Norwegian University of Science and Technology

Requirement and Architecture Phase Requirement document

TDT4240

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1. Introduction

For this project we are supposed to choose between making a multiplayer game for either Android, Iphone or XNA, or make a robot simulator.

The documentation phase is intended for planning of the chosen architecture design for the development of the game for this project.

1.1. Project description

Our project is a curling game project for Android. The game should follow official curling rules and will be a turn-based multiplayer game.

The game will have a simple menu screen with the options to choose between play, tutorial and settings. The game itself will utilize the touch function on android devices, where the end-user will be able to slide the curling stone with a given speed and manipulate the speed by touch. By swiping your finger near the stone, it will either decrease the friction for it to go longer or to spin it, depending where you touch. The minimap is also used to give a better overall view of the game.

The tutorial will guide the player through the rules of curling and how the physics in the game works.

2. Requirements

2.1. Functional Requirements

ID	Case
FR1	Start a new multiplayer game.
FR2	Send the curlingstone down the lane.
FR3	Make the curlingstone curl.
FR4	Use the broom to decrease friction, or change the spin/curl of the stone.
FR5	The curlingstones that collide shall obey the laws of physics.
FR6	Have a minimap that shows the overview of the game.
FR7	Scores shall be updated according to curling rules.
FR8	The game shall follow the rules of curling.
FR9	The game shall be pausable.
FR10	The game shall have a startmenu.
FR11	The game shall have a "how to play" screen.
FR12	The winner of the game shall be the one with the highest score.

2.2. Quality Requirements

2.2.1. Modifiability

ID	M1
Source	End User
Stimulus	Wishes to change the number of rounds in the game
Environment	Runtime
Artifact	Configurations.
Response	The amount of rounds has been changed
Response Measure	Time, effort. Should be less than 5 seconds

ID	M2
Source	Developer
Stimulus	Reduce coupling
Environment	Design time
Artifact	Code
Response	Deploy modification
Response Measure	Time. Should be no more than 3 hours

2.2.2. Usability

ID	**A1**
Source	End user
Stimulus	Learn to play the game
Environment	Runtime
Artifact	System
Response	The game is intuitive
Response Measure	User satisfaction and feedback. Task time. In 10 min you should be familiar with the game and its functionalities

2.3. COTS Components and Technical Constraints

The only constraints are that we're only programming this game for android and limiting it to one mobile device platform. If we were to publish the game, we would also get some constraints from Google's distribution mechanics.

2.4. Changes

References

[1] Len Bass, Paul Clements, Rick Kazman. *Software Architecture in Practice*– Addison-Wesley. 3rd edition, 2012