

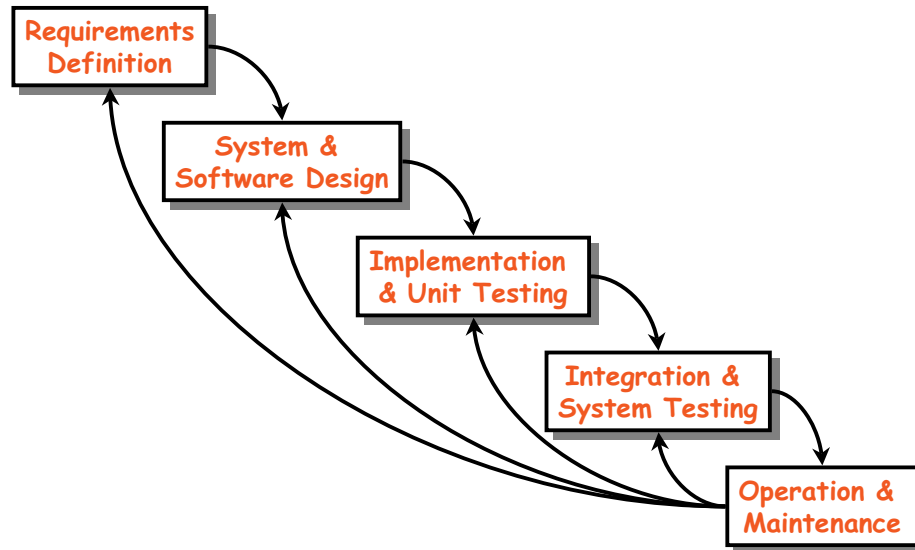
## A Few Facts About Software Today

- Software costs often dominate system costs.
  - The costs of software are often greater than the hardware cost
- Software costs more to maintain than it does to develop.
  - For systems with a long life, maintenance costs may be several times development costs

## Costs Involved

- Typically
  - 60% of costs are development costs,
  - 40% are testing costs.
  - For custom software, evolution costs often exceed development costs
- Costs vary depending on the type of system being developed and the requirements of system attributes such as performance and system reliability
- Distribution of costs depends on the development method that is used

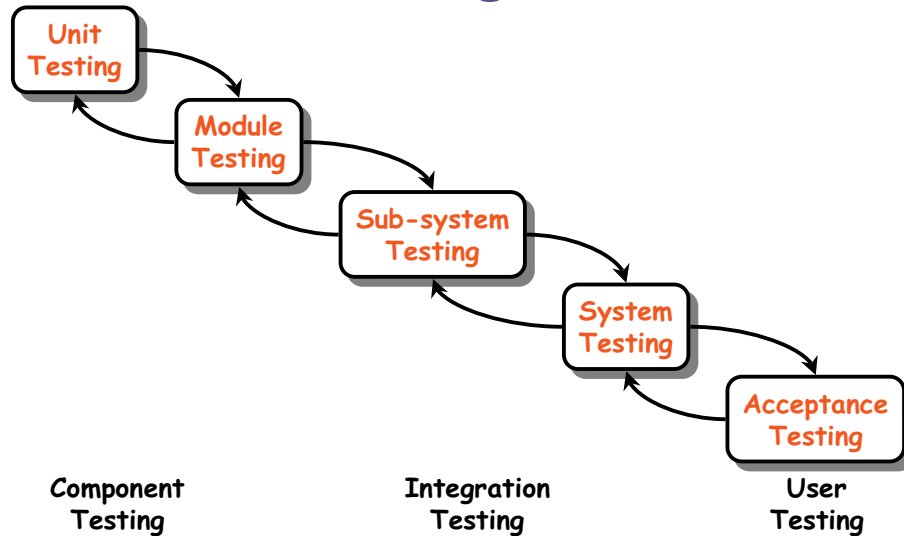
## Waterfall Model



## Extreme Programming

- An agile method
- New approach to development based on the development and delivery of very small increments of functionality
- Relies on constant code improvement, user involvement in the development team and pair programming

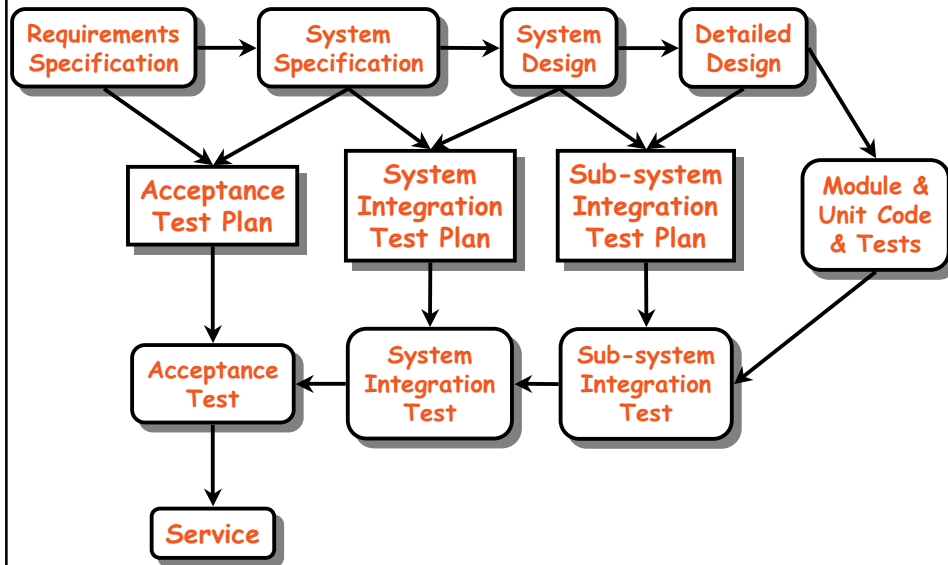
## The Testing Process



## Testing Stages

- Unit testing
  - Individual components are tested
- Module testing
  - Related collections of dependent components are tested
- Sub-system testing
  - Modules are integrated into sub-systems and tested. The focus here should be on interface testing
- System testing
  - Testing of the system as a whole
- Acceptance testing
  - Testing with customer data to check that it is acceptable

## Testing Phases



## System Evolution

