

Team 5: Formal game proposal

Game Programming Lab

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1 Introduction

The formal game proposal makes up the first chapter of our project notebook. The game proposal describes our game idea, provides a detailed development schedule, and gives a qualitative assessment of our project. This proposal is intended to be professionally prepared, expressive, grammatically sound, illustrative of our efforts and process, and easy to understand.

2 Game description

2.1 Story and setting

A small group of gladiators is trapped by a big evil boss and fights for survival in a deadly arena.

2.2 Basic game idea

Our basic game idea consists of a small scalable group of one to four surviving adventurers trapped in a large arena. The goal of the game is to defeat the evil arena boss who poses different challenges and threats to the players. While the boss is usually positioned at the center or at the border of the scene (in a prominent position), the scene is seen from top and character movement is restricted to the arena's floor. The game is divided into levels where each level represents a unique challenge posed by the boss and a specific strategy that players must find in order to defeat him. Instead of just "killing" the boss after a completed level, the boss transforms himself into a new and stronger version and the next level starts.

2.3 Player control

Every player acts individually and has a set of basic abilities available for use:

- Move around: The character moves into all four directions
- Melee attack: The character hits the boss from a small range
- Ranged attack: The character shoots a projectile at the boss from a longer range
- Jump: The character jumps in the air to move over obstacles
- Defense: The character ducks or shields itself in order to avoid damage

The different player actions are also illustrated in figure 1.

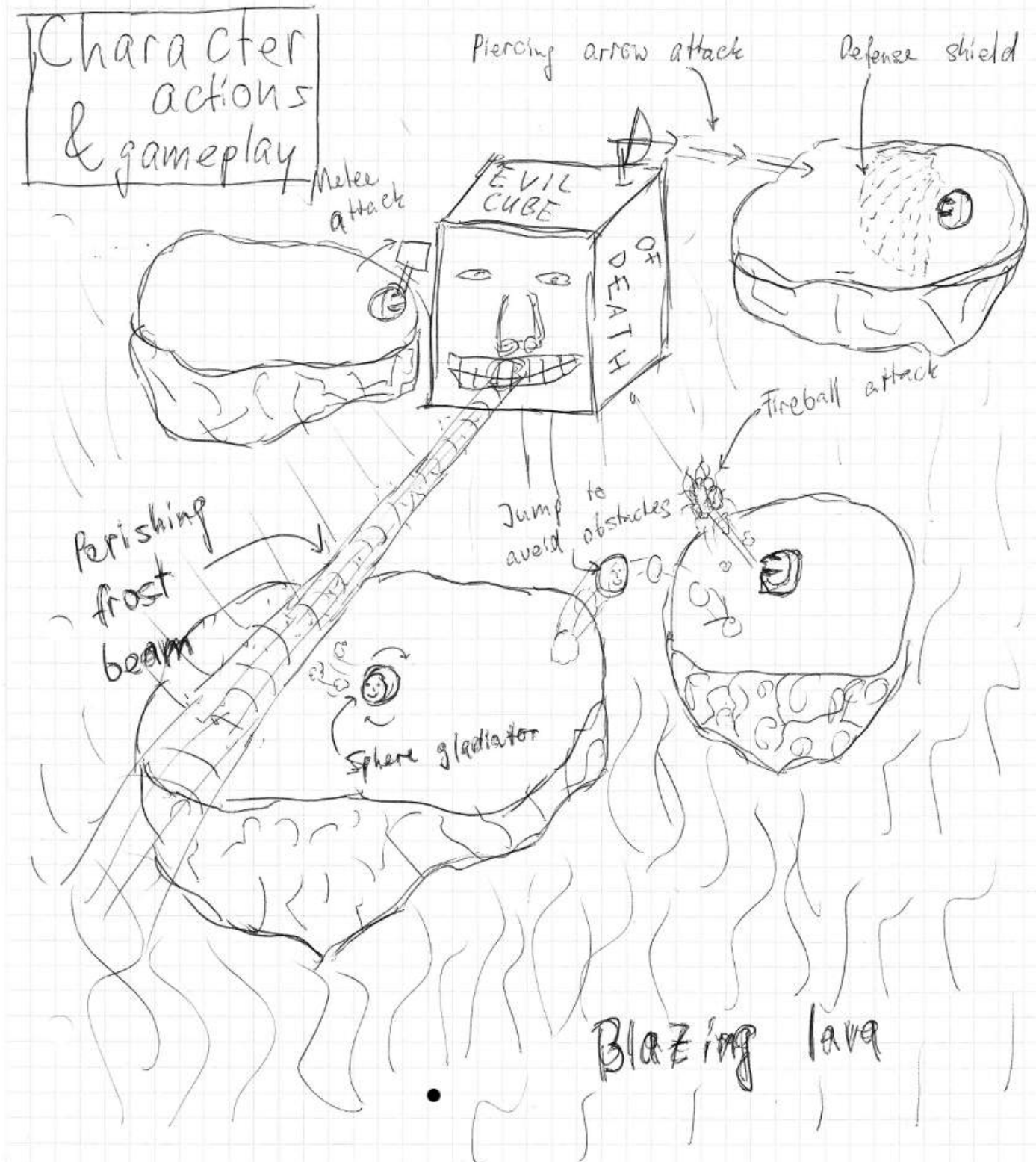


Figure 1: Player actions and gameplay concept art

2.4 Boss encounters

The following encounters are ideas for abilities the boss can use in levels on the players. One or several of these ideas could be combined in a single level.

Frozen pool: The boss is located at the center of a pool filled with water and attempts to attack the players with ice beams. Ranged attacks against the boss are ineffective due to his ice shield, but every beam targeted at the players freezes a small water path from the players' position to the boss' location which enables one player to move closer to the boss and attempt a melee attack, which can crush the boss' ice shield and enables all players to target ranged attacks against the boss while the shield is recharging. In between ice beam attacks, the boss shoots projectiles at players that they have to avoid.

Flame pillar: The area on which players can move is divided into platforms which start to break after the boss visually focuses on them. When a platform breaks, a flame pillar shoots up from the ground which deals high damage to a player standing on the platform. In order to defeat this level, the players have to multitask and avoid the flame pillars as well as deal damage to the boss at the same time. This is illustrated in figure 2.

Reflective shields: The boss suddenly becomes immune to all player attacks and starts to shoot small projectiles at the players. The players have to figure out that the boss cannot be damaged directly but that they have to activate their shields shortly before the impact of a projectile to reflect it at the boss.

Earthquake: The boss stomps the ground and provokes an earthquake in a certain area that has to be avoided to prevent damage.

Burrower: The boss is able to burrow under the ground and suddenly reappear in the mean position of the players. The players have to figure out that they need to spread out in order to make the boss appear in a desired location suitable to attack him from all sides.

3 "Big idea" Bullseye

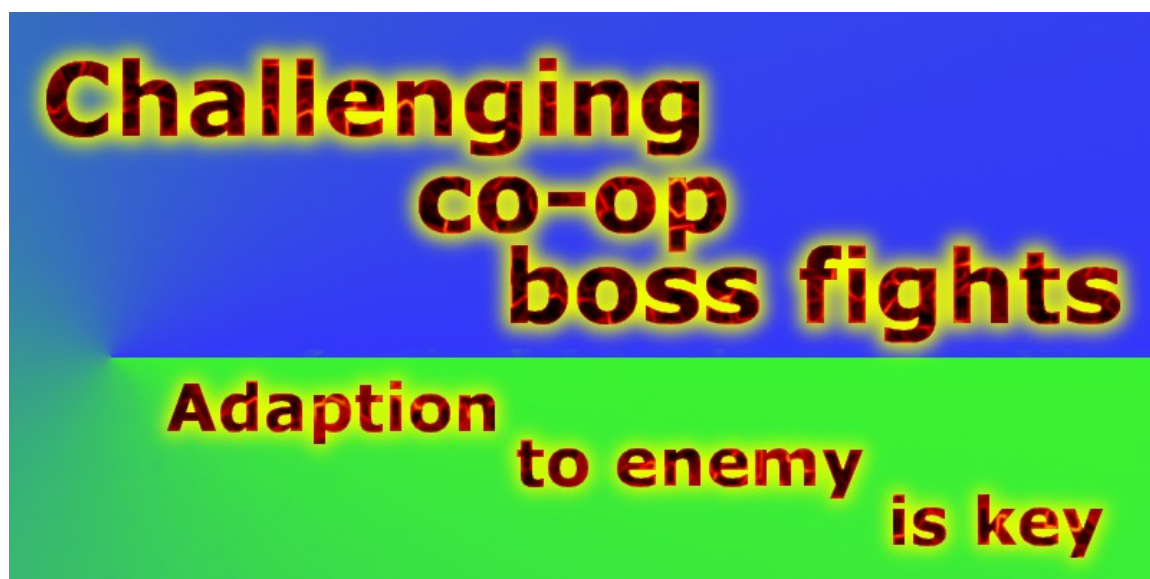


Figure 3: Our "big idea" bullseye sheet

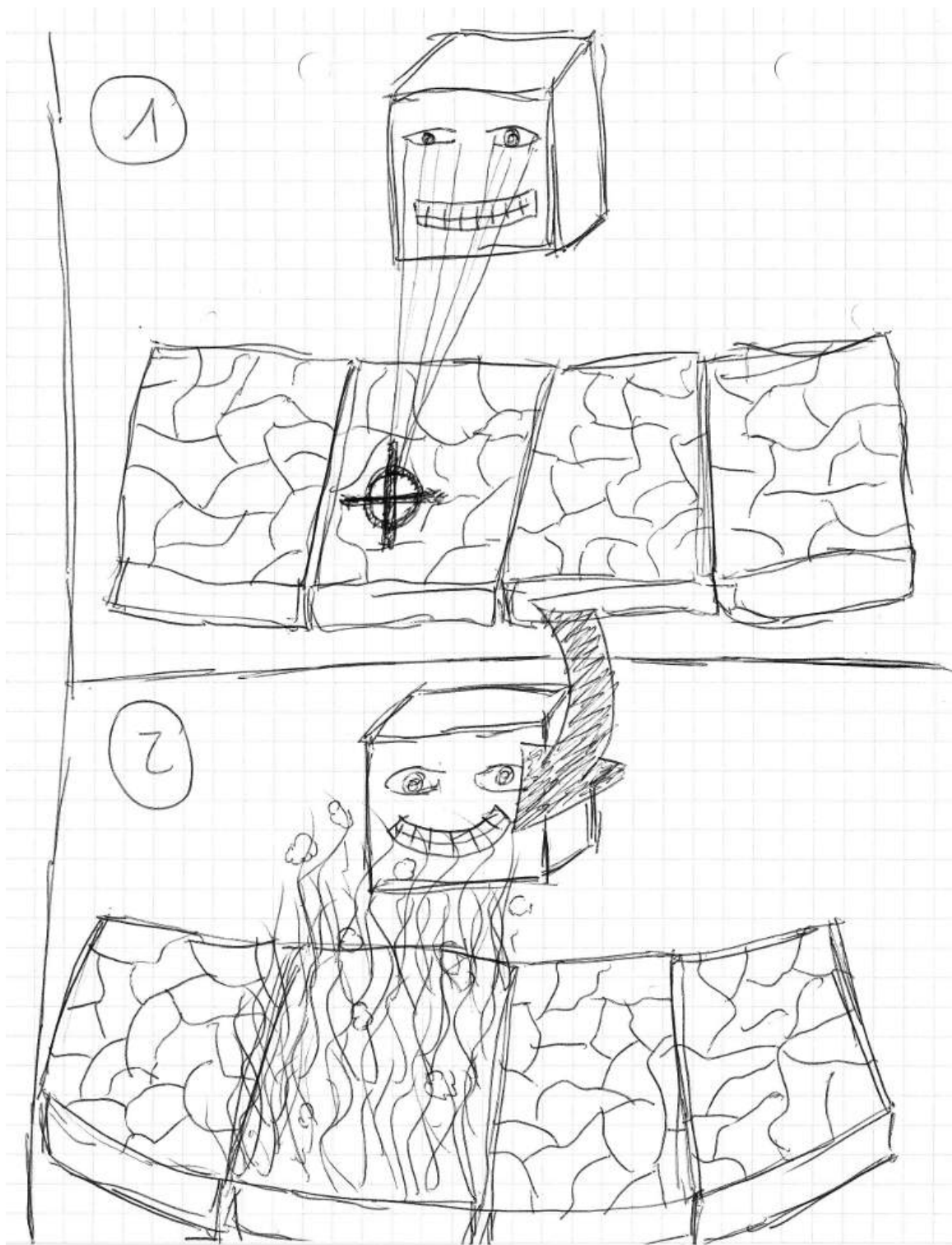


Figure 2: A concept art of how the flame pillar boss ability could work

4 Technical issues

Since several players interact with the world and with each other in the game, an arising issue is character modeling and animation. Even though none of the team members has previous experience in this field, we're committed to giving our best to explore ways on how to deliver a visually acceptable and non-disturbing range of animations.

Our big technical focus is the visually pleasing display of graphical effects to convey concepts such as ice beams, fire pillars or other "elemental" attacks. We intend to apply particle simulation and shading techniques in order to implement them.

5 Development Schedule

5.1 Development targets

5.1.1 Functional minimum

- Simple arena with fixed camera perspective from top
- One controllable player that can move and perform melee attacks
- No character animation yet
- Stationary boss with a health bar
- Boss throws balls at player

5.1.2 Low target

- Sound effects for attacks
- Character and boss models
- Character jump action
- Character movement animation
- Multiple players
- Basic lighting, shading and shadows

5.1.3 Desired target

- Game menu / GUI
- Character attack and damaged animation
- Character shield action
- Dynamic camera movement
- Dynamic environment (water animation, breaking platforms)
- One boss level with dynamic encounters that is fun to play
- Graphic effects such as fireballs, ice beams, etc.
- Post-processing effects

5.1.4 High target

- Reiterating levels with increasing difficulty
- More different levels featuring different encounters
- Different selectable characters with different models and slightly differing abilities (stronger melee attack vs. faster movement, etc.)
- Improved lighting, shading and shadows

5.1.5 Extra targets

- Networking support
- Map editor in game
- Role playing elements

5.2 Team background and task assignments

5.2.1 Florian Köhl

Semester: 7th Bachelor

Related courses taken: Visual Computing

Task assignments: Modeling, Animation, GUI, Sound

5.2.2 Marko Bencun

Semester: 1st Master

Related courses taken: Visual Computing, Physically-based Simulation, Surface Representations and Geometric Modeling, Computer Graphics, Advanced Topics in Computer Graphics and Computer Vision, Simulation using particles

Task assignments: Graphics Engine, Camera, Control, Shadows

5.2.3 Fabian Hahn

Semester: 2nd Master

Related courses taken: Visual Computing, Physically-based Simulation, Surface Representations and Geometric Modeling, Computer Graphics, Advanced Topics in Computer Graphics and Computer Vision, Advanced Methods on Computer Graphics

Related work: Internship at Disney Research Zurich

Task assignments: Graphics Engine, Physics, Effects, Boss AI

5.2.4 Remi Meier

Semester: 7th Bachelor

Related courses taken: Visual Computing

Task assignments: Artwork, Modeling, Animation, Boss AI

5.3 Estimated schedule

To be determined.

6 Assessment

Our game is a cooperative multiplayer action game targeted at players with medium skill who want to enjoy strategic and collaborative gameplay against a strong enemy with seemingly superior power. The players are encouraged to figure out the optimum strategy to defeat the boss in a level while evading projectiles and overcoming obstacles.

The top view ensures a good overview over the scene and intuitive control of the player characters.