

CSE 333 – Software Engineering

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Lecture 03

Outline

- Software process models
- Software process activities
- Coping with change
- The Rational Unified process

Incremental Development Model

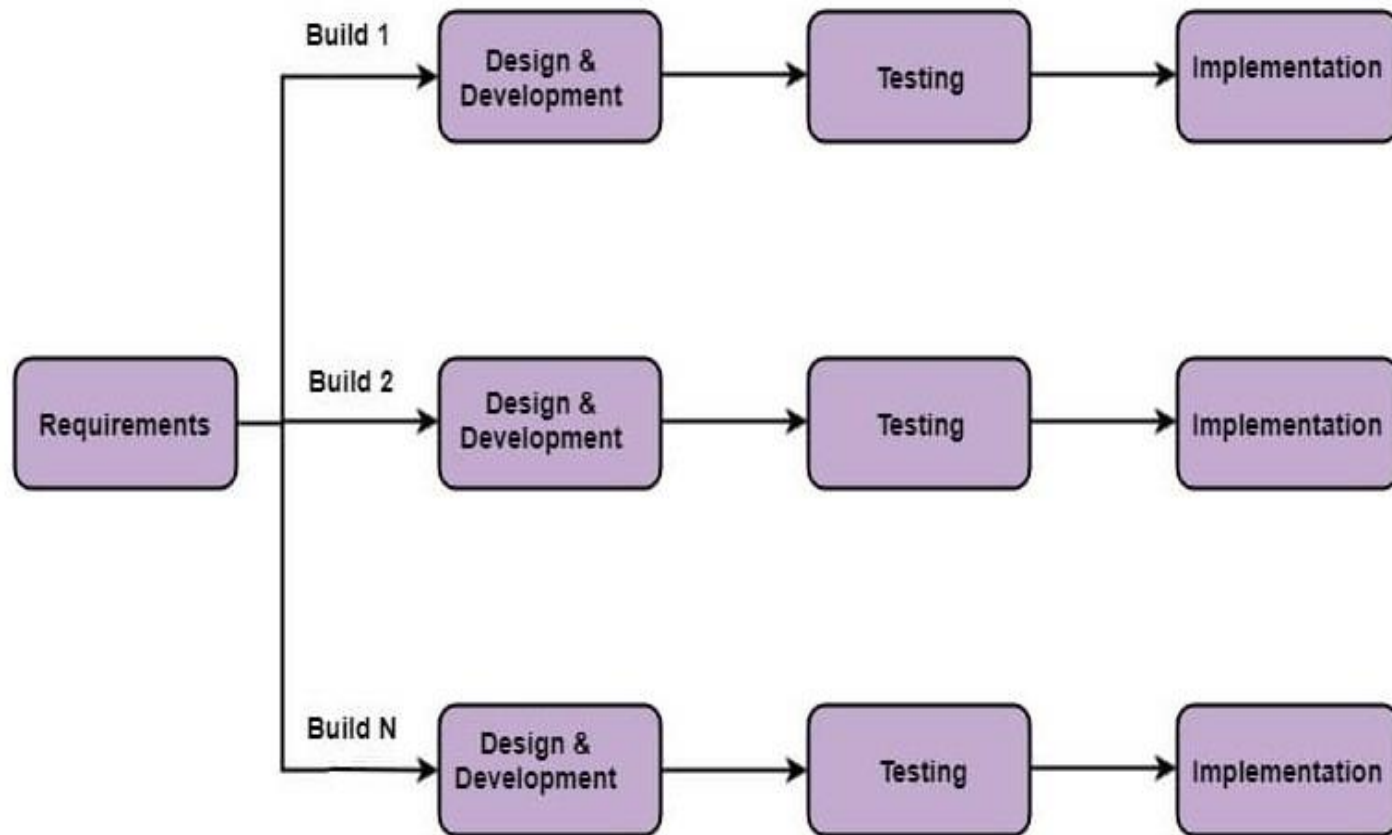
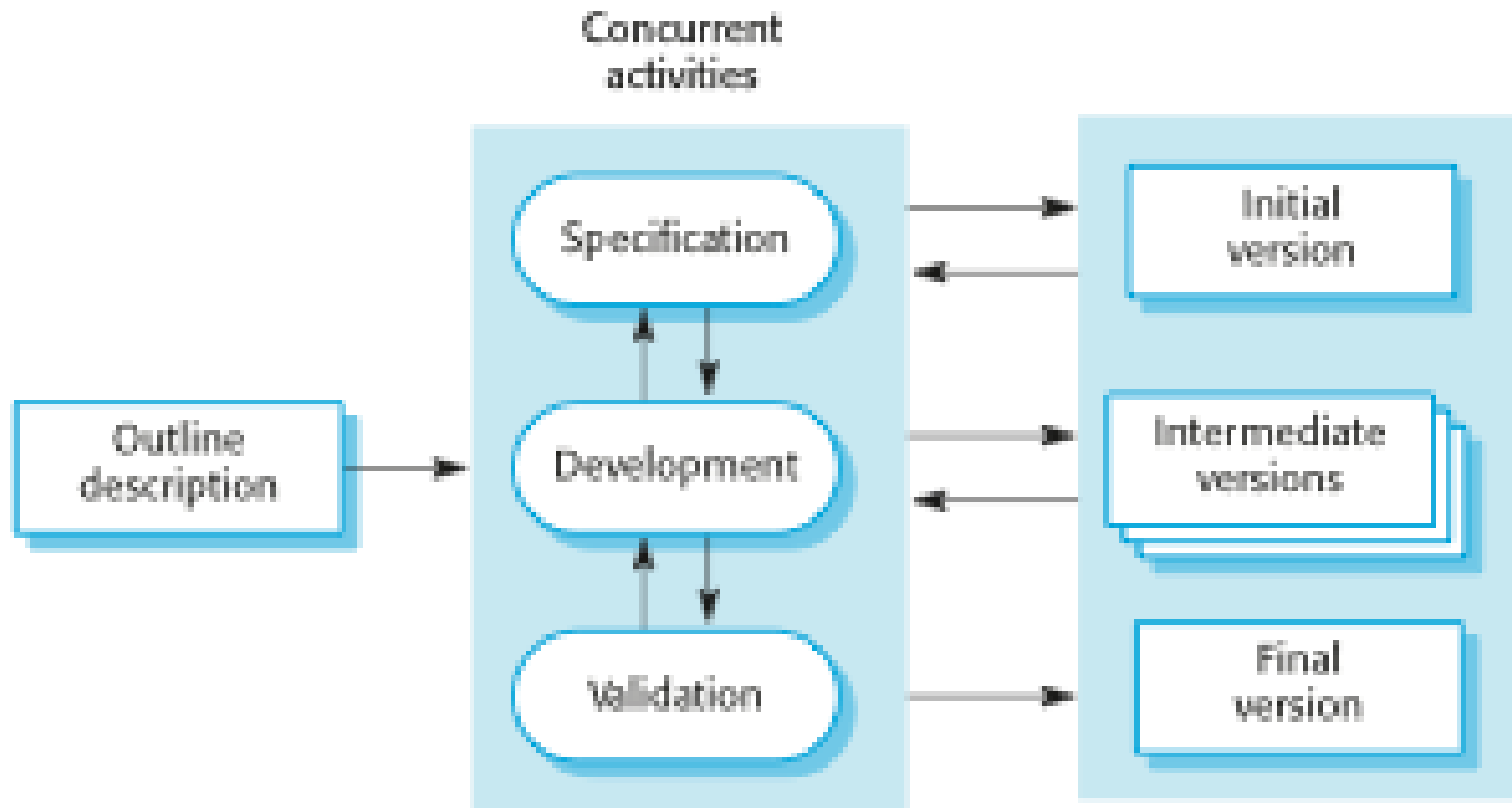


Fig: Incremental Model

The phases of Incremental development model

- Requirement analysis
 - The *product analysis expertise* identifies the requirements. And the system functional requirements are understood by the *requirement analysis team*. To develop the software under the incremental model, this phase performs a crucial role.
- Design and developments
 - The design of the system functionality and the development method are finished with success.
- Testing
 - The testing phase checks the *performance* of each existing function as well as additional functionality. The various methods are used to test the behavior of each task.
- Implementation
 - Enable the coding phase of the development system. After completion the phase, the number of product working enhance and upgraded up to the final system product.

Incremental Development Model



Incremental development benefits

- The cost of accommodating changing customer requirements is reduced.
 - The amount of analysis and **documentation** that **has to be redone is much less** than is required with the waterfall model.
- It is easier to get customer feedback on the development work that has been done.
 - Customers can comment on demonstrations of the software and see how much has been implemented.
- More rapid delivery and deployment of useful software to the customer is possible.
 - Customers are able to use and gain value from the software earlier than is possible with a waterfall process.

Incremental development problems

- The process is **not visible**.
 - Managers need regular deliverables to measure progress. **If systems are developed quickly, it is not cost-effective** to produce documents that reflect every version of the system.
- System **structure tends to degrade** as new increments are added.
 - Unless time and money is spent on refactoring to improve the software, regular change tends to corrupt its structure. Incorporating further software changes becomes increasingly difficult and costly.

When to use Incremental Development Process model

- **Requirements** of the system are **clearly understood**.
- A project has a **lengthy development schedule**.
- When the **software engineering team** are not **very well skilled or trained**.
- When the customer **demands a quick release of the product**.
- You can develop a **prioritized requirement first**.