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Bitter Birds Project Documentation

1. Overview

Bitter Birds is an "Angry Birds"-type 2D side scroller where the goal is to destroy all of the enemies by launching birds from the large slingshot.

Features
- Graphics and camera follows flying birds
- Different kinds of birds with special abilities
- Controlling game using mouse input
- Multiple levels loaded from files
- UI to display relevant gameplay information (score, throwables left)
- Scoring system
- Leaderboard
- Level editor
- Audio effects
- Physics simulation
- Visual effects for destruction
- Enhance scoring and feedback

2. Software structure

The program consists of different scenes that the GUI class renders. The game levels are read from simple text files containing positions, rotations and other necessary information for entities in each level. The game is built using SFML 2.5.1 and Box2D. Tools used include CMake, Make and C++ compiler (GCC)
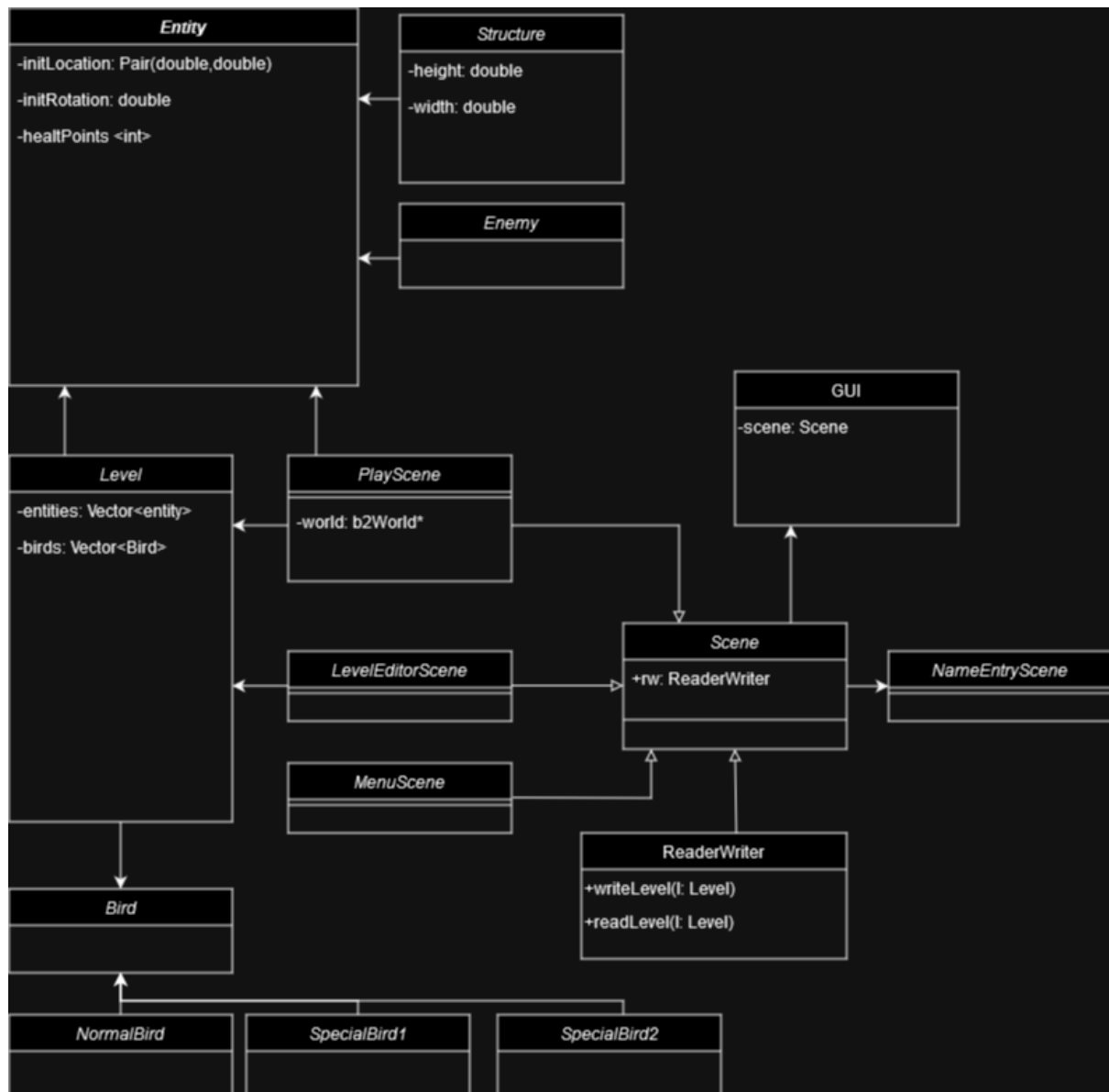
3. Instructions for building and running

How to build the software:

Use wsl or a linux machine for building and playing the game.

1. **Install cmake (if not installed)**
sudo apt-get install cmake

2. **Install make (if not installed)**
sudo apt-get install make

3. **Install libraries (if not installed)**
sudo apt-get install libsfml-dev

4. Generate makefile with cmake

cmake **.**

5. Build project using make

make AngryBirds

6. Run executable

./AngryBirds

How to use the software:

After running the executable you will be greeted by a request to enter your name. After clicking "OK", a menu screen will be shown. This menu allows you to start playing the game, edit and make your own levels, or exit the game.

Playing:
The game is played by clicking and dragging on the slingshot on the left side of your screen. This will shoot a bird in the opposite direction of your drag. The objective of the game is to destroy all the enemies present in the level with as few of your birds as possible. Some birds (Yellow and Blue) have special abilities, which can be activated after launching by right-clicking. Yellow bird gains a speed boost and Blue bird explodes. Keep in mind that you cannot activate a special ability of a bird if you have already launched another bird, i.e. only the ability of the most recently launched bird can be activated.

Indicators in the top left corner will display the number of birds you have left, and which bird you will be launching next. In the top right corner of your screen you can see your score. This score can be increased by destroying enemies and structures. The more birds you use, the less score you will get for destroying enemies and structures.

You can use the AD keys to move the camera when needed. You can exit into the main menu by pressing esc whenever you like.

Editing levels:
Pre-existing levels can be edited by selecting them from the level selector, or a new one can be created. Structures and enemies can be deleted by right-clicking them, new ones can be created by selecting the corresponding button from the top of your screen. Structures and enemies can be moved by left-clicking and dragging. The slingshot can not be moved, deleted and new ones can not be created.

The number of birds and the type of these birds can be altered using the "Make normal", "Make yellow", "Make blue", and "Reset Birds" buttons.

4. Testing

Exploratory testing

By playing the game and encountering bugs and other problems we managed to fix issues in the game.

Unit tests

We built support for creating and running unit tests for the project however in the end we did not end up using them much. Only two tests were created to test the reader writer.

5. Work log

	Luukas	Ray	Onni	Daniel
Week 1	10	5	10	7
Week 2	4	1	2	3
Week 3	5	3	2	3
Week 4	4	4	5	4
Week 5	7	2	0	3
Week 6	20	16	20	16
Week 7	15	22	10	15