Implementation of Game Mechanics in Software Development Process Teaching

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Abstract

In teaching software development, the biggest problem is to integrate methodology and theory into the practice of software development. Due to the number of software development models used today this problem became even more complicated.

The goal of the project described in the article is to implement a new pedagogical approach to teaching software engineering, based on understanding not concrete software development models, but software development process in general. Instead of learning methodologies and models as abstract ideas, students are directly involved in their own real software development teams. They are allowed both to create their own frameworks and to make existent models' settings.

Within a team collaboration platform, students perform their own projects using real or close to real software development tools, methods and practices, getting experience in different aspects of software development process.

The team collaboration platforms works in two modes: classical (a standard software development model) or "economical" (close to the game "Monopoly").

Every student can create or choose a software development project. Every project is defined by: interactions inside a team or methodology, control methods, planning methods and identification of project roles. Within the project a student can define his own role or be appointed to an appropriate role by a project manager.

Every student, team or project gets badges (in classical mode) or "money" (in "economical") for activities inside the project or within the whole game.

Every student, team or project can be involved in different scenarios, like: CVS fail, requirements change, urgent task from a client, commercial failure etc. Some scenarios are pre-installed in the system, although a tutor can create his own scenarios which can be executed in manual or automatic mode.

The team collaboration platform allows a student to be involved in a close to real software development process with modeling of any real situation, to try himself or herself in different roles, to choose the most appropriate software development model (hierarchy, relationships within a team), to understand software development processes better.