

Software Engineering - Lecture 15

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Introduction to extreme programming

The best known agile method is extreme programming. The characteristics of this process are:

- **Cyclic process** - each cycle takes 2 weeks approx.
- Planning and iterations are based on **user stories**
- **User stories** form the basis for system requirements.
- **Whole-team**: all contributors to an XP project are considered as one team
- **Small releases**: the team releases working software at each iteration. Each release adds functionality on top of the previous release.
- **Customer tests**: the customer defines one or more automated acceptance tests for a feature.
- **Simple design**
- **Refactoring**: see separate lecture
- **Pair programming**: cooperation leads to better understanding. Better initial approaches and less back-tracking.
- **TDD**: XP is an incremental development approach, we do not have the detailed requirements and specifications that we would expect to have in a plan-driven approach

Planning

There are 2 types of planning in software development:

- **Release plan**: predict what will be accomplished by the due date
- **Iteration plan**: determine what tasks to accomplish next

Iteration planning works as follows:

- Choose user stories for the current cycle and **failed acceptance tests** from the previous one
- Break them into tasks
- Tasks are written on cards by developers
- Developers implement each task separately
- Test and integrate software
- Release software
- Acceptance testing

During the process of planning a task CRCs (Class Responsibility Collaborator) are used to determine how a class should be developed.

Why refactoring in XP?

Refactoring is extremely important in XP because there are continuous changes to the code base: this may lead to badly written code. Therefore a solution is to refactor the code to make it cleaner, readable and maintainable.