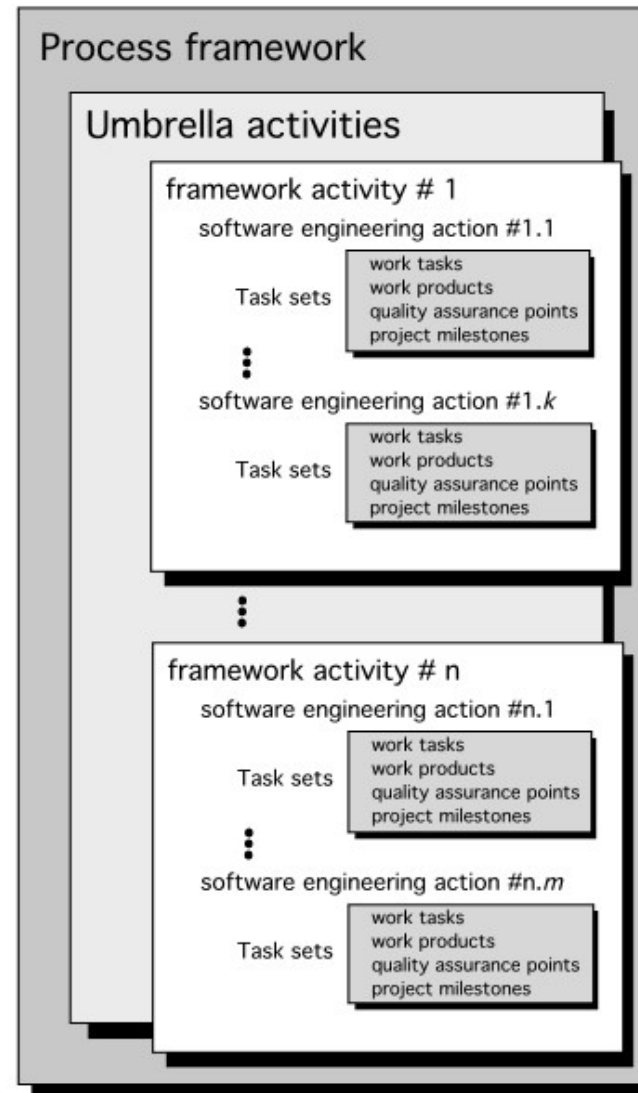


Software Process Models

Dr. Taimoor Khan

Software process

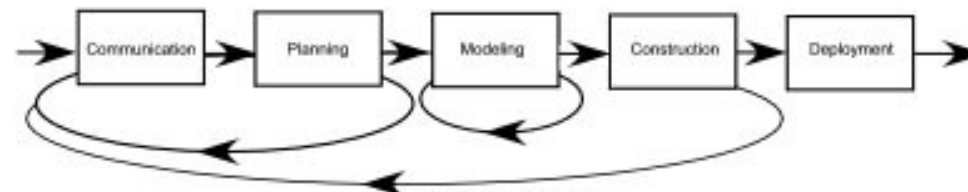


Identifying a Task Set

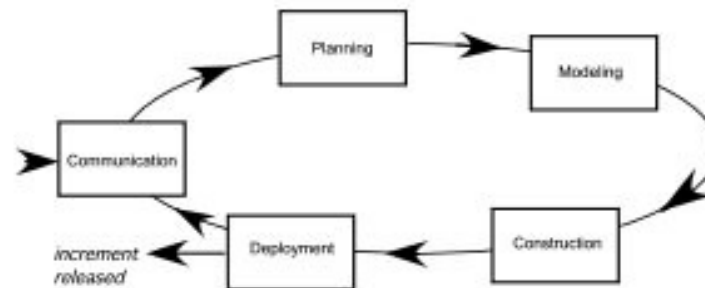
- A task set defines the actual work to be done to accomplish the objectives of a software engineering action.
 - A list of the task to be accomplished
 - A list of the work products to be produced
 - A list of the quality assurance filters to be applied



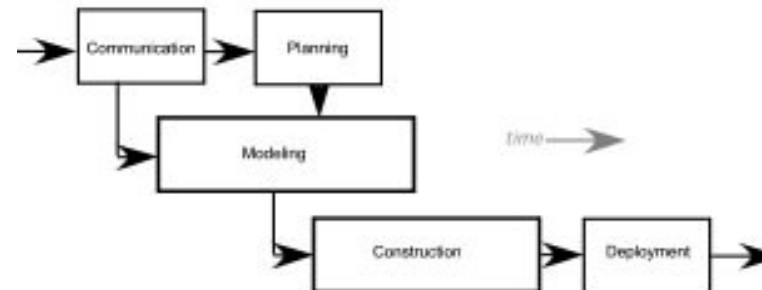
(a) linear process flow



(b) iterative process flow



(c) evolutionary process flow

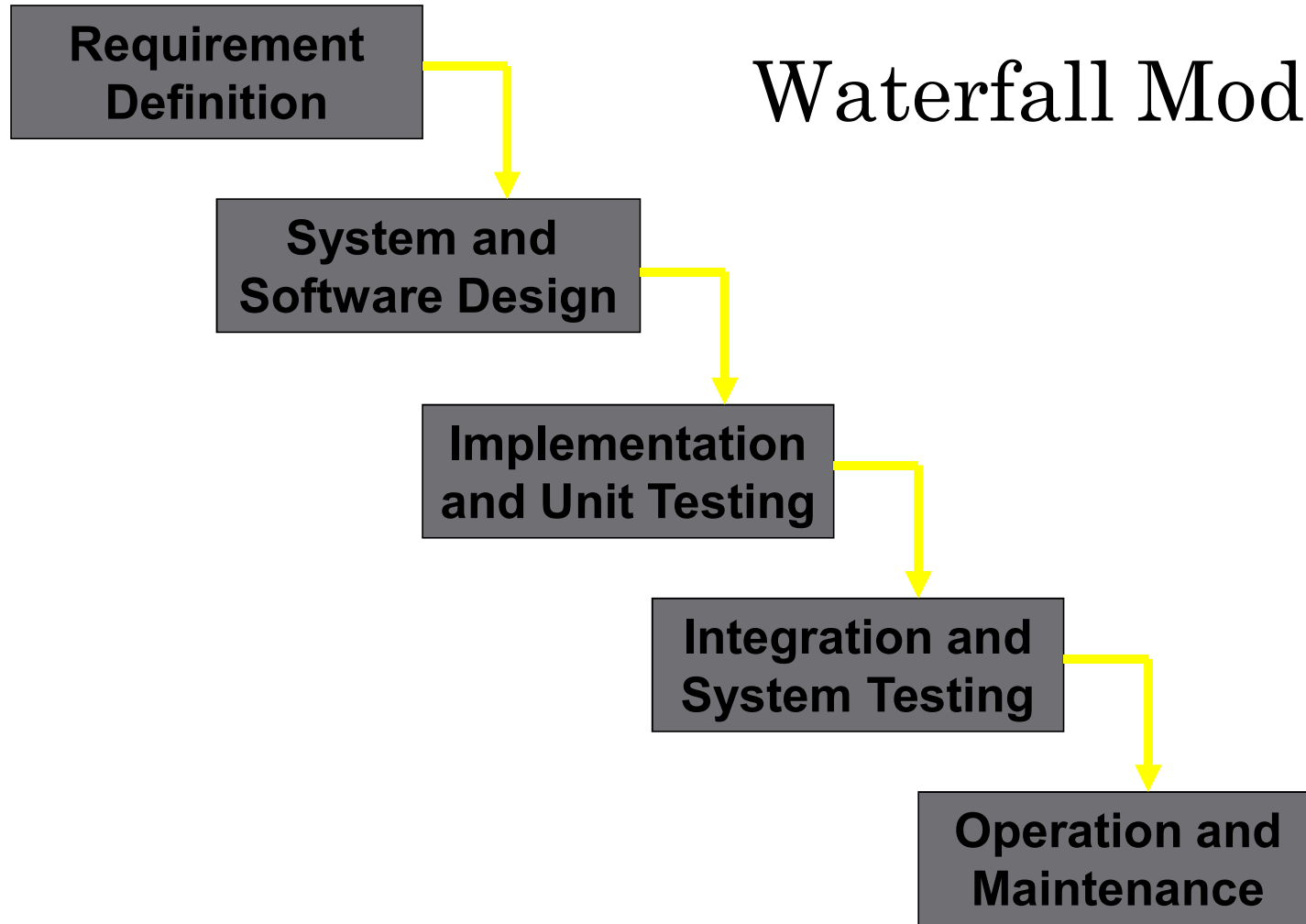


(d) parallel process flow

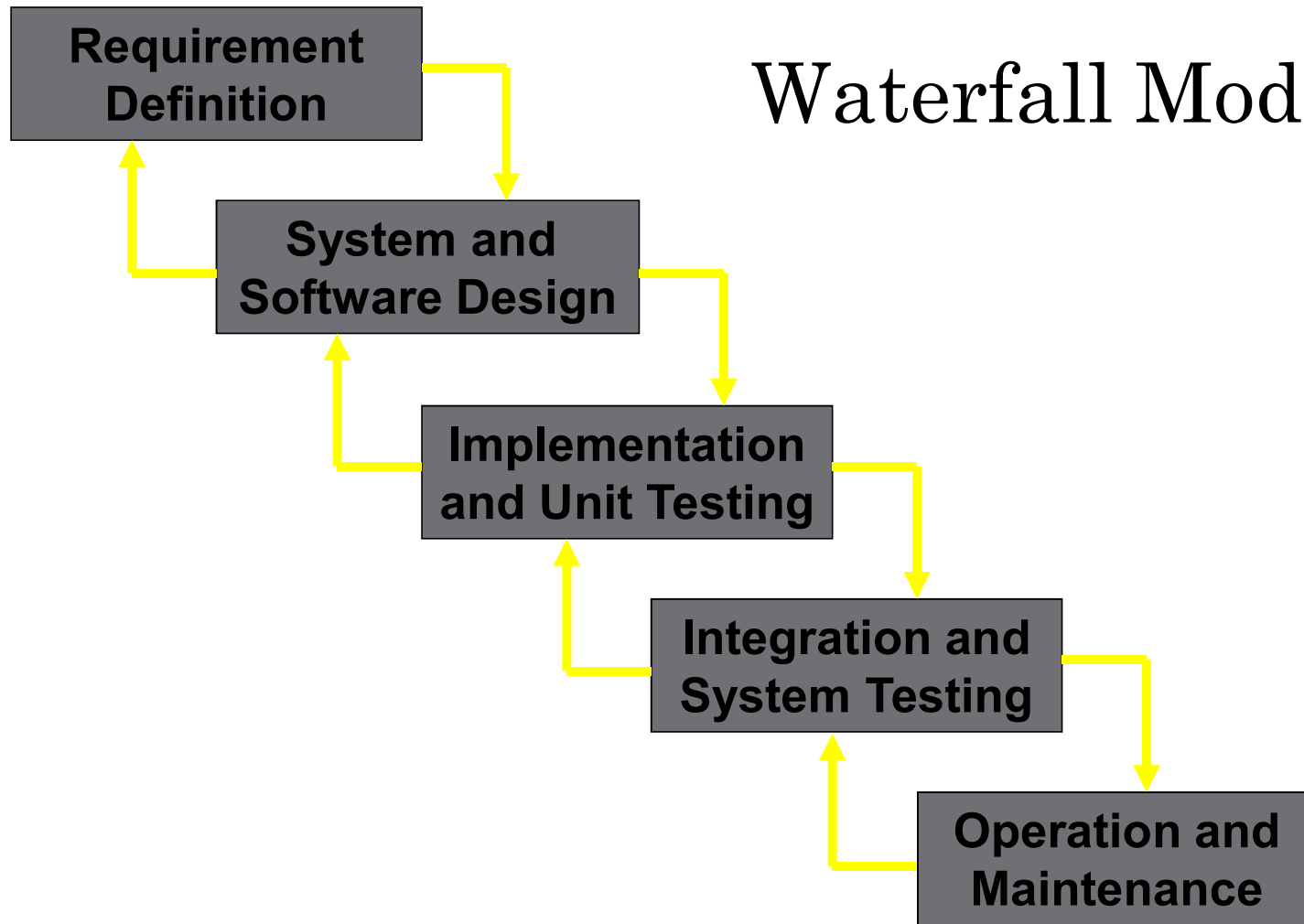
Phases of Software Process Model

- Requirements phase
- Specification phase
- Design phase
- Implementation phase
- Integration phase
- Maintenance phase
- Retirement

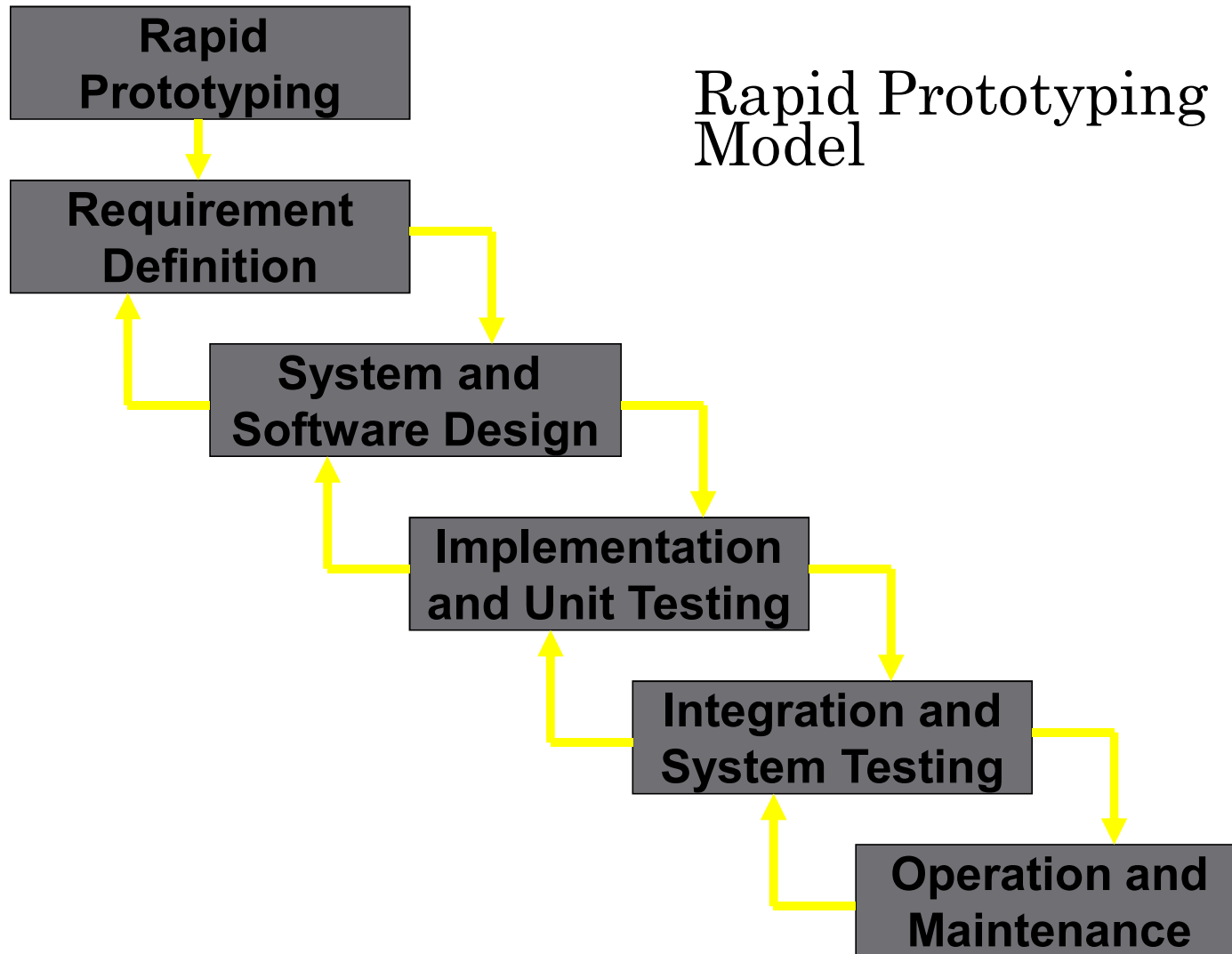
Waterfall Model



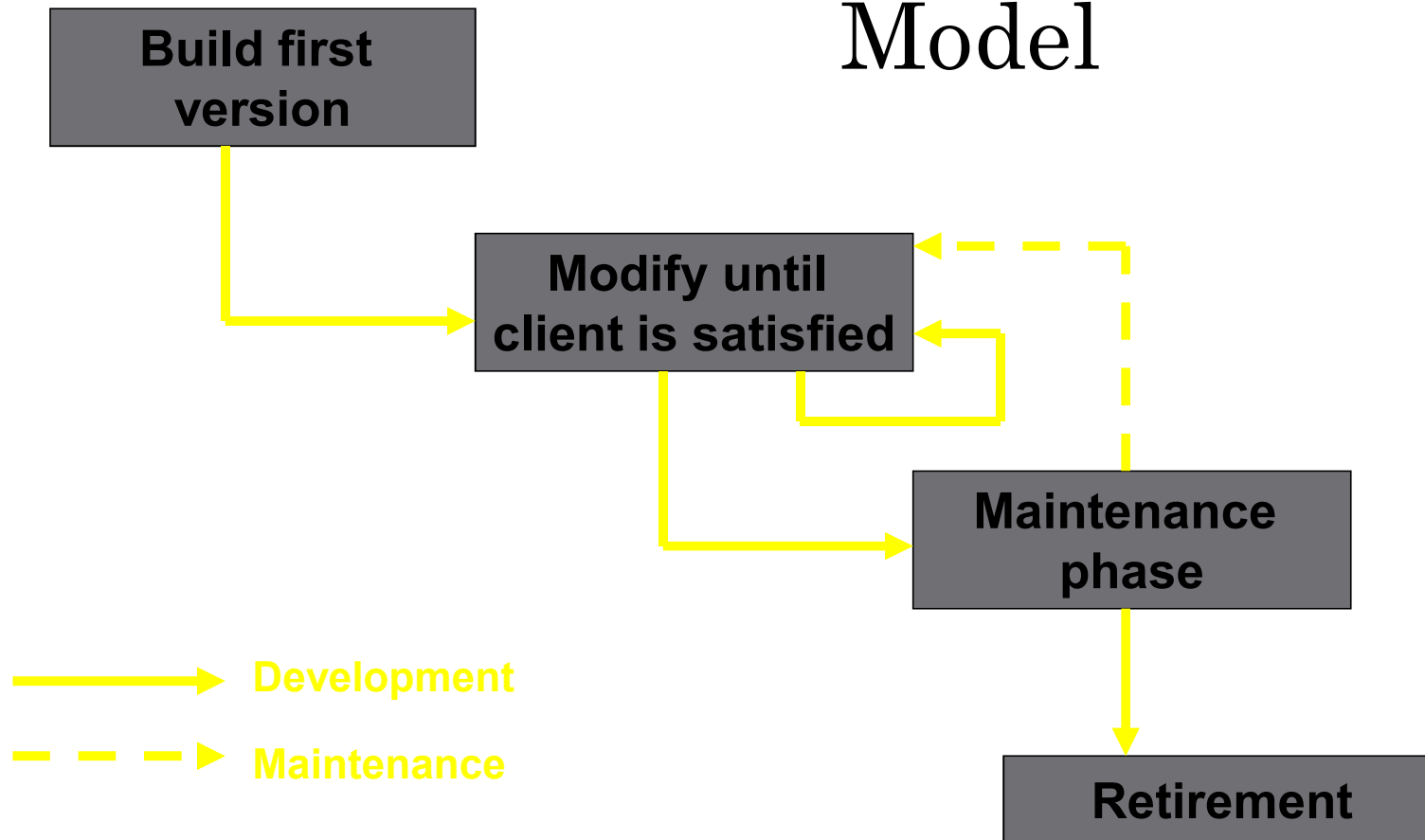
Waterfall Model



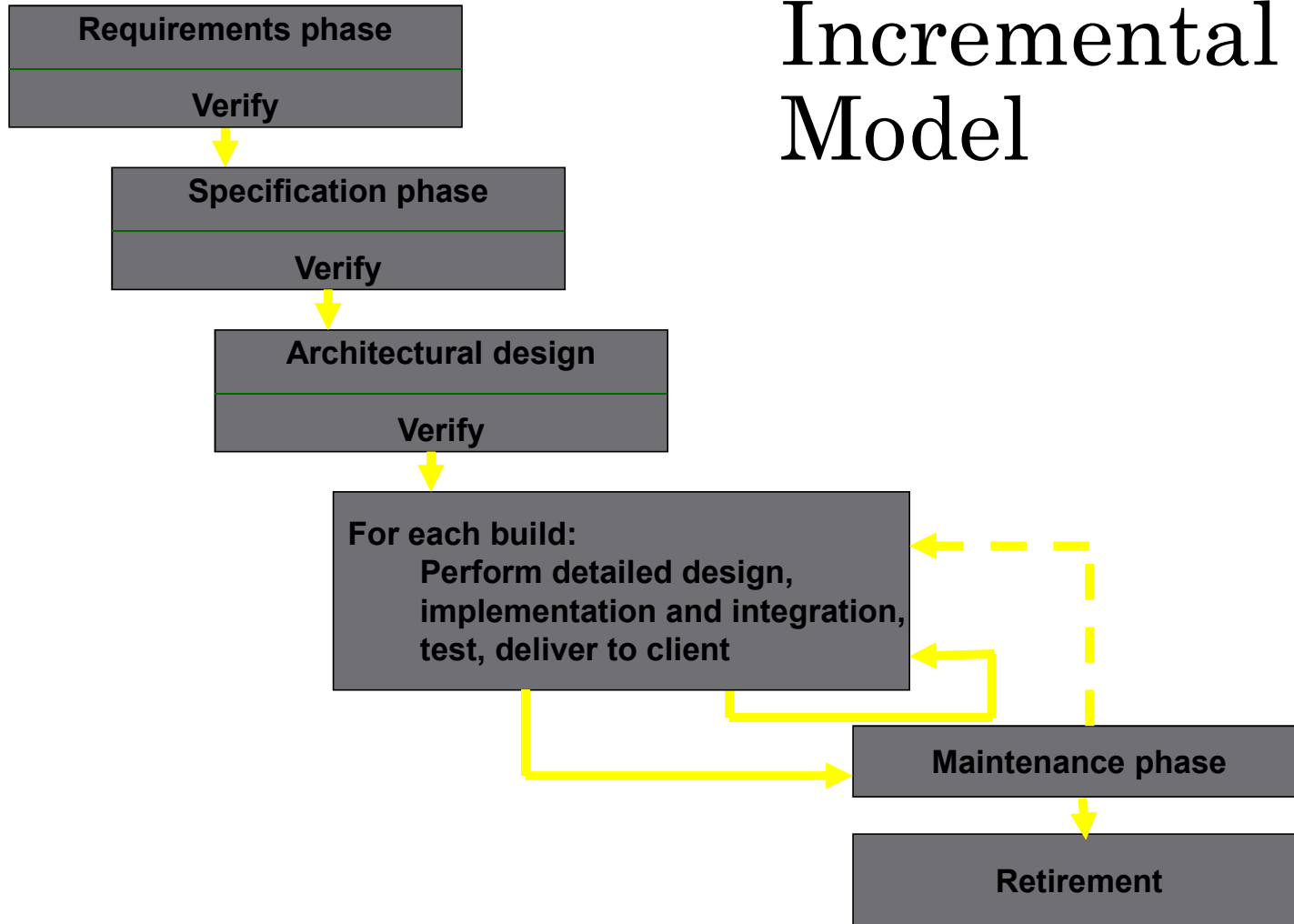
Rapid Prototyping Model



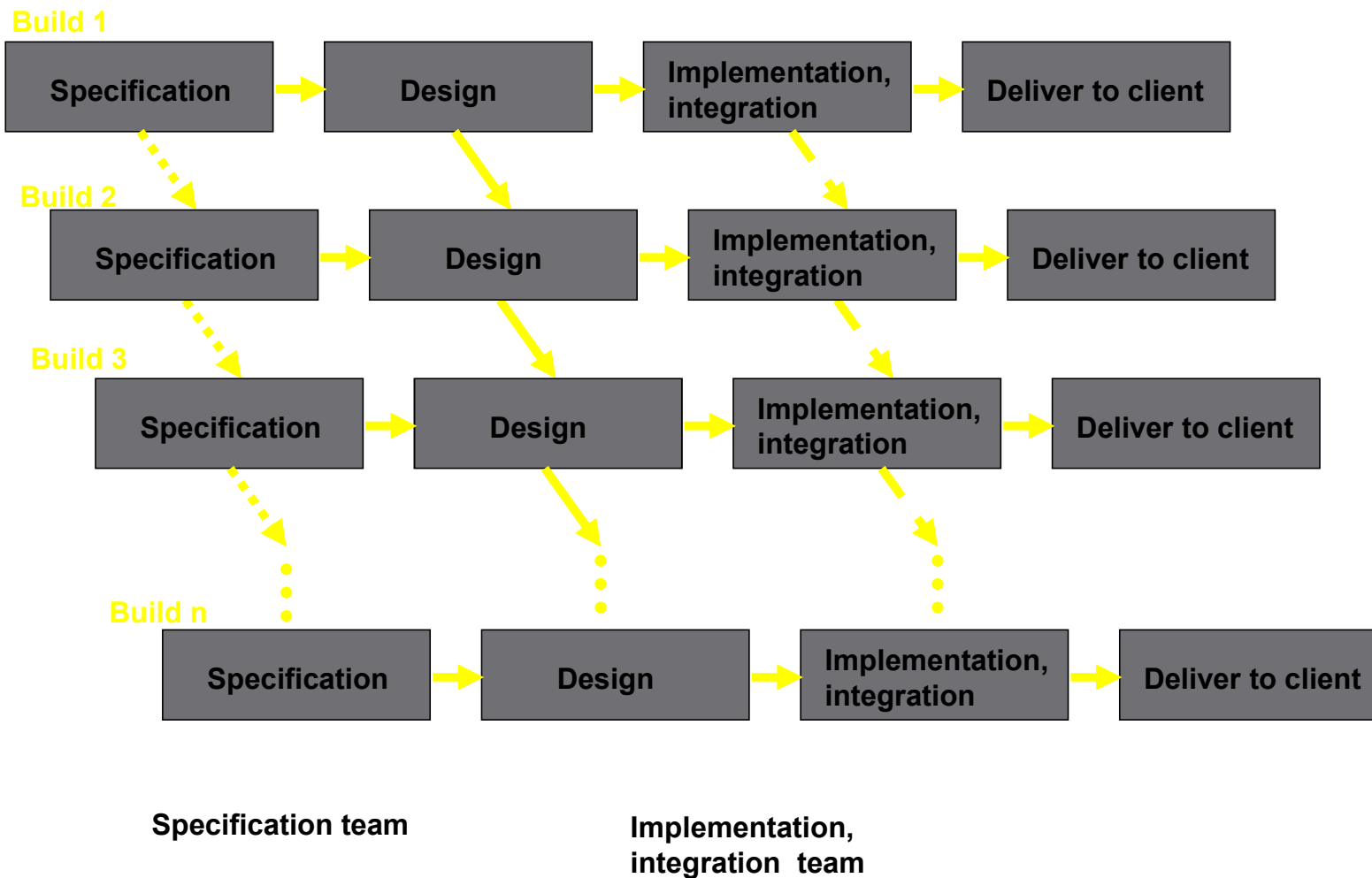
Build and Fix Model



Incremental Model

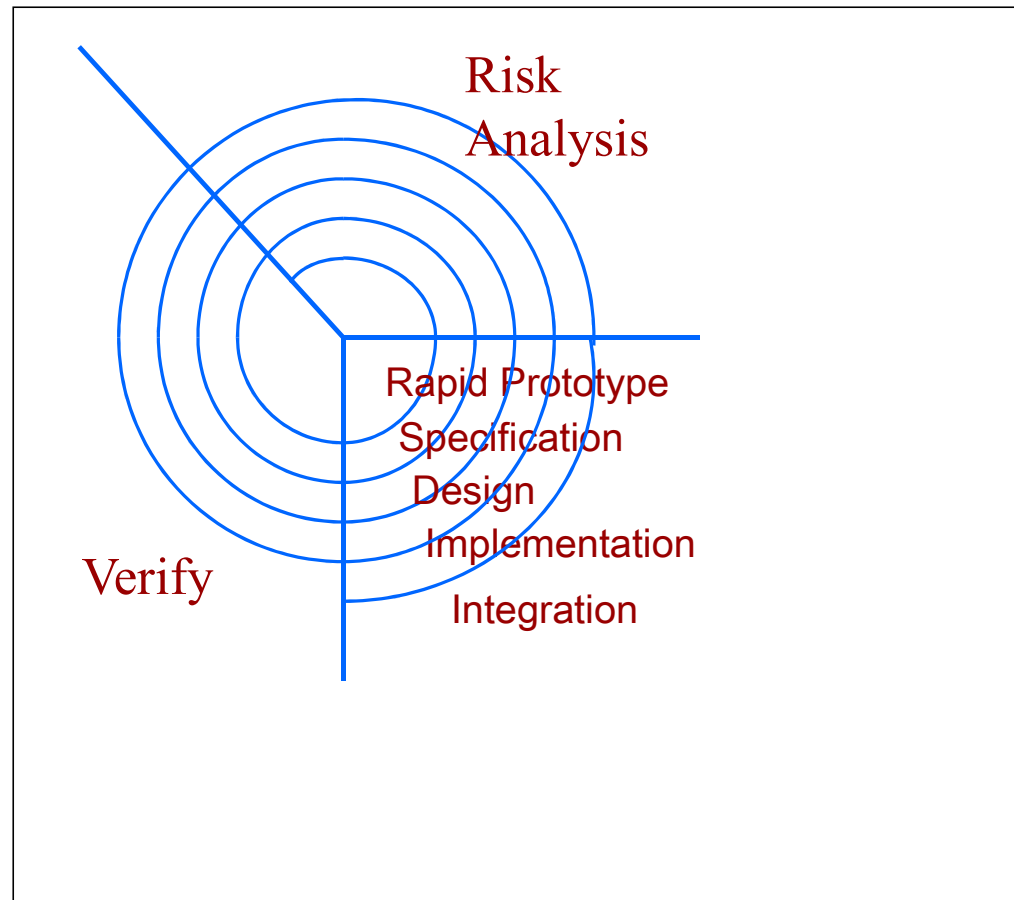


Incremental Model (cont.)

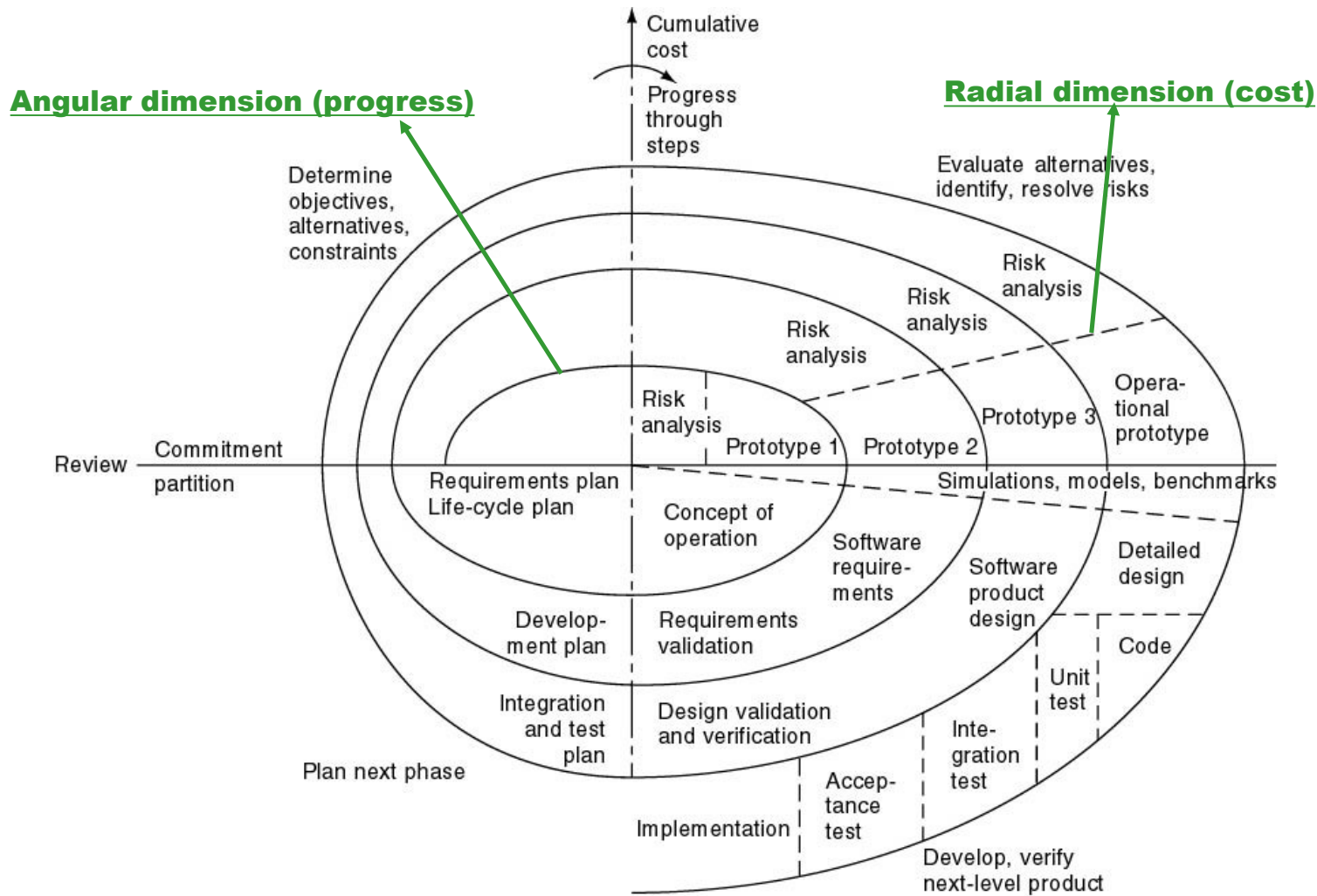


Simplified Spiral Model

- If risks cannot be resolved, project is immediately terminated



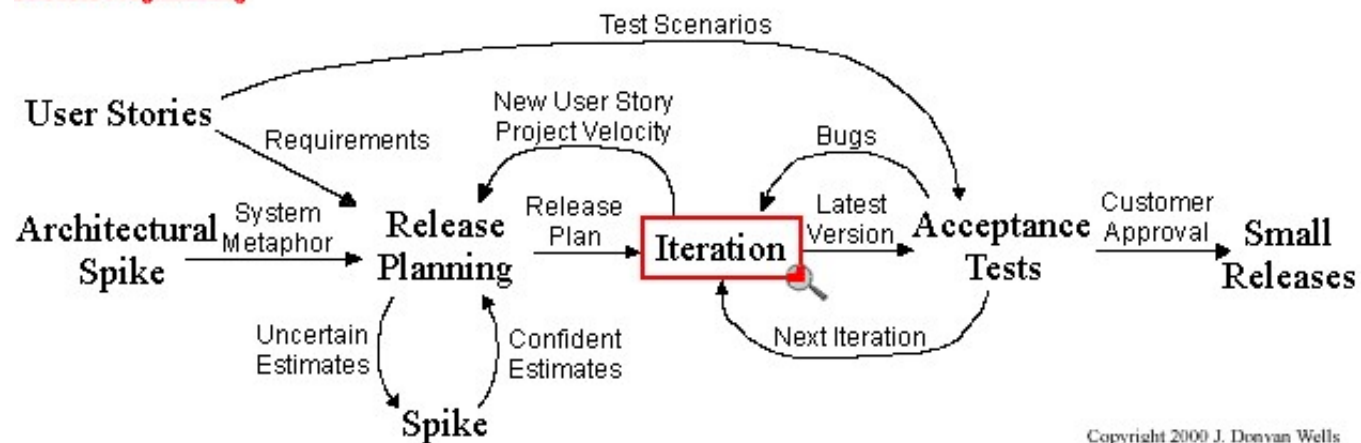
Full Spiral Model



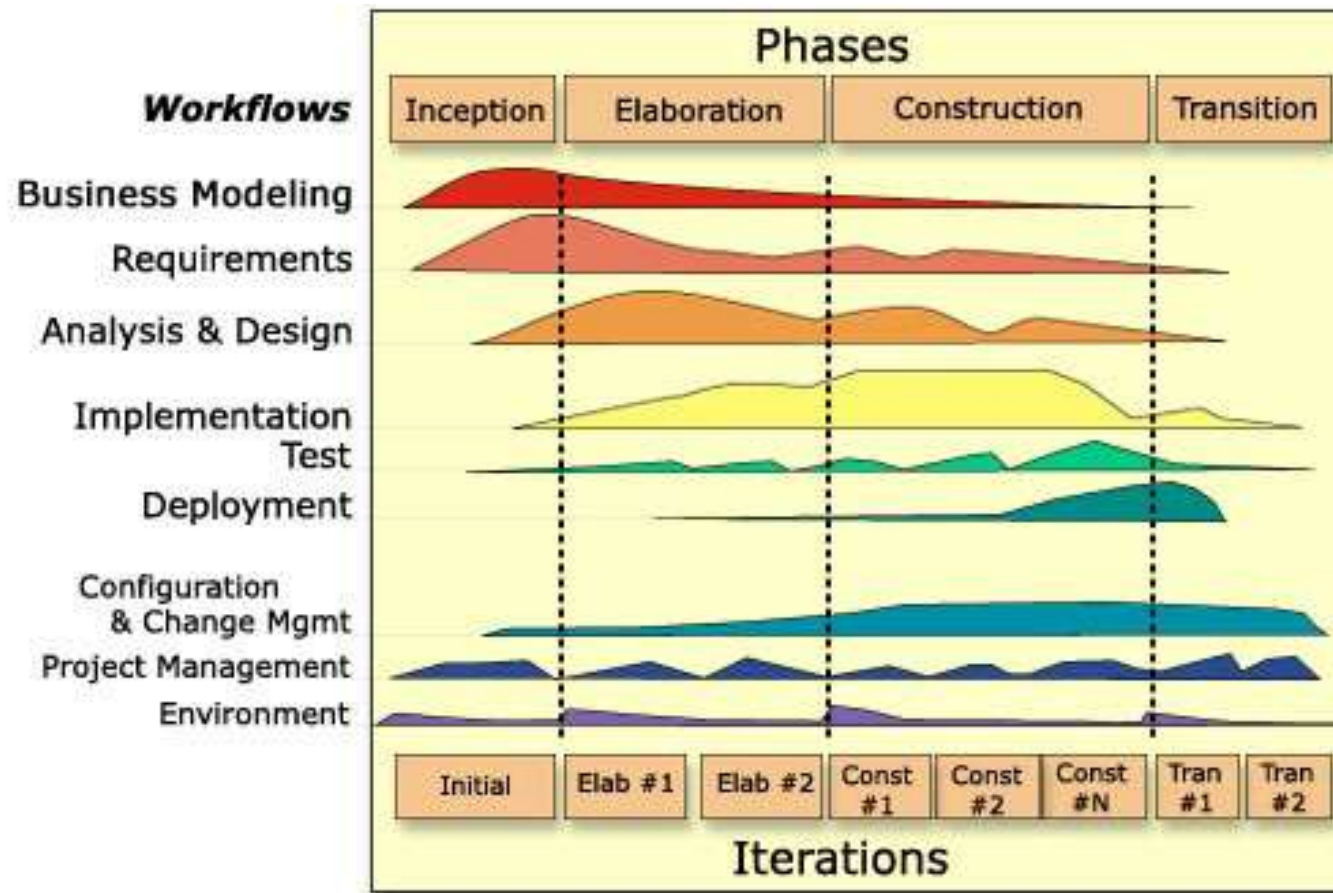
Extreme Programming



Extreme Programming Project



Rational Unified Process



(this Figure is from P Krutchen's paper)

Documentation Phase?

- There is NO documentation phase
- Every phase must be fully documented before starting the next phase
 - Postponed documentation may never be completed
 - The responsible individual may leave
 - The product is constantly changing—we need the documentation to do this
 - The design (for example) will be modified during development, but the original designers may not be available to document it

Requirement Definition	<ul style="list-style-type: none"> • Rapid prototype, or • Requirements document 	<ul style="list-style-type: none"> • Rapid prototype • Reviews
Functional Specification	<ul style="list-style-type: none"> • Specification document (specifications) • Software Product Management Plan 	<ul style="list-style-type: none"> • Traceability • FS Review
Design	<ul style="list-style-type: none"> • Architectural Design • Detailed Design 	<ul style="list-style-type: none"> • Traceability • Review
Coding	<ul style="list-style-type: none"> • Source code • Test cases 	<ul style="list-style-type: none"> • Traceability • Review • Testing
Integration	<ul style="list-style-type: none"> • Source code • Test cases 	<ul style="list-style-type: none"> • Integration testing • Acceptance testing
Maintenance	<ul style="list-style-type: none"> • Change record • Regression test cases 	<ul style="list-style-type: none"> • Regression testing

Traceability matrix

Requirement ID	Use Case ID	UID	Class/ function	Test Case ID