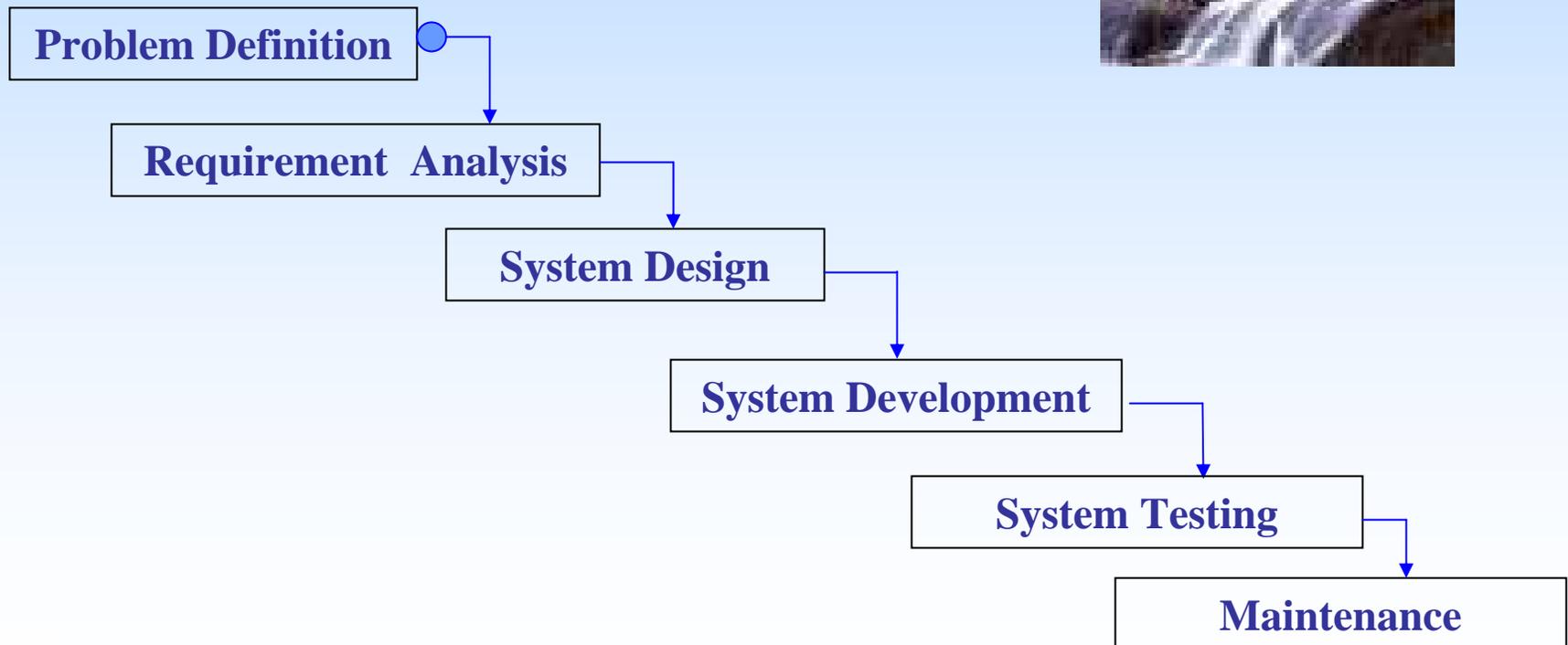


Sequential or Waterfall development approach

- 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.



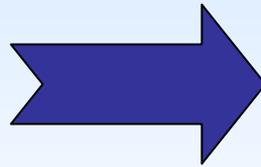
Producing a high-level description of the system

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

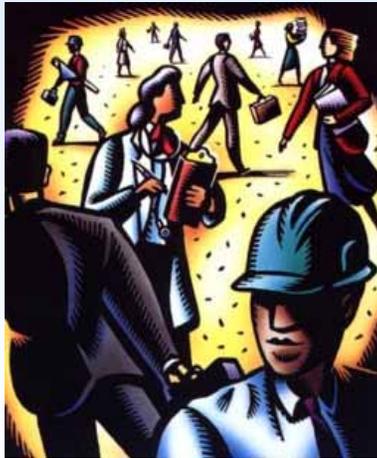
- Things to be done:
 - Select equipment
 - Specify new programs or changes to existing programs
 - Specify new database or changes to existing database
 - produce detailed procedures



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

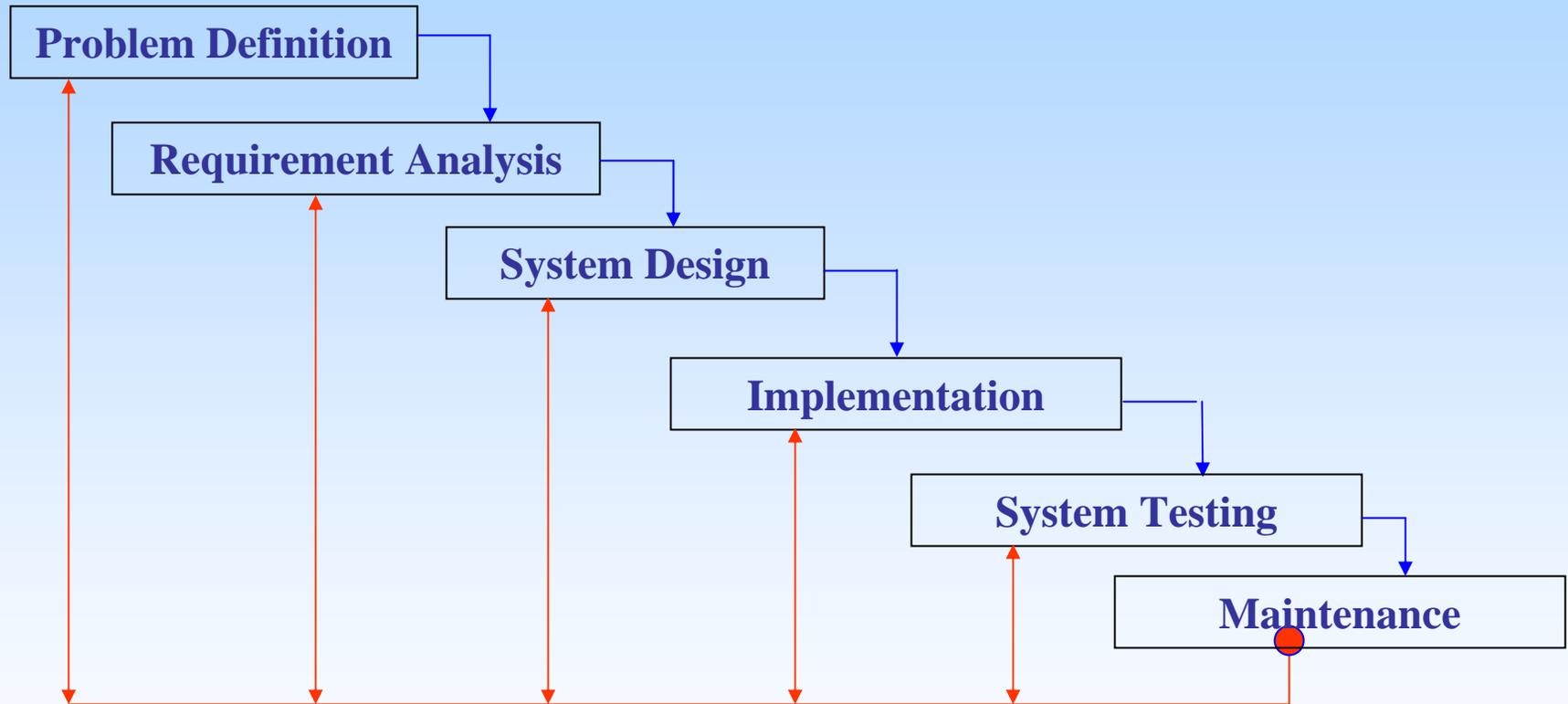
Criticisms fall into the following categories:

- ✓ 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

