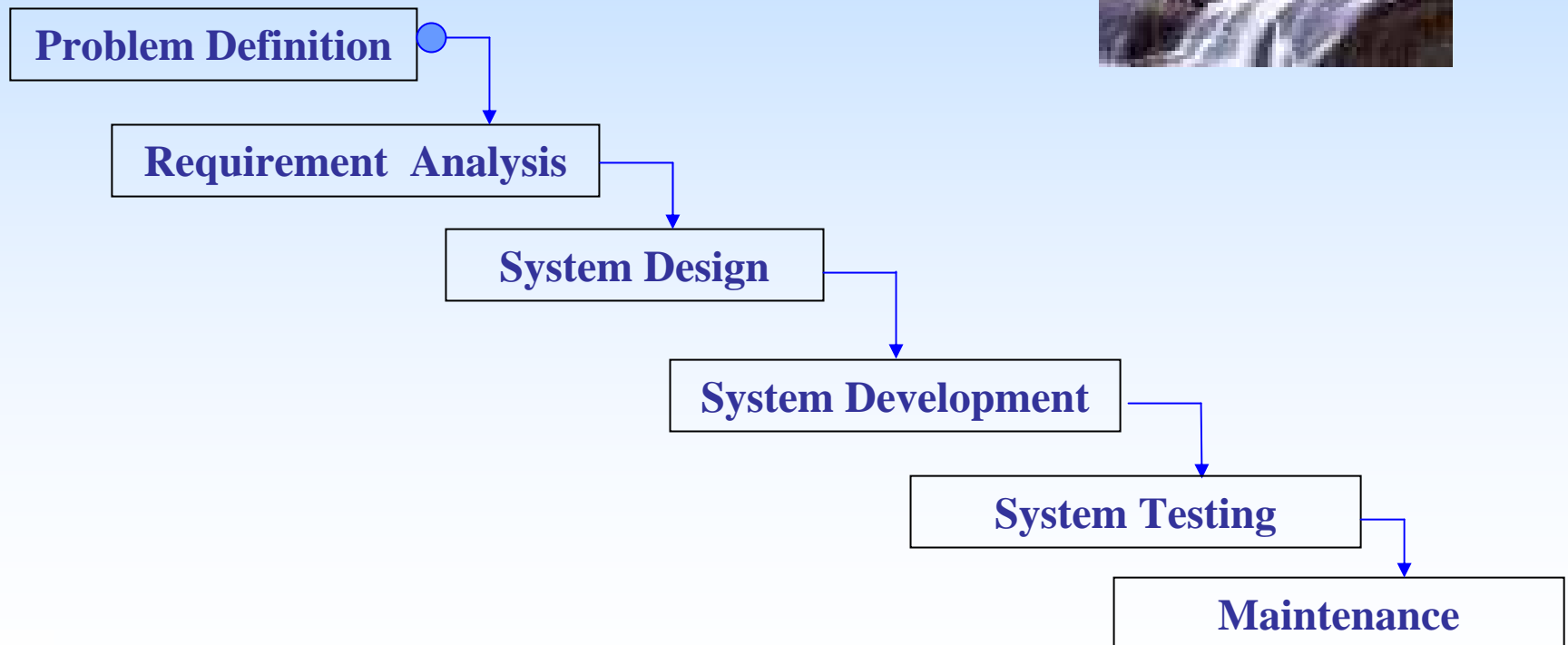
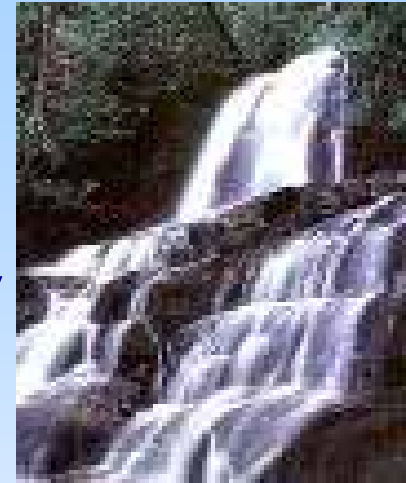


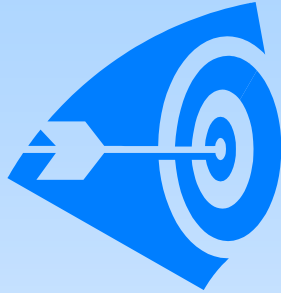
Sequential or Waterfall development approach

- An approach to system analysis and design
- Completes each phase one after another and only once.



Problem Definition

Project goals



Provides a broad statement of user requirements in users terms, or what the users expect the system to do

Project bound



project bounds are set during this phase. Defines what part of the system can be changed by the project and what parts are to remain same.

Project limits



Specify the resources to be made available for the project (*resource limits*).

System Analysis

- The study of a business problem domain to recommend improvements
- Specify the business requirements and priorities for the solution
- Business area is studied and analyzed to gain more information
- Produces a statement of the system users' business requirements, expectations and priorities for a solution to the business problem

System Analysis



how the current
system works and
what it does

Producing a detailed model of what the
new system will do and how it will work.



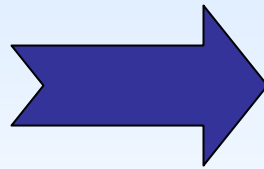
Producing a high-level
description of the system

System Design

- The specification or construction of a technical, computer based solution for the business requirements identified in a system analysis
- Initially explore alternative technical solutions
- Develops the technical blueprints and specifications



Analysts



Design

System Design

- Things to be done:
 - Select equipment
 - Specify new programs or changes to existing programs
 - Specify new database or changes to existing database
 - produce detailed procedures



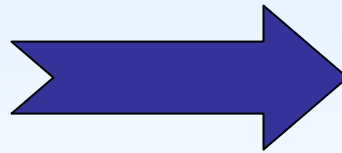
Design

System Implementation

- ⌚ Individual system components are built and tested
- ⌚ Data and tools are used to build the system
- ⌚ User interfaces are developed and tried by users
- ⌚ Database is initialized with data



Analysts



System

System testing

- Test and evaluate results, and
- the system ready to be delivered to the user/client.



Maintenance

- Eliminate errors in the system during its working life.
- Fixing any bugs and problem found by users
- Tune the system to any variations in its working environment



Problems with waterfall cycle

- ✓ It has a rigid design
- ✓ Inflexible
- ✓ It has a top-down procedure
- ✓ One phase must be completed before the next phase starts
- ✓ No phase can be repeated
- ✓ Time consuming

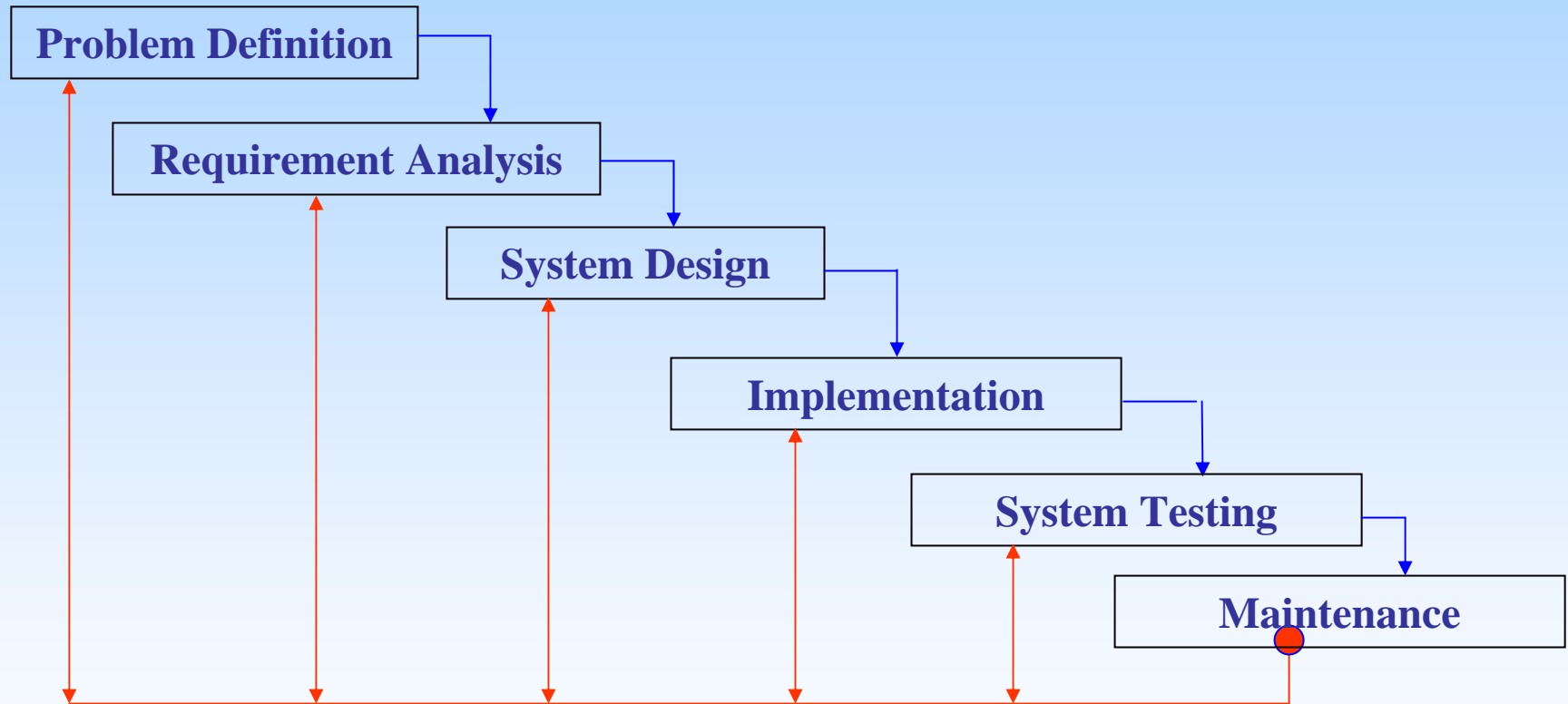
Criticisms fall into the following categories:

- ✓ Real projects rarely follow the sequential flow that the model proposes.
- ✓ At the beginning of most projects there is often a great deal of uncertainty about requirements and goals, and it is therefore difficult for customers to identify these criteria on a detailed level. The model does not accommodate this natural uncertainty very well.

Criticisms fall into the following categories: cont...

- ✓ Assumptions made in the early phases no longer hold
- ✓ Some of the early work is incomplete
- ✓ Something was overlooked or not completely understood.

Modified Waterfall Model



Modified Waterfall Model

- Allow some of the stages to overlap, such as the requirements stage and the design stage
- Make it possible to integrate feedback from one phase to another
- Incorporate prototyping.
- Verification and validation are added.
 - Verification checks that the system is correct (building the system right).
 - Validation checks that the system meets the users desires (building the right system).
- Progress is more difficult to track.

Iterative development approach

- An approach to systems analysis and design
- Completes the entire information system in successive iterations
- Each iteration does some
 - Analysis
 - design
 - Construction
- Allows versions of usable information to be delivered in regular and shorter time frames

Iterative development approach

