

# Computer Aided System Engineering Tools (CASE Tools)

## Tools

Any device that, when used properly, will improve the  
Performance of the task

### PROCESS Benefits

- Improve Analysts productivity
- Improve effectiveness

### PRODUCT Benefits

Improve information system  
quality

# Benefits of Tools in System Development

- Improve Productivity
- Improve Effectiveness
- Improve Information System Quality

# Benefits of Computer-Assisted Tools

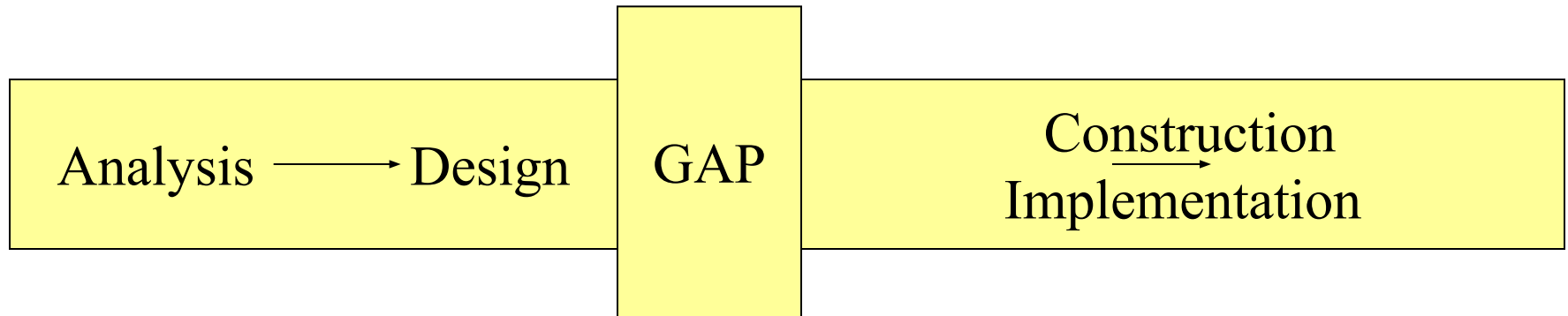
- Decrease Elapsed Time
- Automate Tedious Tasks
- Ensure Consistent Procedures
- Capture System Data

# Categories of Automated Tools

- Front-End Tools
- Back-End Tools
- Integration Tools

Front-end Development

Back-end Development



High-level Tools

Analysis Tools

Design Tools

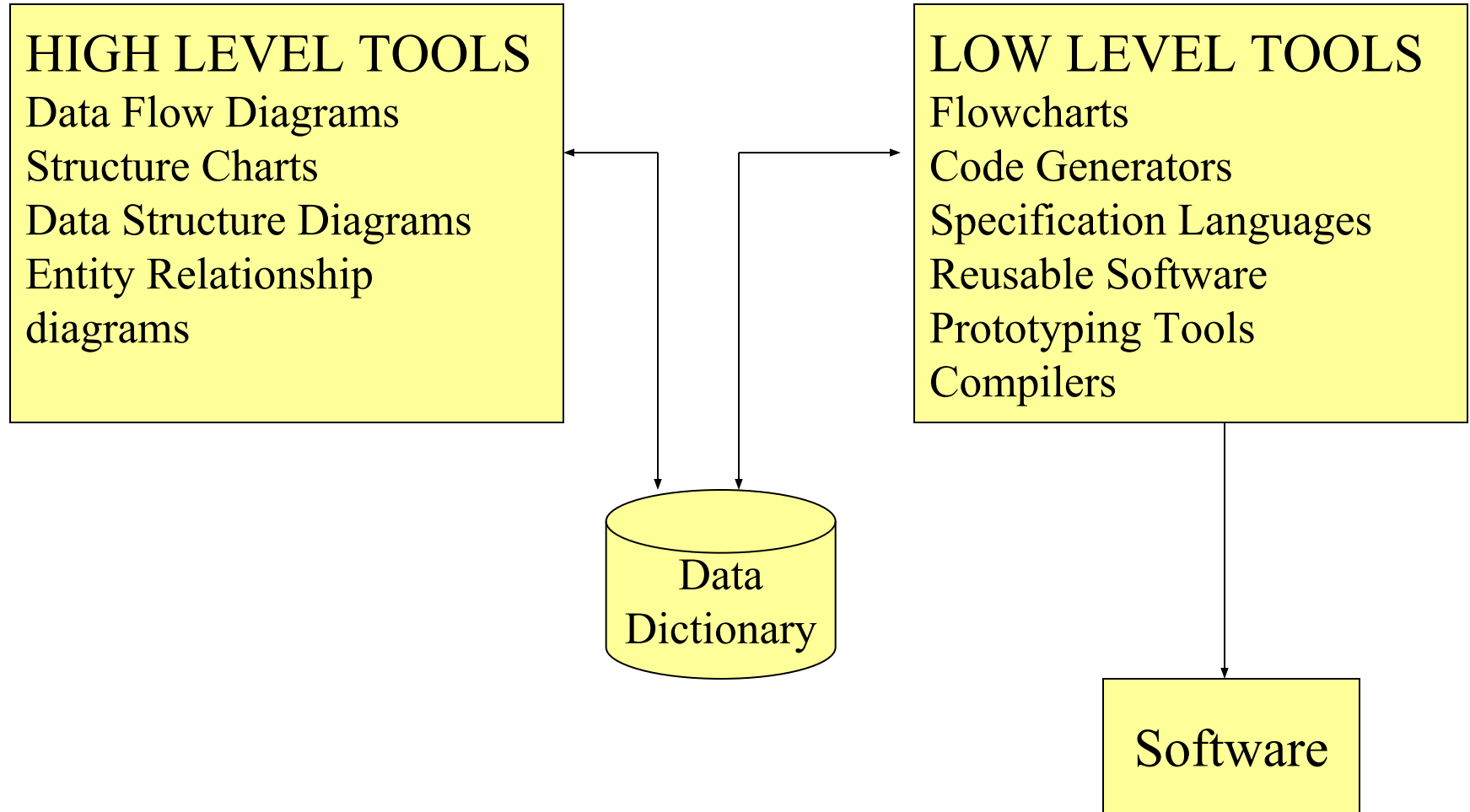
Specification Tools

Low-level Tools

Generator Tools

Translation Tools

Testing Tools



# CASE Components

- Diagramming Tools
- Centralized Information Repository
- Interface Generators
- Code Generators
- Management Tools
- Report Generators

# Benefits of CASE

- Easing the Revision of Applications
- Support of System Prototyping
- Code Generation
- Improved User Interaction
- Support Iterative Development Process



# Weaknesses of CASE

- Reliance on Structured Methods
- Absence of Standard Levels of Methodology Support
  - There are two meanings of “Support a Methodology”
    1. Support the diagrams a methodology uses
    2. It can support and enforce the methodology, its rules and processes

Current CASE tools have one of the following characteristics:

- Are methodology independent
- Allow user to define methodologies, rules and standards
- Support one methodology
- Support the most popular methodology
- Conflicting use of diagrams
- Limited Function
- Limited Scope
- Human Tasks Remain Critical

# Driving and Resisting Forces for CASE

Organizations adopt CASE tools to

- Provide new systems with shorter development time
- Improve the productivity of the systems development process
- Improve the quality of the development process
- Improve worker skills
- Improve the portability of new systems
- Improve the management of the systems development process

## Resisting Organizational forces for the adoption of CASE tools

- The high cost of purchasing the tools
- The high cost of training personnel
- Lack of methodology standards within the organization
- Viewing CASE tools as a threat to job security
- Lack of confidence in CASE products

# Traditional Systems Development Versus CASE Based Development

- Emphasis on coding and testing/ Emphasis on analysis and design
- Paper based specifications/ Rapid interactive prototyping
- Manual coding of programs/ Automated Code generation
- Manual Documentation/ Automated Documentation generation
- Intensive Software Testing/ Automated design checking
- Maintain code and documentation/ Maintain design specifications