

The Project Game

Software Engineering I

Initial

Documentation

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1. Project specification

The project will be based on the official subject specification available under: https://bitbucket.org/filipiakk/io2_specyfikacja/src. Concerns arising from the specification content are posted in the 'Issues' section of the repository.

2. Software development methodology

2.1 Overview

As in the previous term, the team works with Scrum methodology with some adaptations. The team managed well to meet and deliver new functionalities on regular basis, and it got already used to this scheme of work.

2.1 Project meetings

The work is done in 1-week sprints, with team meeting at the end of each iteration. Additionally, task deadlines are set to a day before the meetings, so as each team member can review others code before the meetings. There are no daily regular meetings but urgent code issues are reported and discussed via Internet chats.

Weekly meetings focus on work finished, cooperation in the team and possible issues to be resolved. Next, a plan for the next sprint is formulated and discussed based on prepared MoSCoW lists, and the tasks are divided between team members.

This term, due to common laboratories, it will be more convenient to have team meetings on Thursdays and held them in person.

2.2 Tasks planning, assignment and progress tracking

Tasks are prioritized according to MoSCoW technique. Firstly, there is a general MoSCoW list that contains all functionalities that need or might be covered over the whole term. This list rarely changes and plays the role of a product backlog. Based on that, more detailed MoSCoW documents are prepared for a couple of next sprints, one MoSCoW list per each iteration. They are updated at the end of each sprint to reflect actual team progress.

Additionally, each short-term MoSCoW comes in two versions: a clean official list, and a team document that contains also task breakout between team members, notes on current task status, comments on possible bugs, proposals of new tasks etc.

To speed up decision-making process, usually the team leader prepares initial MoSCoW lists for the following time periods, and they are then discussed and finalised at each team meeting. Time calculations are based on possible amount of code to be added, past time lags and knowledge and experience of team members.

Once the tasks for given iteration are determined, they are voluntarily chosen by team members, starting from most prioritized tasks ('MUST' and 'SHOULD'). Usually, there is one MoSCoW task per each person per one week. One can volunteer for more tasks only after finishing their first assignment.

MoSCoW lists for this term as well as for first 3 iterations are provided in a separate document.

2.3 Code testing

To achieve high test coverage and code simplicity, Test-Driven Development methods may be used. This is, however, to be decided individually by each team member. Nevertheless, a task assigned to a team member will not be regarded as completed until appropriate unit and integration tests, and XML documentation comments are added. This requirement will ensure that new functionalities work well before moving onto next tasks.

2.4 Code review

Every team member works on their own branch and creates a separate subbranch for each task. New code is always signalled by a pull request and needs to be checked by other team member(s) before merging with stable branch. The changes are primarily discussed with the person(s) that previously managed given part of the program. The tests need to be reviewed as well, and new test cases may be proposed. Any major code changes are proposed and discussed before implementation, so then code review focuses on program proper working, test coverage, detecting possible edge cases, as well as code readability and simplicity.

3. Software technology

The project is developed in .NET Framework 4.7 in C#. Graphical user interface is based on Window Forms. The game runs under Windows operating system, as requested by the official specification.