Toon Dimension

Game Prototype

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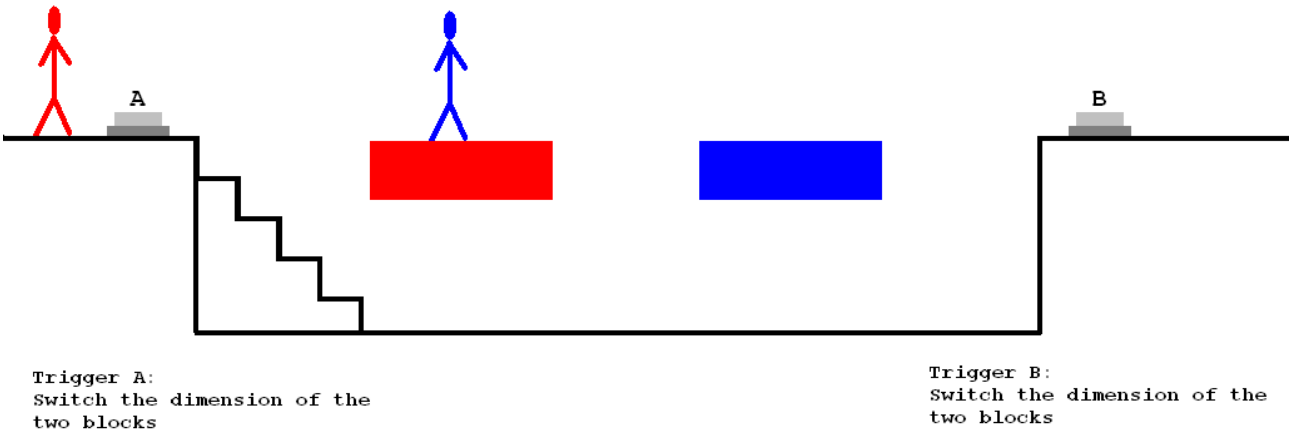
Table Of Contents

1. Prototype

1.1 Puzzle Ideas

1.1.1 Coordinated jump

Both players are in front of a pit. The only way to pass over it are two floating blocks. The problem is, that always one of the blocks do not match the players dimension and he would fall through it. The solution is, that the second player pushes the button which switches the dimensions of the blocks just in the moment when the first player jumps.
There is another button at the other end of the pit for repeating the whole procedure for the other player.



1.1.2 Dimension Lights-Out

The classical Lights-Out puzzle is extended to make two players solve it together. Both players can work on their field. But changes on one of them results in changes in the other. The goal is to make all tiles of the same color on both fields. (Fig 2.) If for example the center tile is activated on field one, the horizontal and vertical neighbours change as well. (Fig 1.) At the same time the center tile and the diagonal neighbours change (Fig 3.)

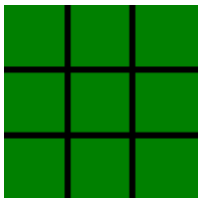


Figure 1.

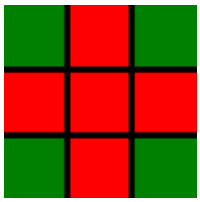


Figure 3.

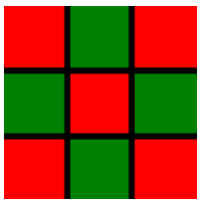


Figure 2.

1.1.3 Honouring Sokoban

Another classical puzzle is adapted to make use of the dimension setting. The goal is move boxes or objects placed on a flat surface to predestined positions. (Fig 4.) In the original setting the positioning of the boxes on the destination is mostly irrelevant. One could imagine that the

positions would be of interest, as the boxes belong to different dimensions. If for example one player is later required to use the boxes as path or platforms, while for the other there must be a path through the boxes.

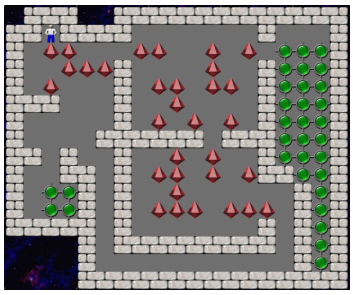


Figure 4: Original Sokoban, Foreign Artwork

1.2 A Level Example

Dr. Morbo installed portals throughout the whole toon world to travel fast from his laboratory to each location. He locked these doors through space behind puzzles to prevent our toon heroes from using the portals against him.
In the first level, our heroes found an entrance to a valley in which the first of a chain of such portals lie. To reach it, they have to solve the puzzle mentioned in section 1.1.1. After passing the obstacle, they are attacked by a couple of enemies before they can reach the first portal.
The first level is easy and thought to be a tutorial, making the player familiar with the dimension principle.

1.3 Screenshots

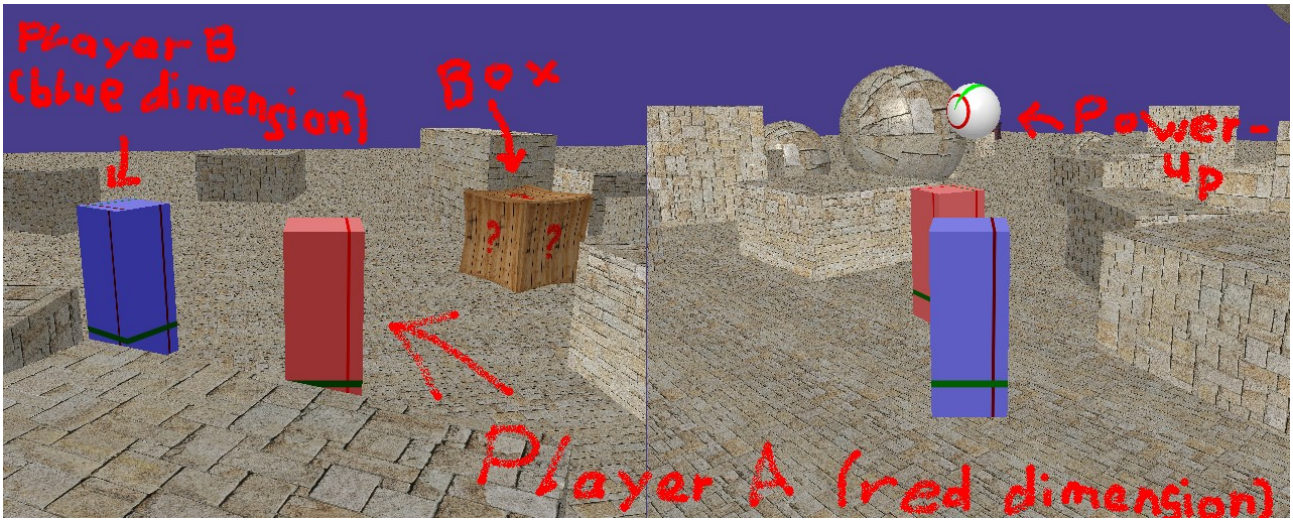


Figure 5: A simple scene showing two players and their environment.

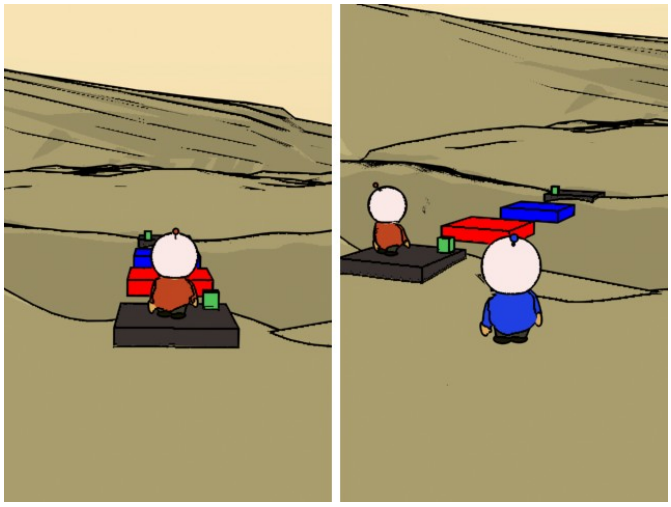


Figure 6: Split screen

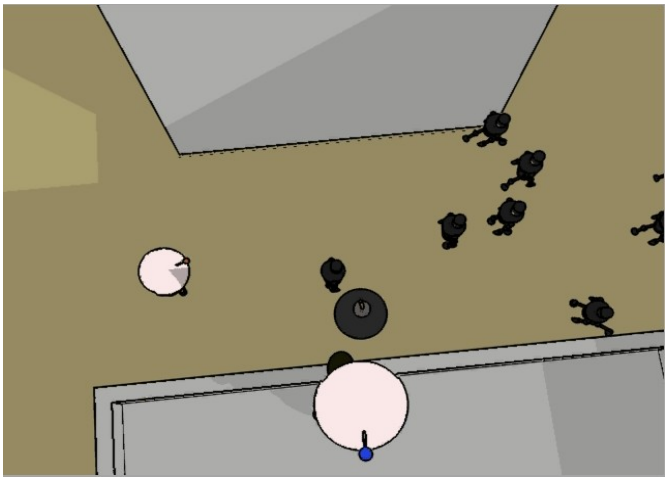


Figure 7: Throwing a bomb

Figure 8: The reality collides with each dimension, dimensions only with the reality and itself

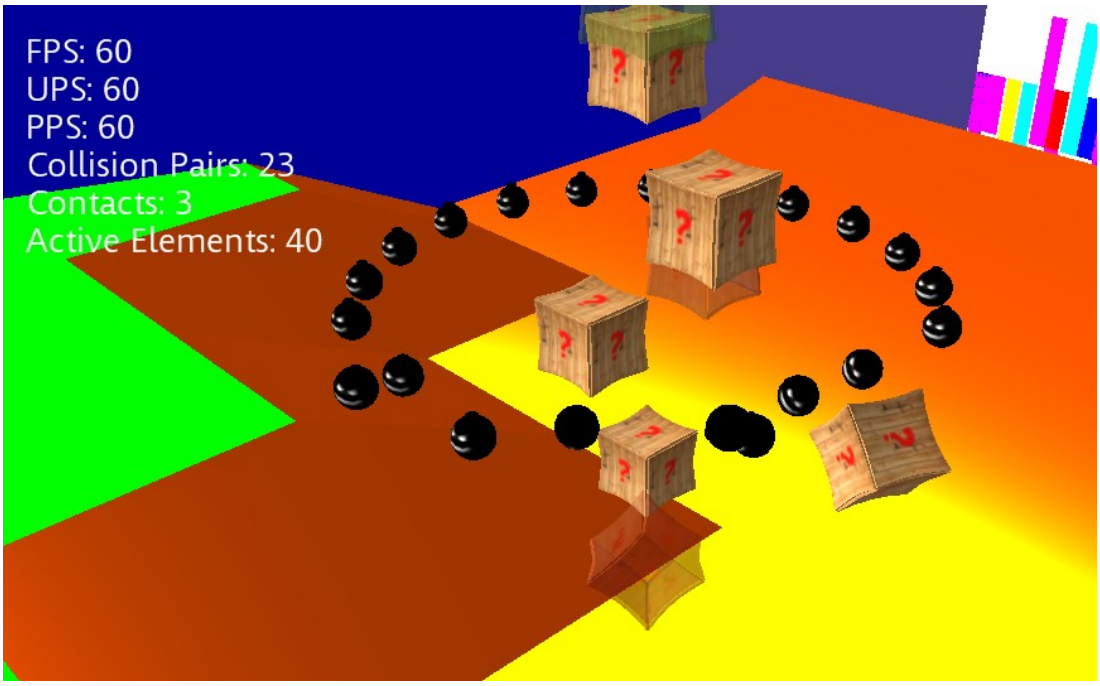


Figure 9: A bomb nova

2. Problems

2.1 Difficulty

One of the core problems that we encountered is to get a right level of difficulty for the puzzles. If the puzzles are hard to solve, the player can get annoyed if he does not expect to be challenged in such a way from the game like in the Myst series. But if the puzzles are too easy, the player get bored and sees them as a mere way to artificially stretch the time needed to complete the game. We therefore aim for an easy to medium difficulty trying to fulfil the expectations of the player he gets from the art style and remaining gameplay.

2.2 Long Term Fun

The attraction of riddles is to get a good solution of the problem. Once the solution is found, solving the same puzzle inevitably looses its fun. Our game will therefore attract people only as long as there are new puzzles. With the restricted amount of time to design puzzles and levels, the long term fun might become very small. A possible solution might be to implement an alternative game mode that extends them with more action oriented challenges.

2.3 Implementation Issues

The initial software design of using controllers with a visual and or physical representation did hold in the software prototype. However, there was much code redundancy in each controller. We therefore refined the controller class into different classes linked by inheritance. This standard pattern required an expensive refactoring of the whole code, but will pay off when implementing more controllers.

2.4 Map Editor

As the map editor is closely linked to the game, we made it part of the solution. We tried to separate both as much as possible to have a strict client-supplier relationship, but the map editor needs to acquire and alter information in a way the game doesn't need to. As a result we have to make a compromise and extend the game with some additional functionalities that are mainly required by the editor. The main goal of this close relationship is to allow the map designer to work in a manner of 'what you see is what you get' and so far looks very promising.

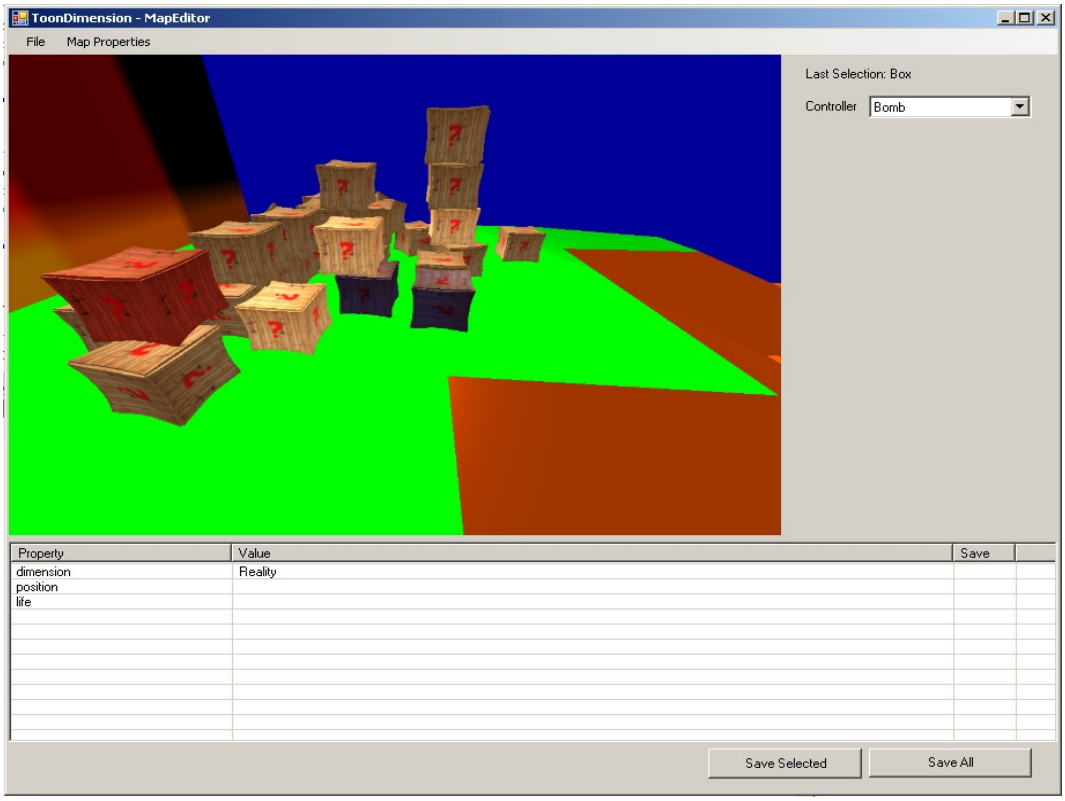


Figure 10: Screenshot of the map editor. Three boxes are selected. Some with changed dimension.

3. Schedule

The term (x/y) stands for x hours expected, in y hours realized. Green entries are additional work which has been completed, red terms are partially or not at all complete.

Date	Course Items	Peter	Christian	Nicola
24.02.		- FGP (3/3) - Sketches(2/2) - Mock up Scene (5/7)	- FGP (-/8)	- Design (-/4) - Skeleton (-/4) - Physics (-/16) - FGP (-/8)
03.03.	Formal Game Proposal	- Simple Map(10/8) - Meshload (5/4) - Ghost cam (-/3)		- Character Controller (20/15) - Power-Up Prototype (-/10)
10.03.	Mutual Project Critiques	- Project Critiques (1/1) - Simple Map editor (20/20)	- Project Critiques (1/1)	- Project Critiques (1/1) - Dimensions (15/15) - Box Controller (4/10)
17.03.	Game Prototype, Functional Minimum	- Map-Modelling (5/3) - Map editor (15/13) - Refactoring (-/2) - Separating editor solution (-/5)	- Character modelling (12/-) - Prototype video (-/24)	- Bomb Controller (20/15) - Refactoring (-/15)