




# Information Systems Development

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# System Development Life Cycle Overview

- The systems development life cycle (SDLC) is the process of determining how
  - an information system (IS) can support business needs,
  - designing the system,
  - building it,
  - and delivering it to users.
- Creating high-quality information system is complex.
- IT projects have a failure rate of 30-70%.
  - Many projects fail due to lack of understanding of organizational goals and integration.
- Primary Objective
  - Create value for the organization, not just a wonderful system.



# Systems Analyst

- Key role in IS development projects.
  - Works closely with project team members.
  - Applies technology to solve business problems.
  - Acts as change agents, designing systems and training users.
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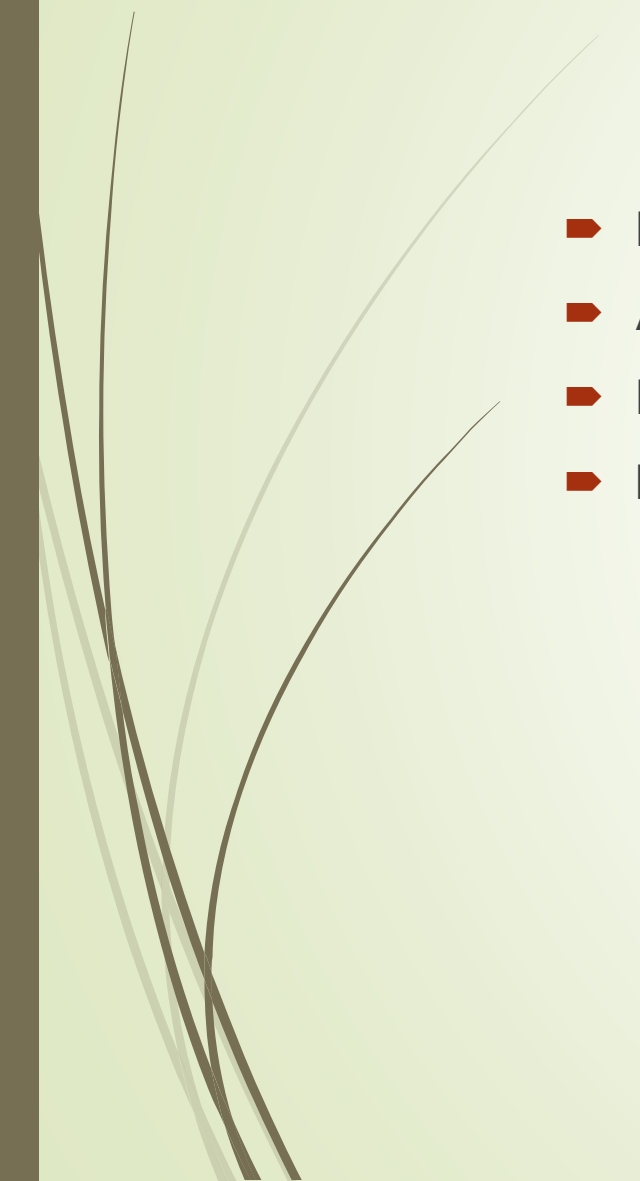
# Systems Analyst Skills



- **Technical:** Understand technical environment and integrate solutions.
- **Business:** Apply IT to business processes for real value.
- **Analytical:** Solve problems at project and organizational levels.
- **Interpersonal:** Communicate effectively with various stakeholders.
- **Management:** Manage people, pressure, and risks.
- **Ethical:** Deal fairly and maintain confidentiality.



# SDLC Phases

- **Planning:** Define project scope and objectives.
  - **Analysis:** Understand business needs and requirements.
  - **Design:** Create system architecture and design.
  - **Implementation:** Build, test, and deliver the system.
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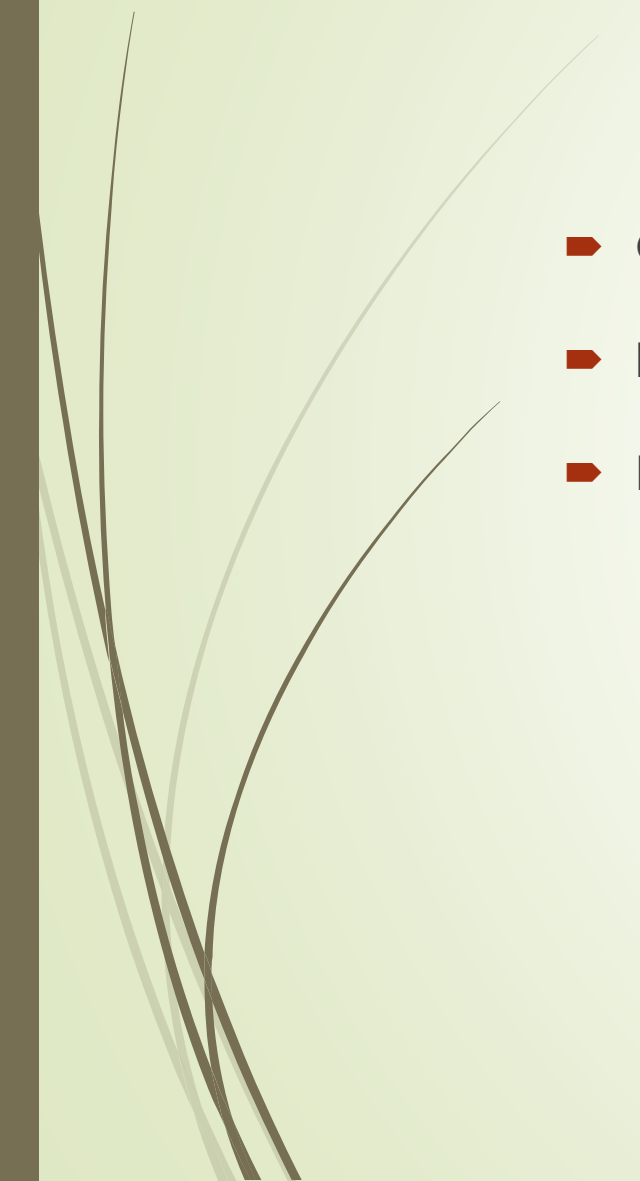
# Planning Phase



- Understand why an IS should be built and how to build it.
- Identify the system's business value during project initiation.
- System request summarizes business need and value.
  - **Business Need:** The business-related reason(s) for initiating the system
  - **Business Requirements:** The new or enhanced business capabilities that the system will provide
  - **Business Value:** The benefits that the system will create for the organization
  - **Special Issues or Constraints:** Issues that pertain to the approval committee's decision



# Planning Phase - Feasibility Analysis

- Guides decision on whether to proceed with the project.
  - Identifies important project risks.
  - Examines:
    - **Technical Feasibility:** Can we build it
    - **Economic Feasibility:** Will it provide business value
    - **Organizational Feasibility:** Will it be used
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# Technical Feasibility

- Assess if the system can be designed, developed, and installed.
- Risks include:
  - Familiarity with the application and technology.
  - Project size.
  - Compatibility with existing technology.





# Economic Feasibility

- Perform cost-benefit analysis.
- Determine financial worthiness by identifying costs/benefits, assigning values, and calculating future cash flows.



# Organizational Feasibility

- Assess system acceptance and integration into operations.
- Factors include:
  - Strategic alignment with business strategy.
  - Stakeholder analysis (project champion, management, users).



# Analysis Phase



- Answers the questions of
  - who will use the system,
  - what the system will do,
  - where and when it will be used.
- Develop analysis strategy (study as-is system, design to-be system).
- Gather requirements (interviews, workshops, questionnaires).
- Create system proposal (analyses, system concept, requirements, models).
- Present proposal to project sponsor and key decision makers.



# Design Phase



- Decides how the system will operate.
- Determine design strategy (in-house development, outsourcing, prewritten software).
- Develop architecture design, interface design, database and file specifications.
- Create detailed design
- Deliverable: System specification.
- Reexamine and revise feasibility analysis and project plan.



# Implementation Phase



- System is built or purchased and installed.
- System construction and testing.
- System installation (old system off, new system on).
- Conversion approaches and user training.
- Establish support plan (post-implementation review, identify changes).



# References

- ▀ Systems Analysis and Design, 8th Edition by Alan Dennis, Barbara Haley Wixom, and Roberta M. Roth. Published by John Wiley & Sons, 2021