Systems development life cycle (SDLC)

Lecture 2

SDLC

The systems development life cycle (SDLC) is the overall process for developing information systems from planning and analysis through implementation and maintenance.

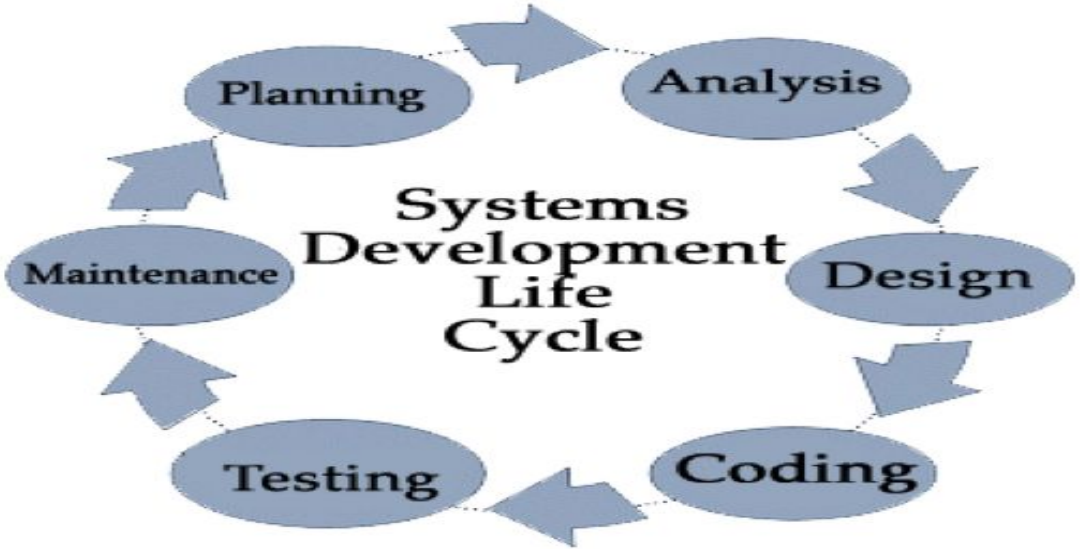
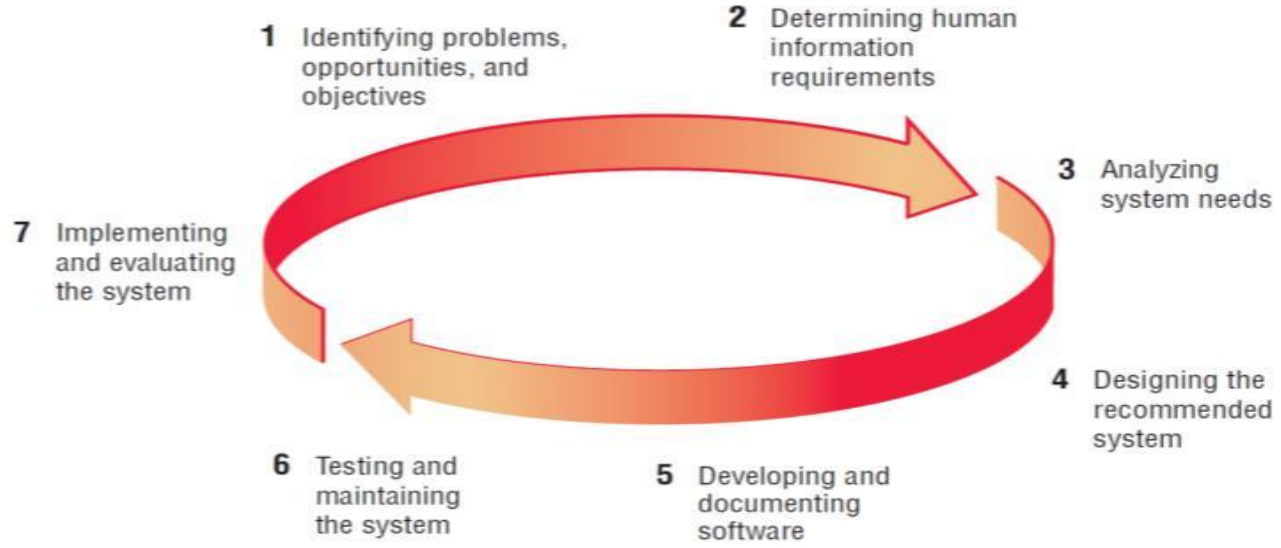


Figure 1.3 The seven phases of the systems development life cycle

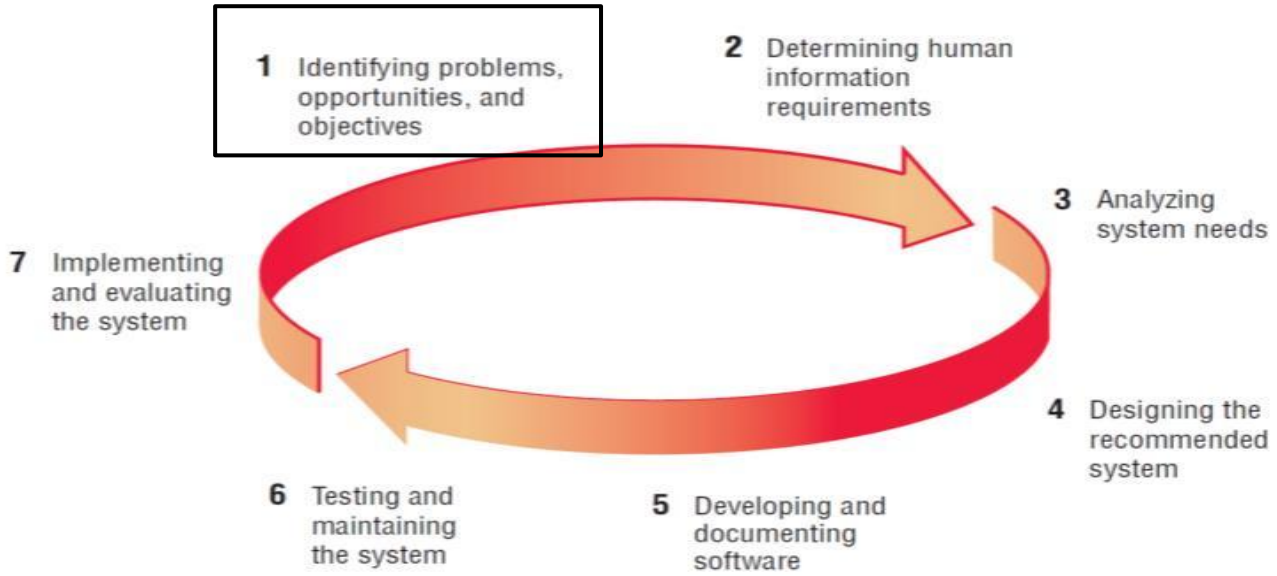


Phases of SDLC

The seven phases of the systems development life cycle :

- Identifying Problems, Opportunities, and Objectives
- Determining Human Information Requirements
- Analyzing System Needs
- Designing the Recommended System
- Developing and Documenting Software
- Testing and Maintaining the System
- Implementing and Evaluating the System

Figure 1.3 The seven phases of the systems development life cycle



Phase 1: Identifying Problems, Opportunities, and Objectives

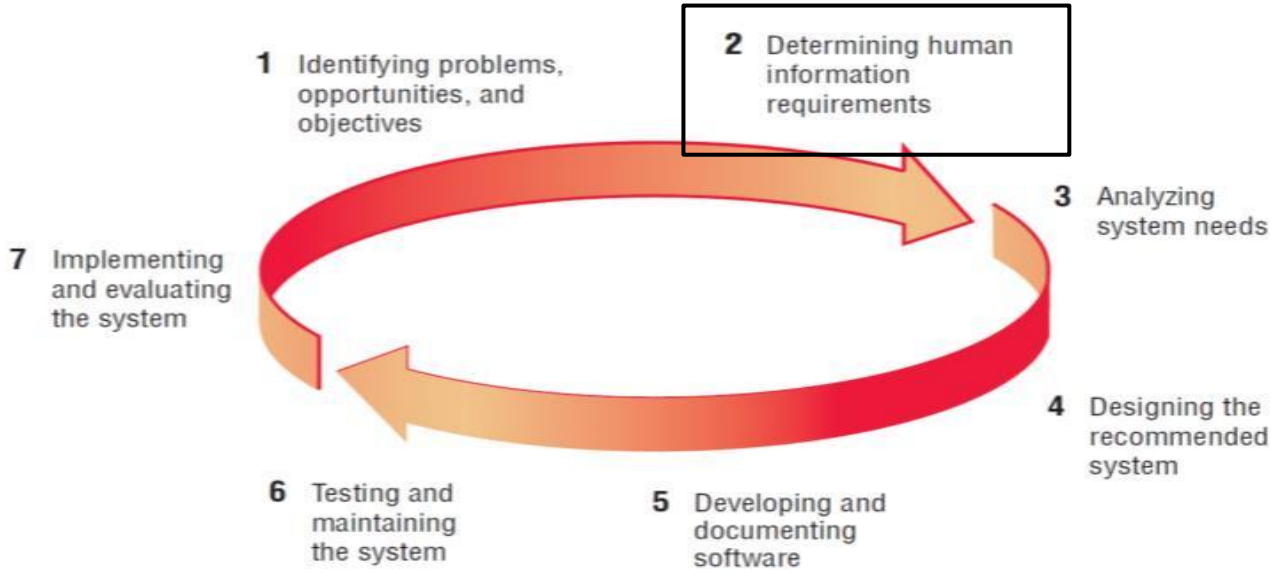
Activity:

- Interviewing user management
- Summarizing the knowledge obtained
- Estimating the scope of the project
- Documenting the results

Output:

Feasibility report containing problem definition and objective summaries from which management can make a decision on whether to proceed with the proposed project.

Figure 1.3 The seven phases of the systems development life cycle



Phase 2: Determining Human Information Requirements

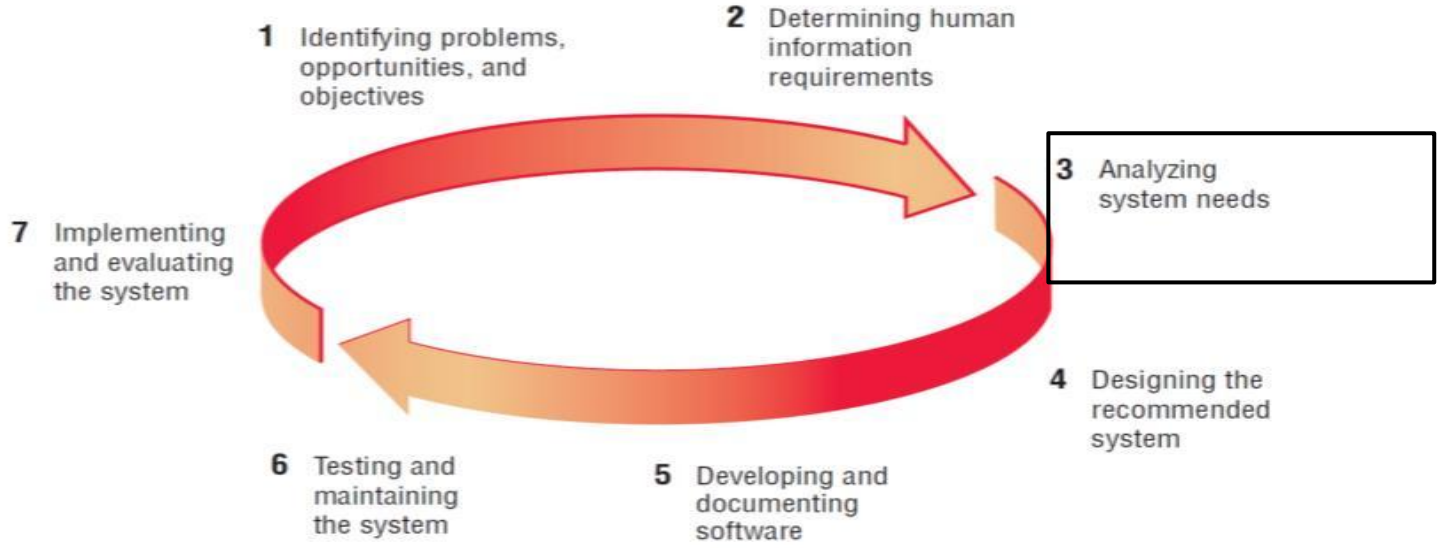
Activity :

- Interviewing
- Sampling and investing hard data
- Questionnaires
- Observe the decision maker's behavior and environment
- Prototyping
- Learn the who, what, where, when, how, and why of the current system

Output:

- Analyst understands how users accomplish their work when interacting with a computer; and begin to know how to make the new system more useful and usable.
- The analyst should also know the business functions and have complete information on the people, goals, data and procedure involved

Figure 1.3 The seven phases of the systems development life cycle



Phase 3: Analyzing System Needs

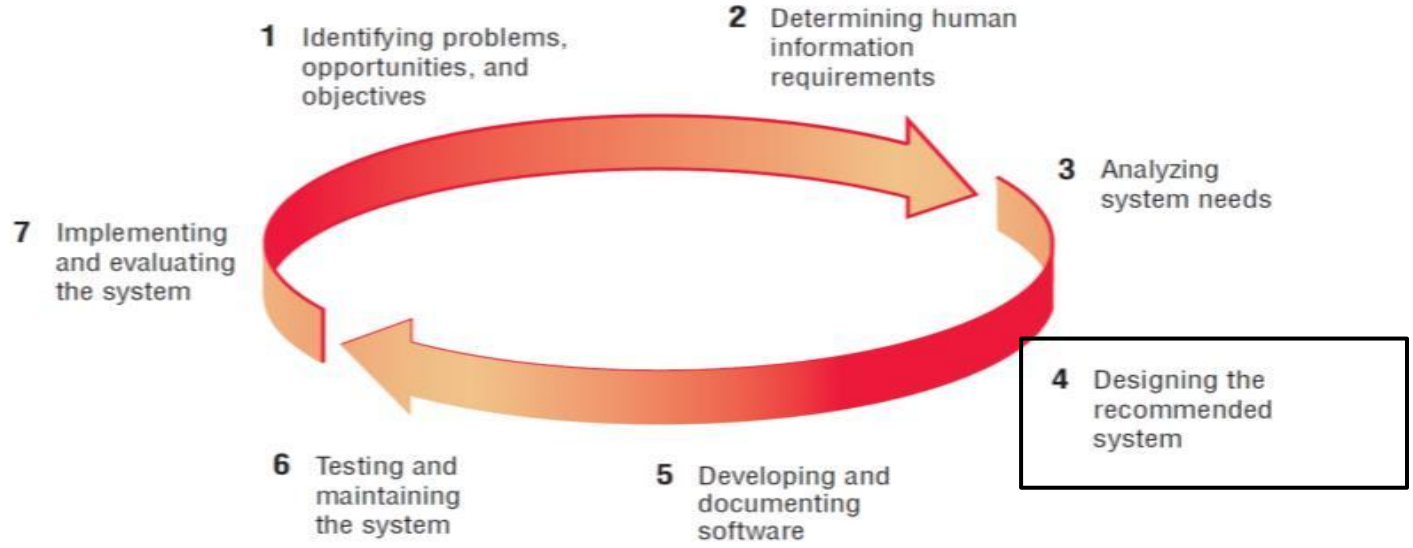
Activity:

- Create data flow diagrams
- Complete the data dictionary
- Analyze the structured decisions made
- Prepare and present the system proposal

Output:

- Recommendation on what, if anything, should be done

Figure 1.3 The seven phases of the systems development life cycle



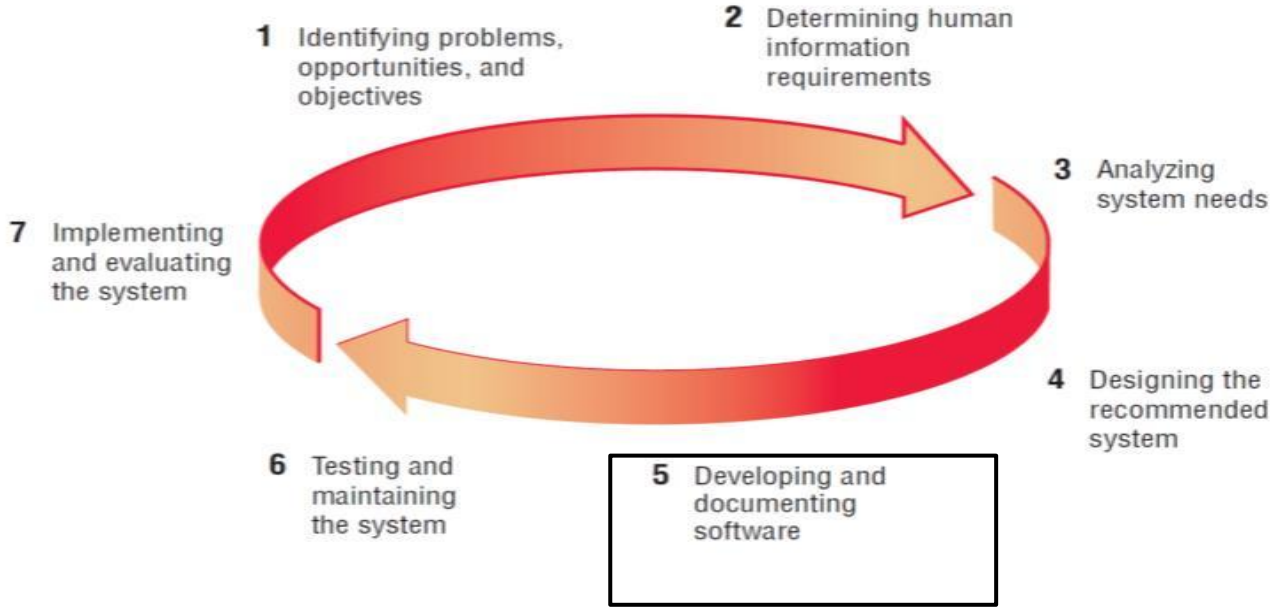
Phase 4: Designing the Recommended System

Activity:

- Design procedures for data entry
- Design the human-computer interface
- Design system controls
- Design files and/or database
- Design backup procedures

Output : Model of the actual system

Figure 1.3 The seven phases of the systems development life cycle



Phase 5: Developing and Documenting Software

Activity:

- System analyst works with programmers to develop any original software

- Works with users to develop effective documentation

- Programmers design, code, and remove syntactical errors from computer programs

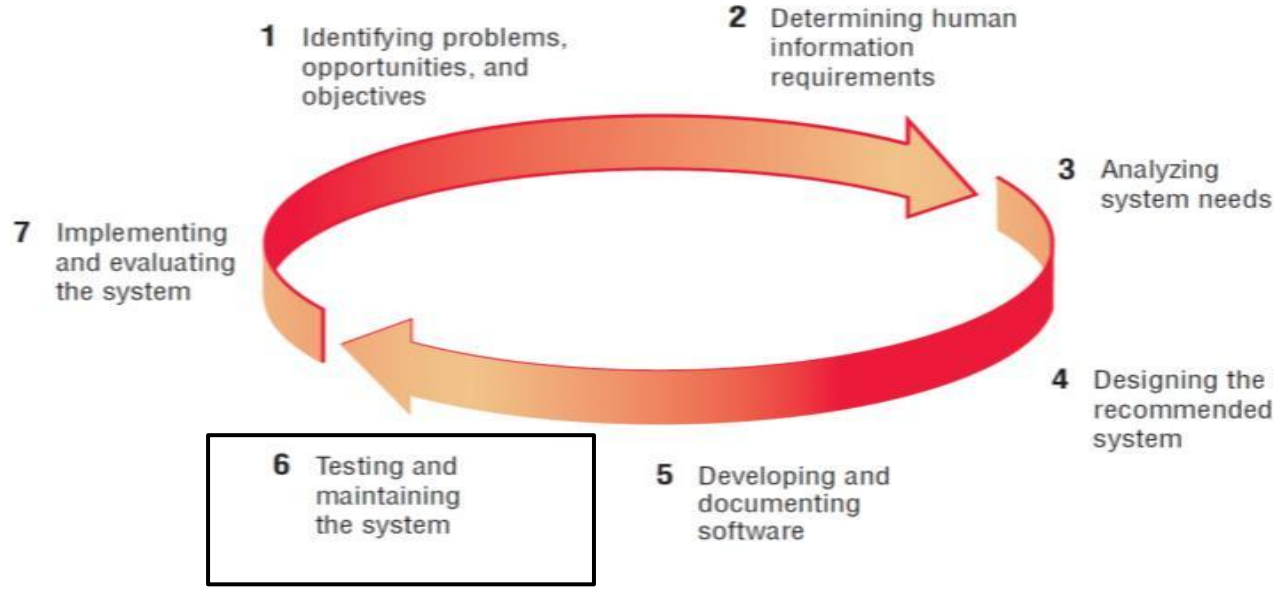
- Document software with help files, procedure manuals, and Web sites with Frequently Asked Questions.

Output:

- Computer programs

- System documentation

Figure 1.3 The seven phases of the systems development life cycle



Phase 6:Testing and Maintaining the System

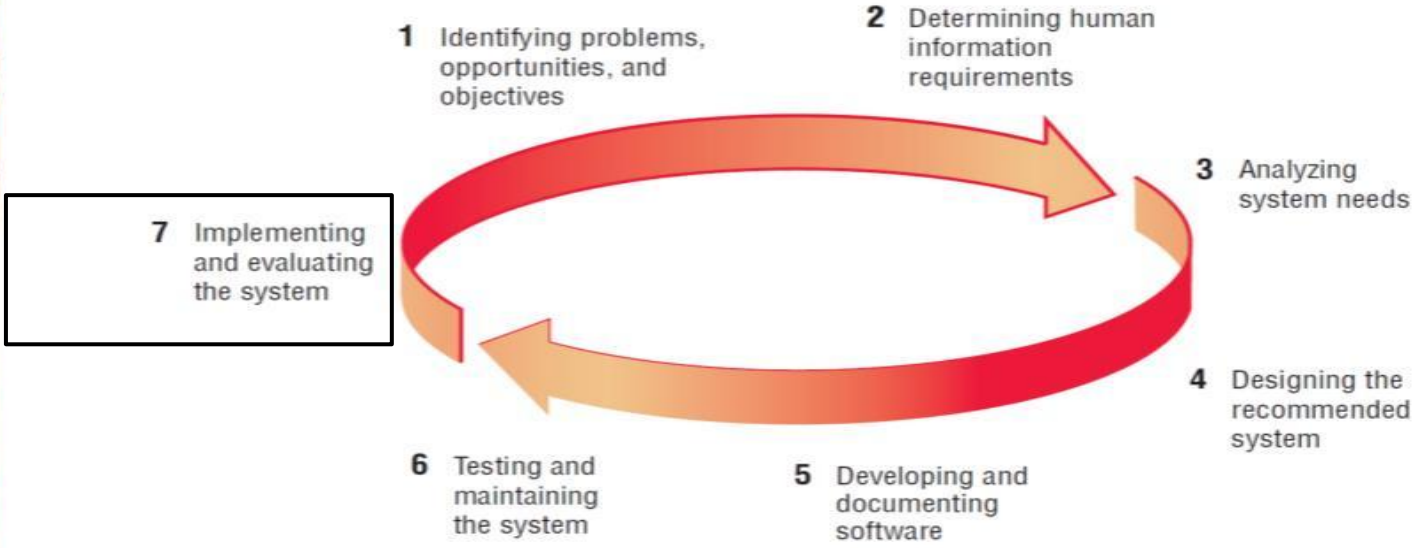
Activity:

- Test the information system
- System maintenance
- Maintenance documentation

Output:

- Problems, if any
- Updated programs
- Documentation

Figure 1.3 The seven phases of the systems development life cycle



Phase 7: Implementing and Evaluating the System

Activity:

- Train users
- Analyst plans smooth conversion from old system to new system
- Review and evaluate system

Output:

- Trained personnel
- Installed system

Case study of SDLC

Health care

Approaches to Structured Analysis and Design and to the Systems Development Life Cycle

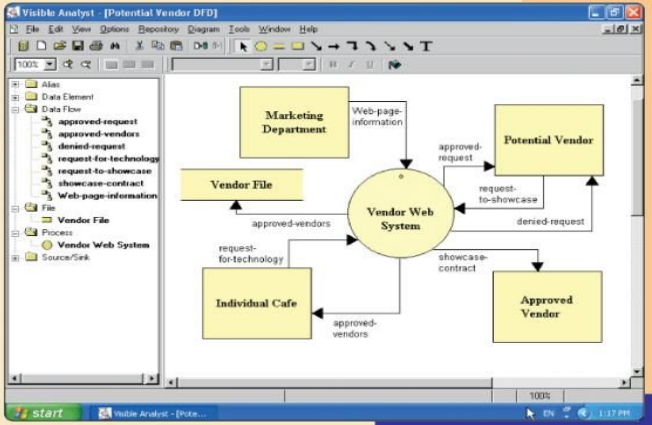
- Traditional systems development life cycle
- CASE systems development life cycle
- Object-Oriented Systems Analysis and Design

CASE systems development life cycle

The System Development Life Cycle

What is computer-aided software engineering (CASE)?

- **Software tools designed to support activities of system development cycle**



Object-Oriented Systems Analysis and Design

The Object-Oriented Systems Development Life Cycle

- **Analysis Phase**
  - Model of the real-world application is developed showing its important properties
  - Model specifies the functional behavior of the system independent of implementation details
- **Design Phase**
  - Analysis model is refined and adapted to the environment
- **Implementation Phase**
  - Design is implemented using a programming language or database management system

Lecture 3 : Feasibility Analysis