The Unified Software Development Process

„A software development process is the set of activities needed to transform a user’s requirements into a software system.“


Basic properties:

• use case driven
• architecture centric
• iterative and incremental

Use case driven

Use cases

• capture requirements of the user,
• divide the development project into smaller subprojects,
• are constantly refined during the whole development process
• are used to verify the correctness of the implemented software
Architecture-centric

- Find structures which are
  - suitable to achieve the function specified in the use cases,
  - understandable,
  - maintainable,
  - reusable for later extensions or newly discovered use cases.
- ... and describe them, so that they can be communicated between developers and users.

The Unified Software Development Process

- Inception establishes the business rationale for the project and decides on the scope of the project.

- Elaboration is the phase where you collect more detailed requirements, do high-level analysis and design to establish a baseline architecture and create the plan for construction.

- Construction is an iterative and incremental process. Each iteration in this phase builds production-quality software prototypes, tested and integrated as subset of the requirements of the project.

- Transition contains beta testing, performance tuning and user training.
Construction builds the system in a series of iterations. Each iteration is a project in itself.

During each iteration you go through a cycle of analyzing, designing, coding, debugging, integration and demonstration of the implemented use case by a prototype.
UML Diagrams

Summary

UML Diagrams

- **Use Case Diagrams**
  - Workflows
  - Scenarios

- **Class Diagrams**
  - Structures
  - Interaction with objects of classes

- **Interaction Diagrams**
  - Interaction sequences between objects of classes

- **Activity Diagrams**
  - Scenarios
  - Workflows

- **Use Case Diagrams**
  - Workflows
  - Scenarios

- **State Diagrams**
  - Intra-class behavior
  - Capture all possible state changes for objects of a single class

- **Package Diagrams**
  - Structuring is done by

Unified Process

Summary