«Green Ball» Game Engine documentation

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April 28, 2015

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Chapter 1

Introduction

The «Green Ball» Game Engine is written in C++ with use of OpenGL rendering API. I started it to pursue my dream about using my spatial imagination for programming and developing video games. It turned out to be very absorbing and I started separating game engine from the game itself, to make adding new features easier. With this project I learned a lot about abstract programming, development and design patterns.

1.1 License

The project is free software released under GPLv2 license.

1.2 Contributing

If you ever happen to use my code please don't be afraid to show your work. I will appreciate all patches, features and improvements.

Chapter 2

Development state

Currently you can move around and push boxes.

2.1 Goals

1. ~~general code cleanup DONE, the poject compiles~~
2. debug loading maps in Map class, currently causing segfaults. valgrind output:

```
==10121==    at 0x409184: void std::vector<game_obj*,
   std::allocator<game_obj*> >::emplace_back<game_obj*>(game_obj*&&)
   (vector.tcc:94)
==10121==    by 0x40882F: std::vector<game_obj*,
   std::allocator<game_obj*> >::push_back(game_obj*&&) (in
   /mnt/Horyzont Zdarzen/PROGRAMOWANIE/SDL i OpenGL/GreenBall/test)
==10121==    by 0x404E4E: Map::load_map(char const*) (Map.cpp:72)
==10121==    by 0x40476A: Map::Map() (Map.cpp:14)
==10121==    by 0x406625: main (game.cpp:472)
```

   New hint: It is probably caused by player not initialized properly due to not being global anymore.

3. rethink the map format and way to mark which Switch opens which Door
4. create Trigger - Responder system for opening doors
5. implement collecting Gems and display score properly

2.2 Known bugs

Chapter 3

Class diagrams

3.1 Basic structure of game objects

Legend:

Green classes are considered ready,

yellow partially done and

red ones lack their main features.