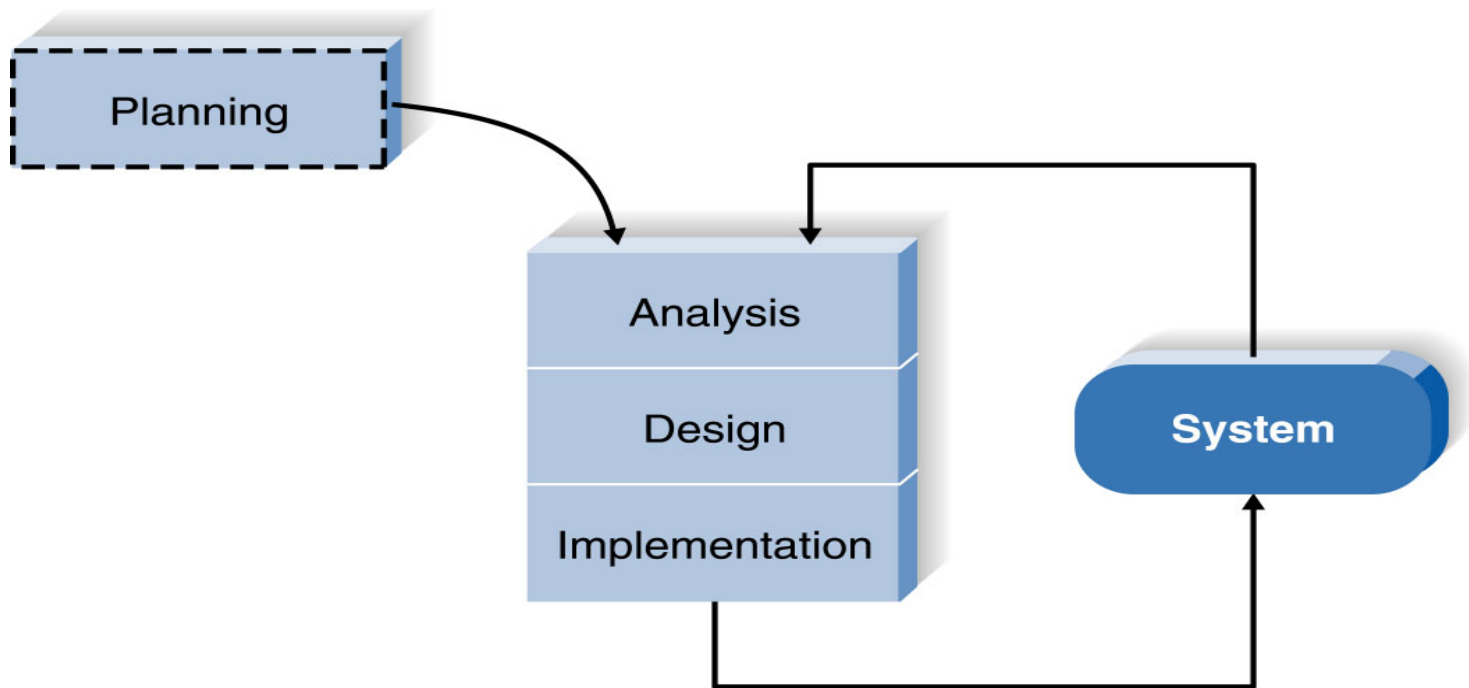
- Users Interact with Prototype Very Quickly
- Users Can Identify Needed Changes And Refine Real Requirements

■ CONS

- Tendency to do Superficial Analysis
- Initial Design Decisions May Be Poor



Agile Development: Extreme Programming



Pros and Cons of Agile Methodologies

■ PROS

- **Fast Delivery of Results**
- **Works Well in Projects With Undefined or Changing Requirements**

■ CONS

- **Requires Discipline**
- **Works Best in Small Projects**
- **Requires Much User Input**



Criteria for Selecting the Appropriate Methodology

- **Clear user requirements**
- **Familiarity with technology**
- **Complexity of system**
- **Reliability of system**
- **Time schedule**
- **Schedule visibility**



Summary

- **The Systems Development Lifecycle consists of four stages: Planning, Analysis, Design, and Implementation**
- **There are six major development methodologies: the waterfall method, the parallel development method, the phased development method, system prototyping, design prototyping, and agile development.**

