Object-Oriented-Programming 2

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Project FS 2019

1   Project Description

The goal of this project is to implement a simple multi-player game in Java. The game is developed in groups of two students (except in case of an odd number of students, in which there will be a single group of one student). You can register your groups in Moodle. There are two deliverables:

Java Source Code

- **Deadline: Wednesday 12.06.2019 (midnight)**

- GitLab (BFH-TI) repository with compilable and executable code

- application runs properly, game rules one-to-one implemented

- coding conventions (class/variable/method names, private/protected/public, etc.)

- clean code (no unused variables, no warnings, proper use of data structures, etc.)

- JUnit Tests

- JavaDoc

Presentation

- **Friday 14.06.2019 (mandatory for everyone)**

- 15-20 minutes

- short demo

- overview of implementation (e.g. UML class diagram)

- interesting code snippets (e.g. observer pattern)

- extra features

- Q&A

2 Evaluation and Grading

The weight of the project is **25% of your final grade**. Each member of a group receives up to 5 points for the presentation, up to 15 points if all minimal features are implemented properly, and up to 5 points for extra features (max. 25 points). A single-student group receives up to 20 points for implementing all minimal features (no extra features required).

Minimal Requirements

- game rules properly implemented

- single-player game: 1 human player

- multi-player game: n human players

- multi-player game: $n \geqslant 1$ human and $m \geqslant 0$ computer players

- computer players with different strategies (random/greedy/protective/...)

- JavaFx user interface: visualisation of game cards, dices, scores, buttons, menu, etc.

- separation of user interface and application logic (MVC, observer pattern)

- save/restore game state

Additional Features

- simulation: $m \geqslant 1$ computer players (0 human players)

- animations

- game statistics (XML or json)

- graphical statistics

3 Game Description

Fiese15 is a multi-player dice game. In the instructions, there are additional variants on how to play. In this project, we will only consider the traditional rules. The game rules are explained in the rule document on Moodle (in German, French, Italian) and in the presentation video (Link in Moodle).

The game consists of 6 dices in different colors and a set of cards with different combinations of 6 dices always summing up to 15. The goal is to get as close as possible to the combination on the card, but not exceeding the values on the card.

The dices and the cards are visible to everyone, all players have exactly the same state of information at all times. Therefore, there is no hidden information and multiple players can play on a single computer.

The game is affected by player's decisions. At some point in his turn, the player might need to decide whether to stop or to throw again the dices.

The official game rules define the number of players from 2–6. We relax this rule by allowing single-player games (i.e., someone playing against the current highscore).