Major components of system development

- Methodology
- Modeling Methods or Techniques
- Tools

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Methodology

- A set of
  - Activities
  - Methods
  - Best practices
  - Deliverables
  - Automated tools

- Used by stakeholders to
  - Develop
  - Continuously improve
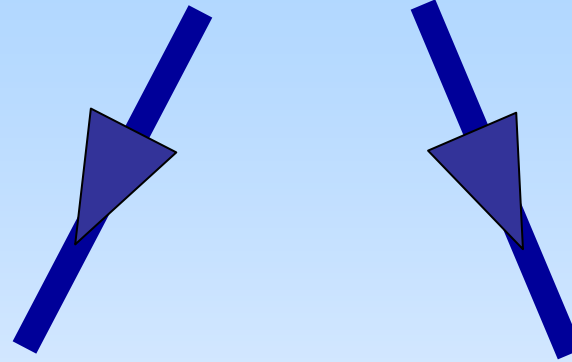
Information systems and Software

Methodology

- Provides the framework

- Has a predefined set of steps

- Ensures that systems are built in the most effective way

e.g. SSADM, RUP

Methodology

Modeling Methods or Techniques

Class Diagram,
Use Case Diagrams etc.

Tools

Rational Rose,
Rational Suit

Eg .Rational Unified Process
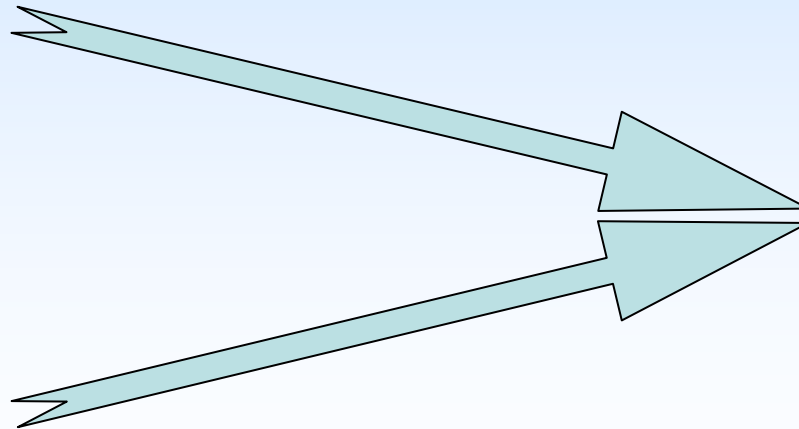
Methodology

- Uses tools and modeling methods

Tools

Methods

Most Effective
Way of
Building

Methodology

Supported by Modeling Methods or Techniques

- Techniques used to implement the Methodology.
- Provides the descriptions of the business system requirements from various view points.

Life Cycle vs. Methodology

- The system development methodology consists of several well-defined steps.

- When following a design methodology, a designer can select appropriate modeling method related to each step.
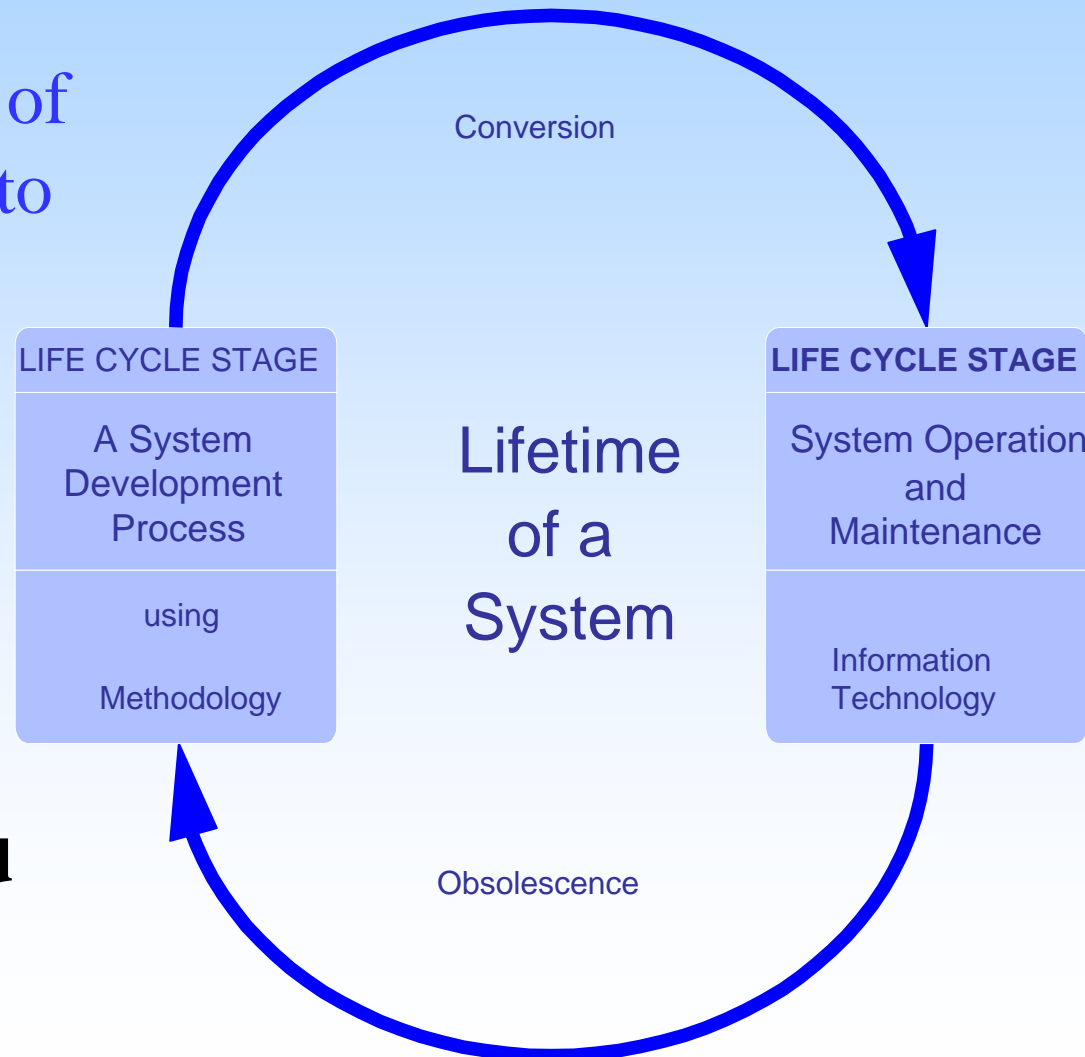
Life Cycle vs. Methodology

• A **system development life cycle** divides the life of an information system into two major stages,

> • **Systems development** (consists of system analysis, system design, system implementation and testing phases)

and

> • **Systems operation and support** (maintenance)

Conversion

LIFE CYCLE STAGE

A System Development Process

using

Methodology

Lifetime of a System

LIFE CYCLE STAGE

System Operation and Maintenance

Information Technology

Obsolescence

UCSC

Life Cycle vs. Methodology

- A **system development methodology** is a very formal and precise system development process that defines
  - a set of activities,
  - methods,
  - best practices,
  - deliverables,
  - and automated tools

Modeling Methods

A set of techniques used to implement Methodology

- Data Flow Diagrams -
    - A process model
    - Depict the flow of data through a system and the work performed by the system

- Entity Relationship Diagrams –
    - A data model
    - Depict data in terms of entities and relationships described by the data
    - Consists of several notations

Different Views of the System

- Structure Charts etc

Tools

- Software systems
- Assists analysts and designer to build information systems
- They will not replace Systems Analysts.

e.g. Easy Case, Rational Rose

Tools

General Aim :

❖Decrease the human effort required to develop the software.

❖Increase the quality of software

❖Tools will support methodologies but will not replace system analysts.