Technische Universität München - ShaderKurs WS 2018/19

Wumpus World

Game Design Document

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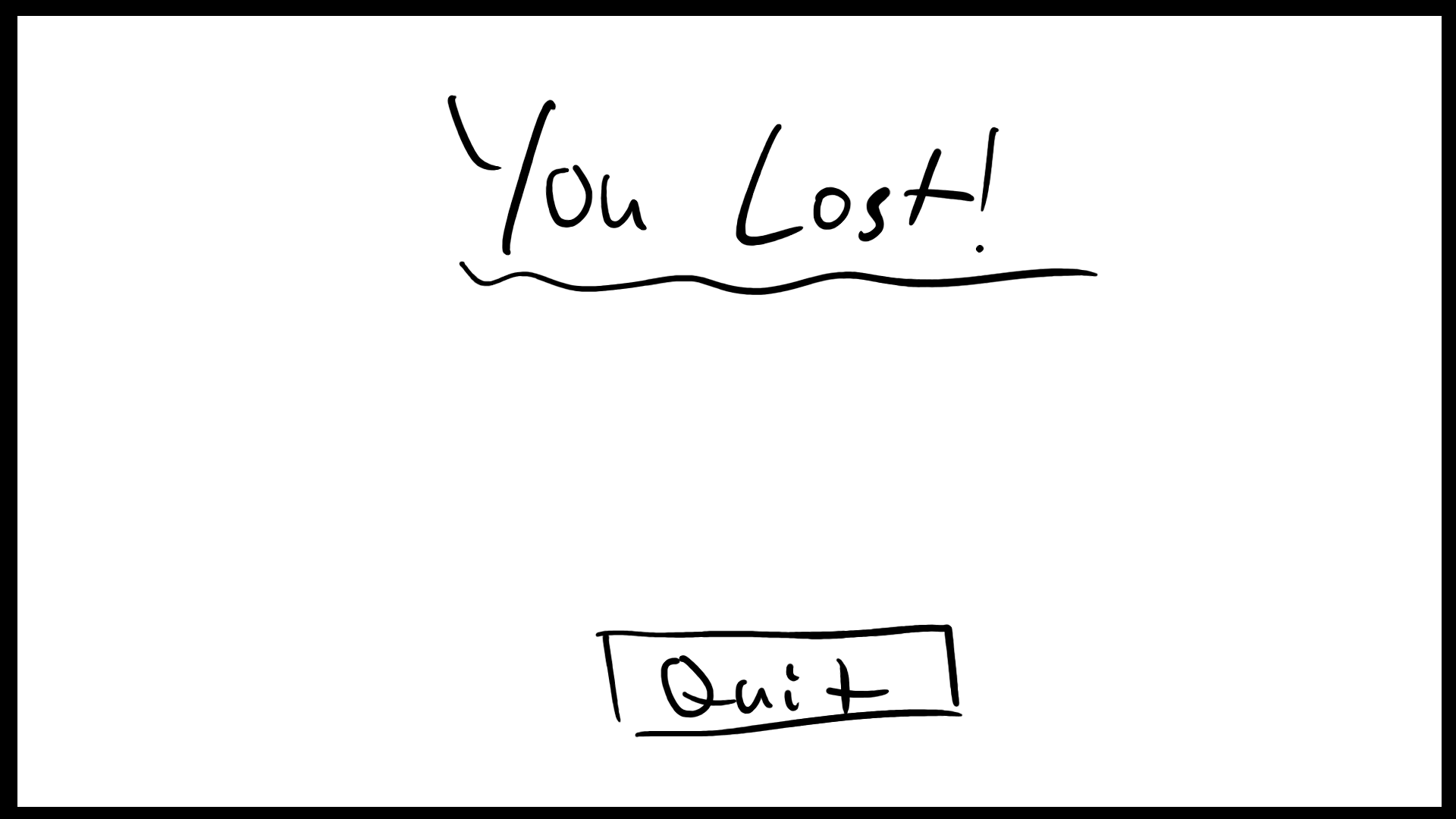
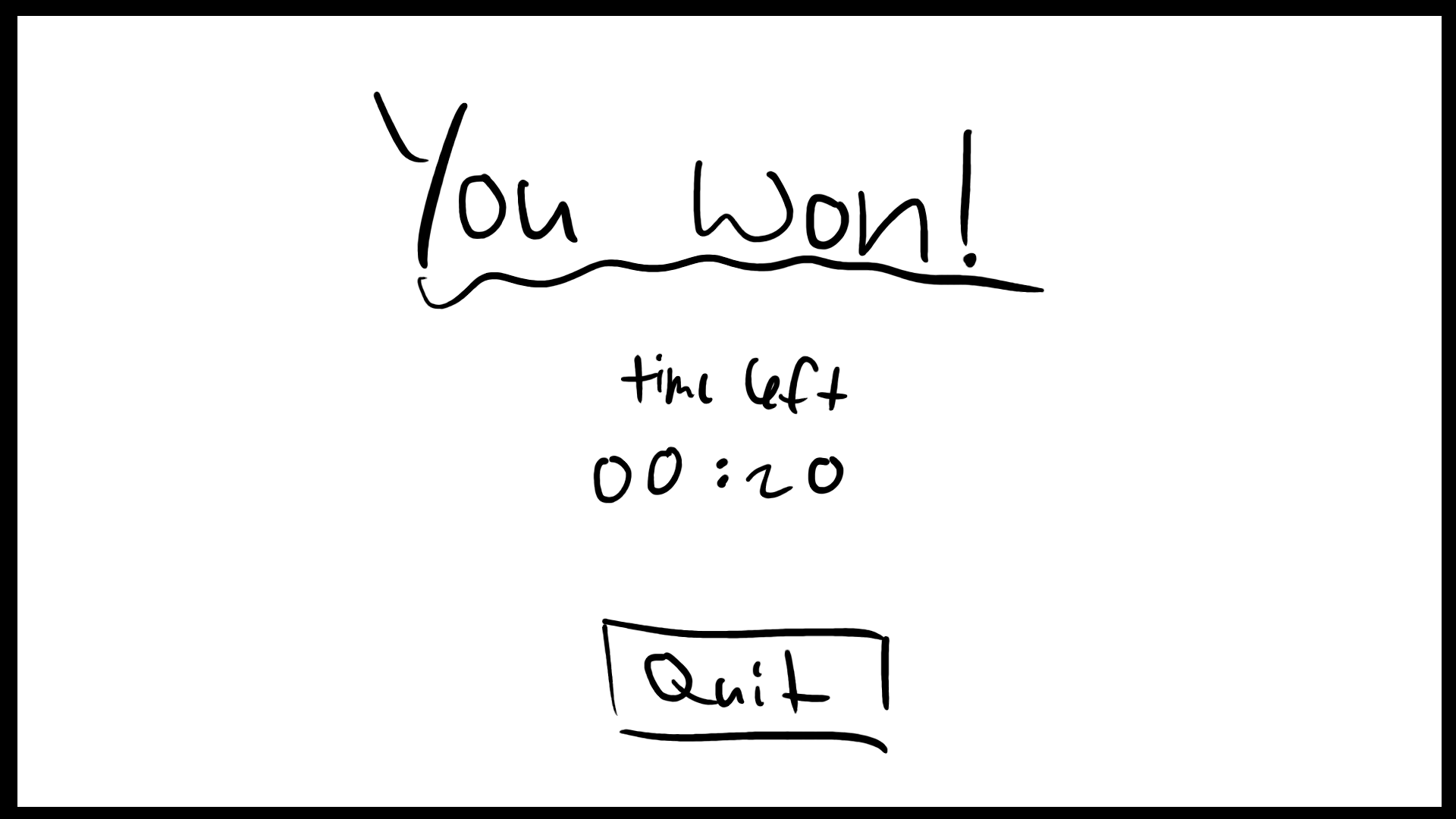
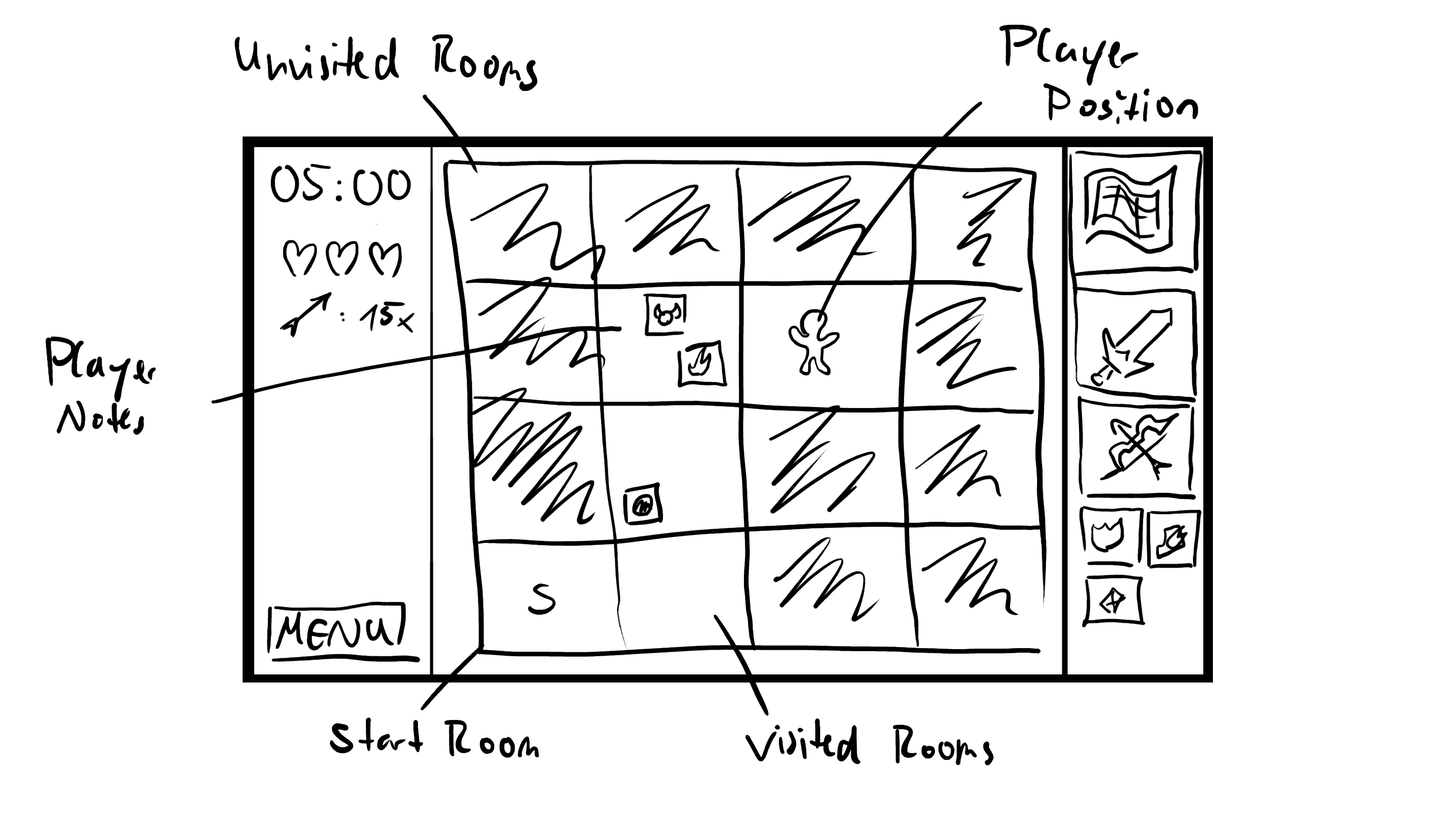
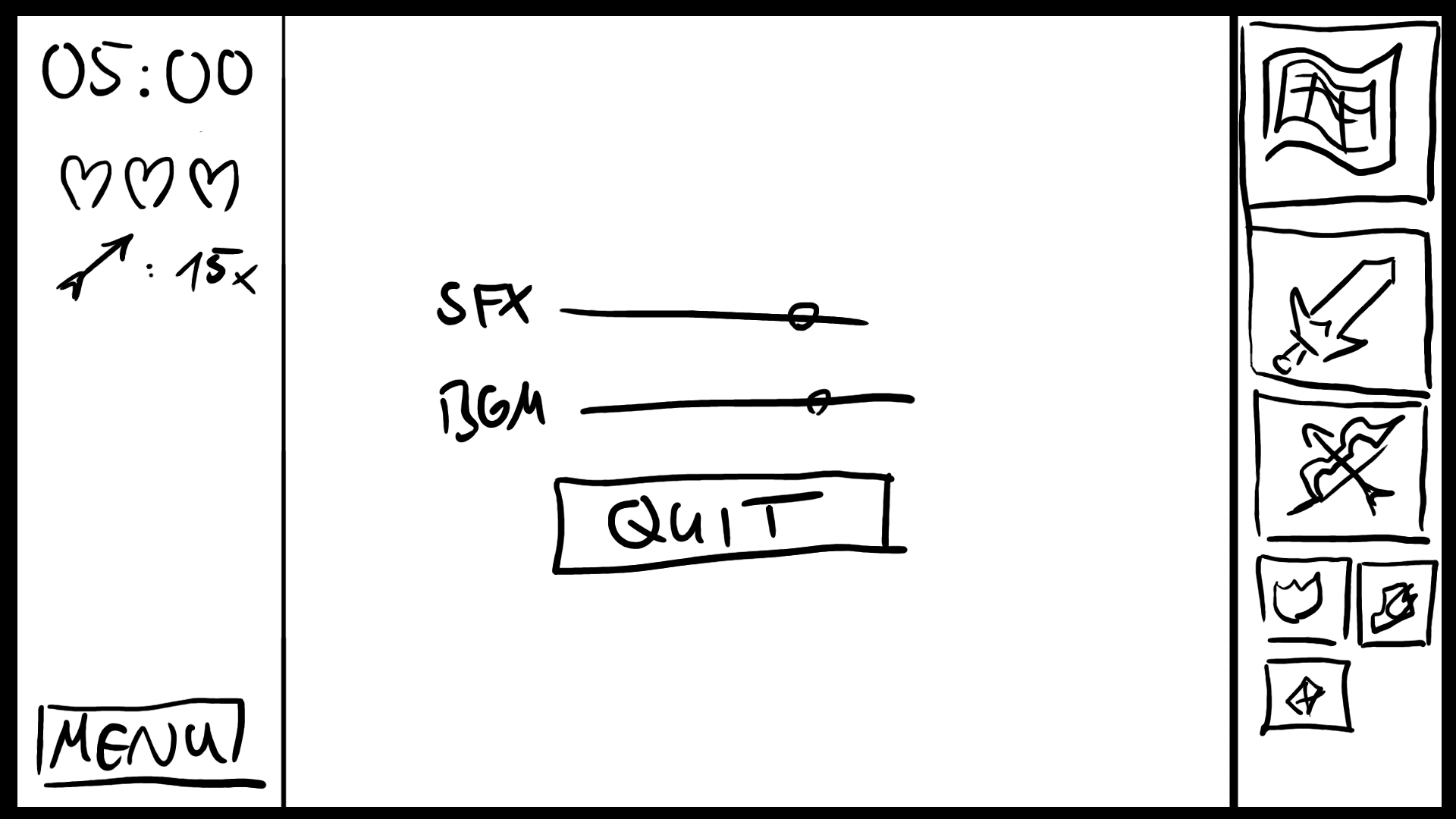
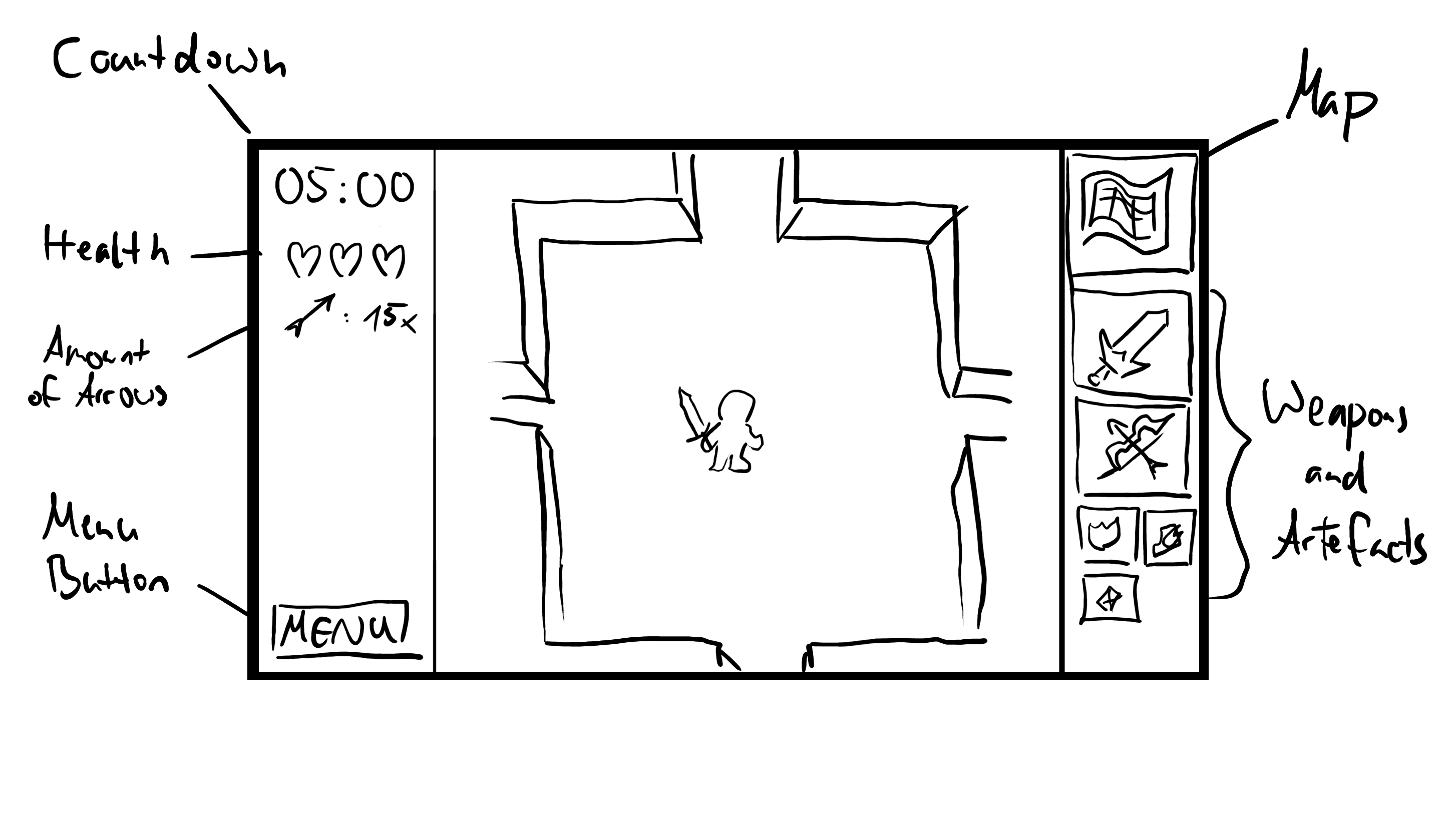
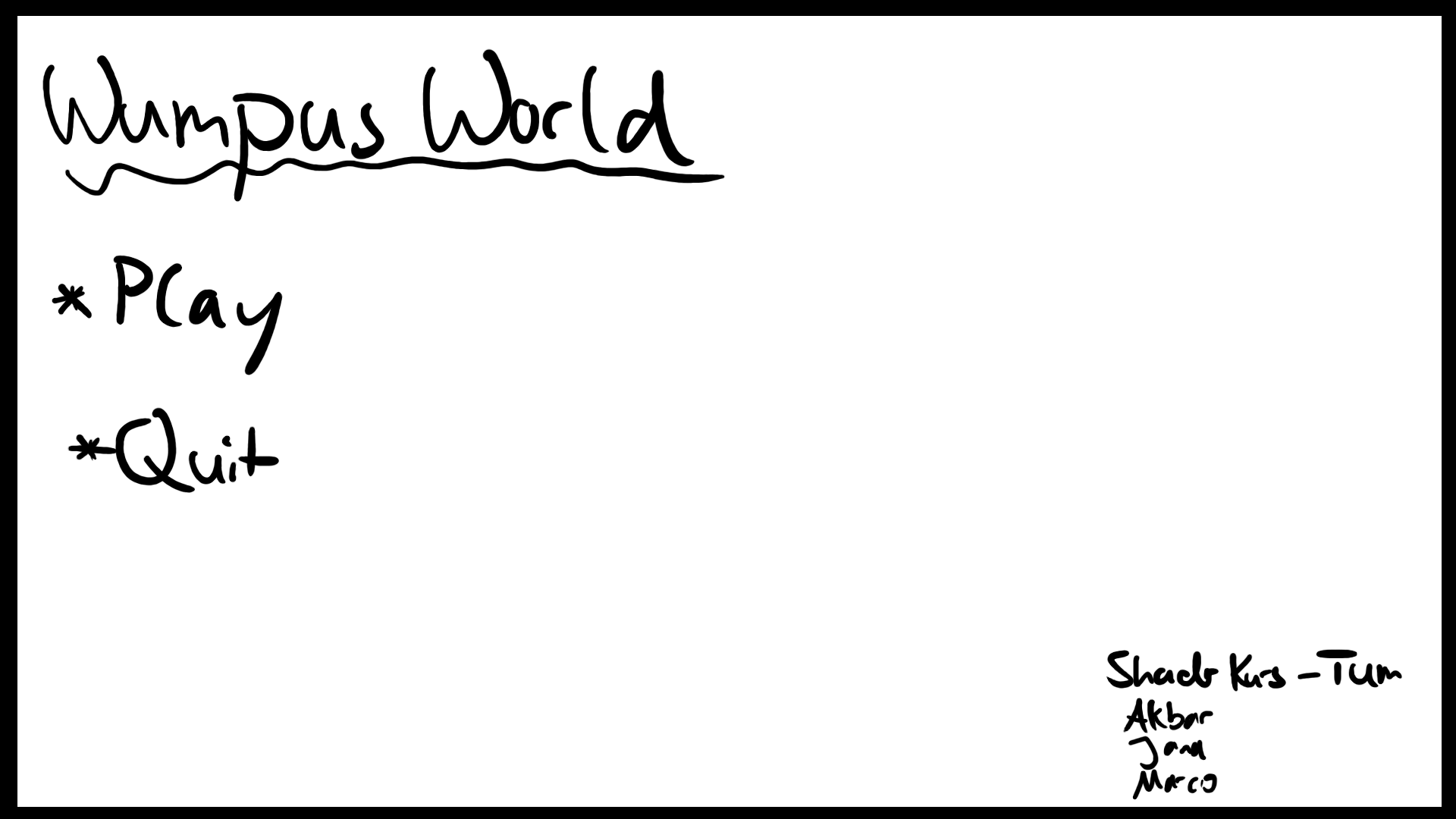
# Mission Statement

Wumpus World is a Top-Down-Shooter game where the player has to go through a maze to get an artefact and defeat the final boss.

# Sprints

## Core Features

### Game Loop



### 

### Player



Design:

* Matthias Althoff lol
* Male
* Chibi Style
* Black: Idle state with sword [Sprint 2]
* Red: Wing artefact
* Green: Anti heat barrier artefact
* Blue: Wumpus slayer artefact

Movement:

* WASD: Walk
* Right Mouse Button: Run
* Left Mouse Button: Attack  
   When clicking/holding, player looks at mouse

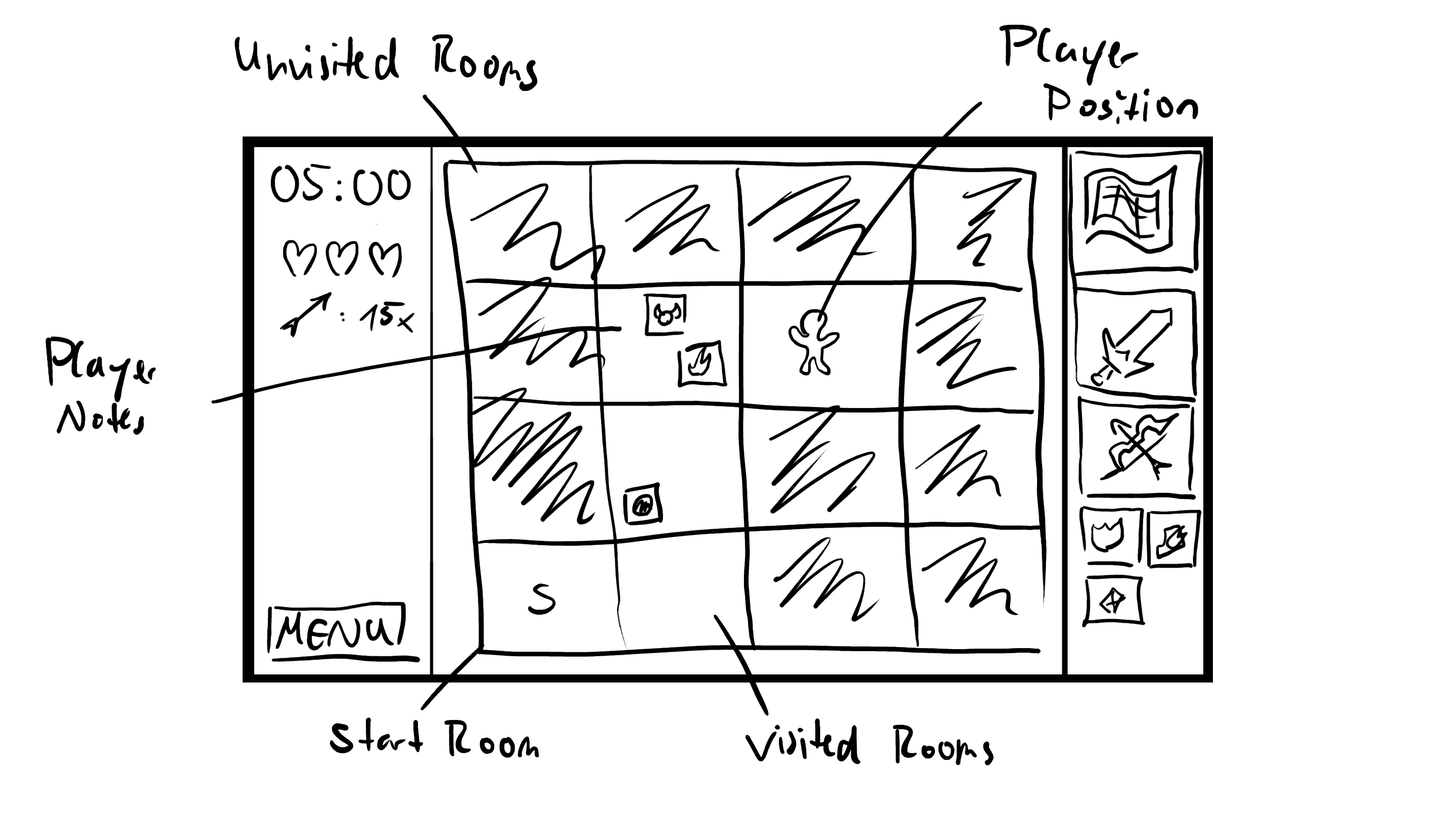
Animation:

* Idle
* Walk: forward, sideways, diagonal left and right; each one plays backwards  
   when going to the opposite direction; speed duplicates when running
* Attack: sword swing, looks at mouse while swinging [Sprint 2]
* Aim: holds bow, looks at mouse [Sprint 2]
* Dying

Shader: (Bitte weitere Ideen vorschlagen)

* Body: diffuse  
   dissolve vertically when dying  
   glow eyes + aura when Wumpus slayer is active   
   glow ears + aura when anti heat is active
* Body Aura: wireframe when anti heat is active  
   dissolve vertically when dying
* Sword: diffuse  
   dissolve vertically when dying  
   glow edge when Wumpus slayer is active
* Bow: diffuse  
   dissolve vertically when dying
* Wings: diffuse  
   dissolve vertically when dying  
   particle system (not shader) for fire

### Maze



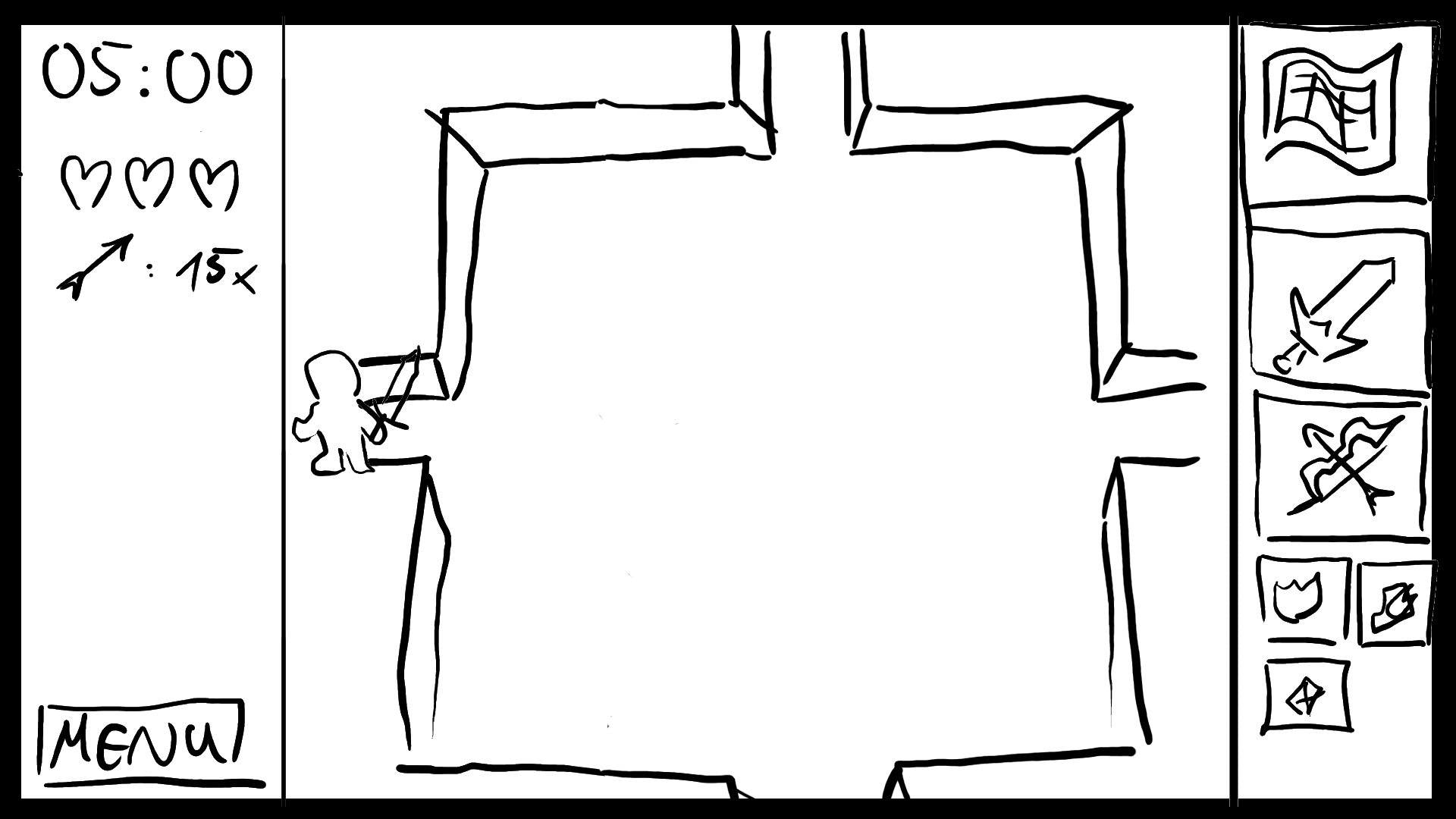
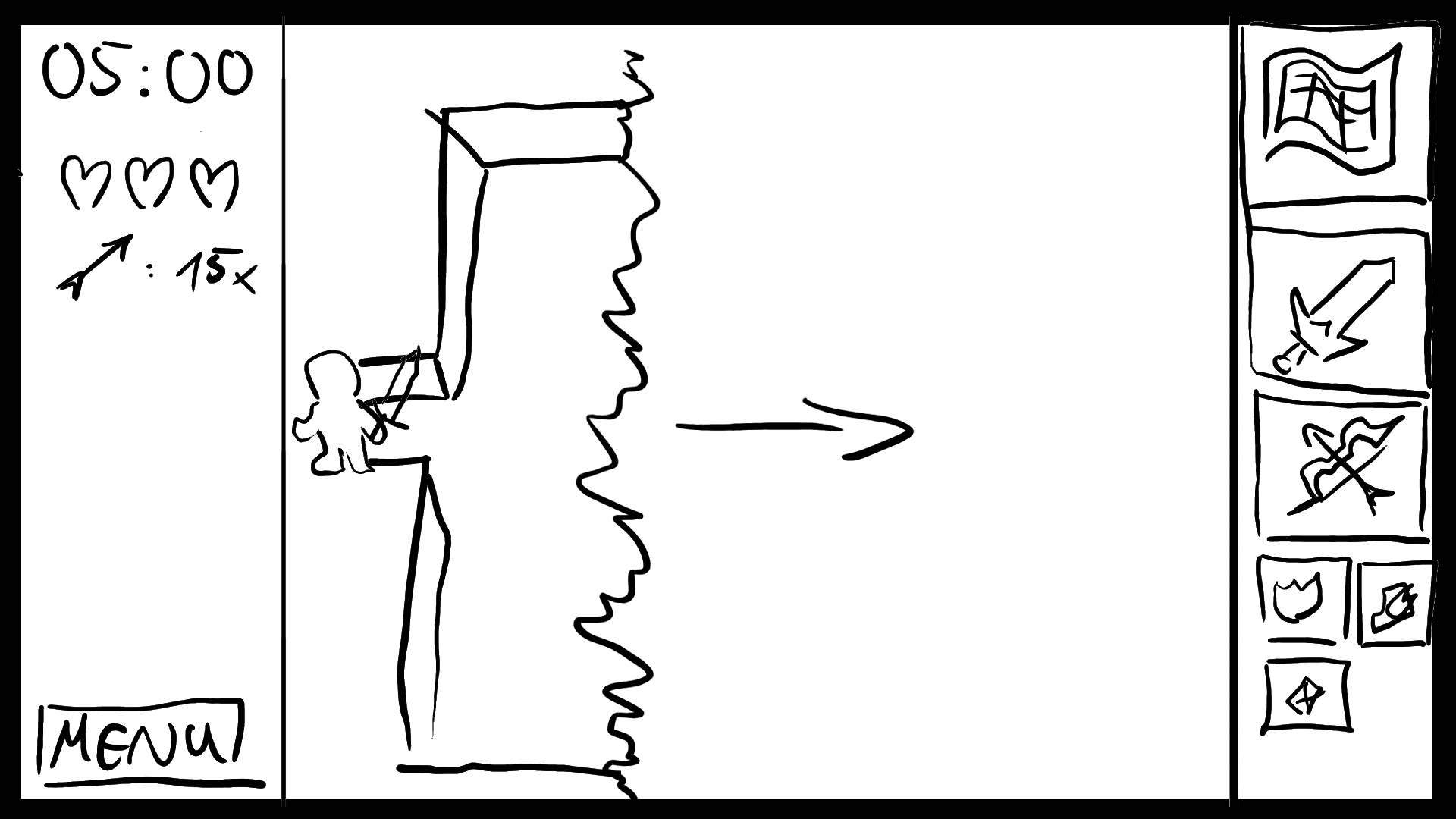
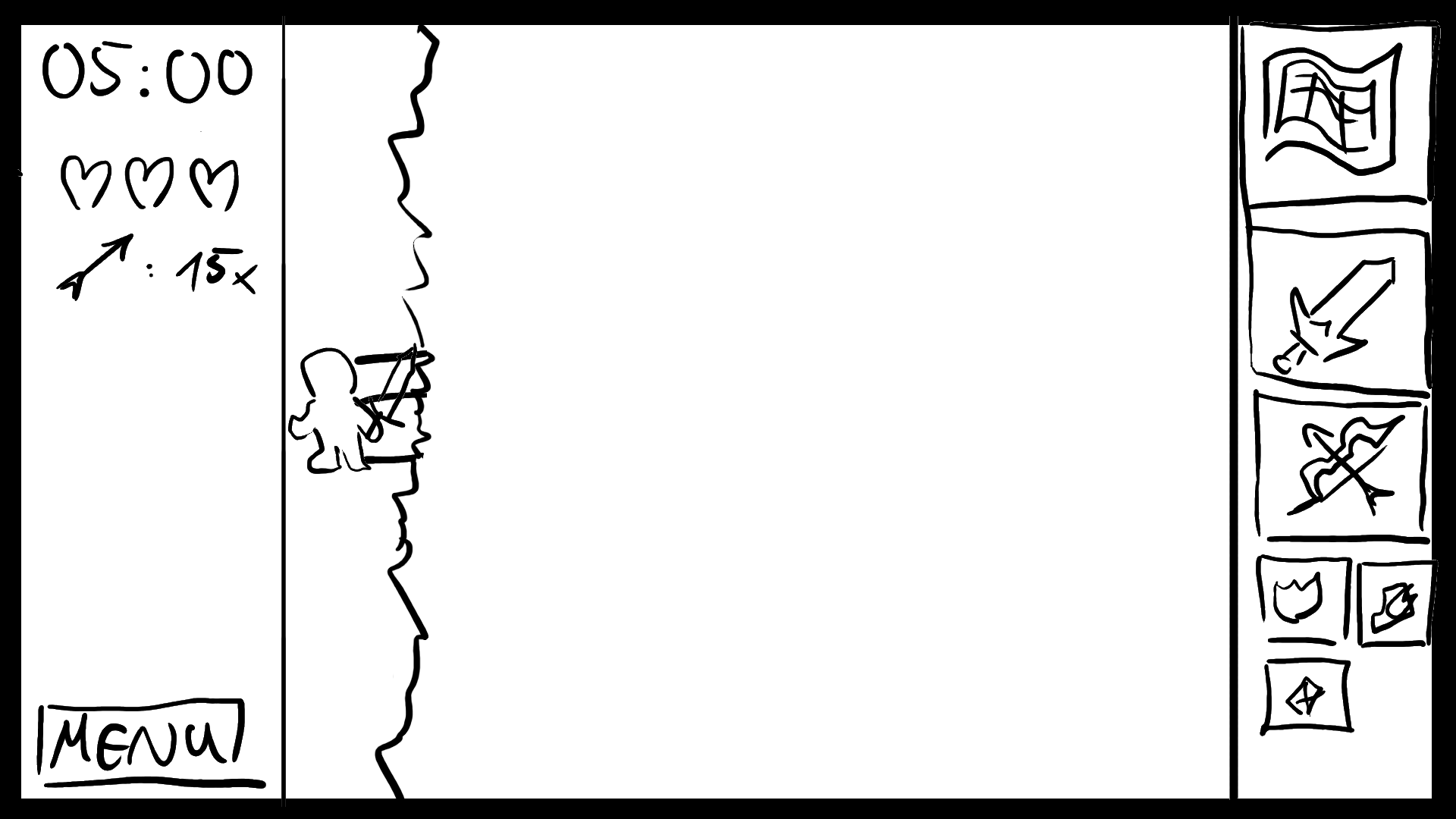
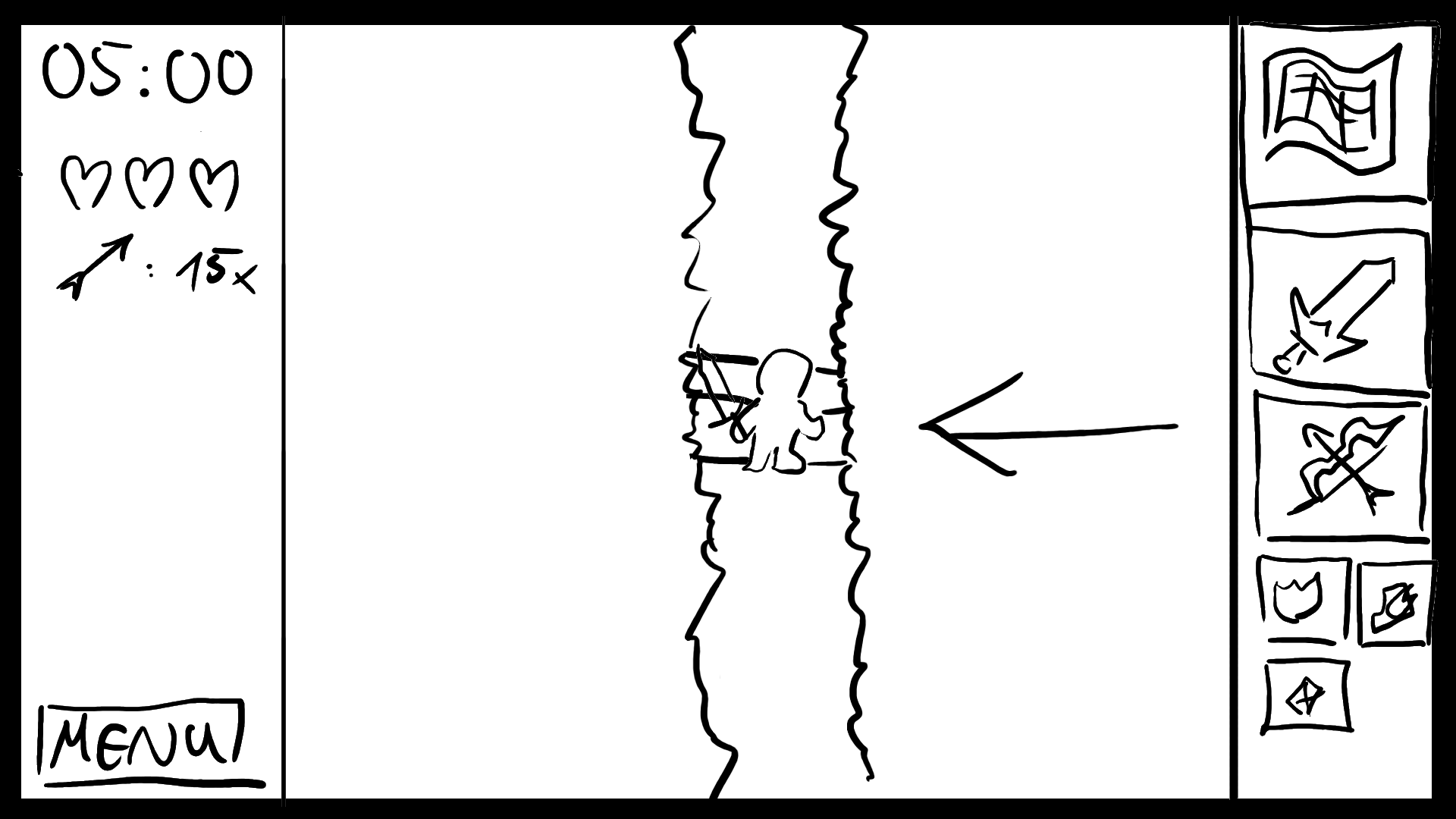
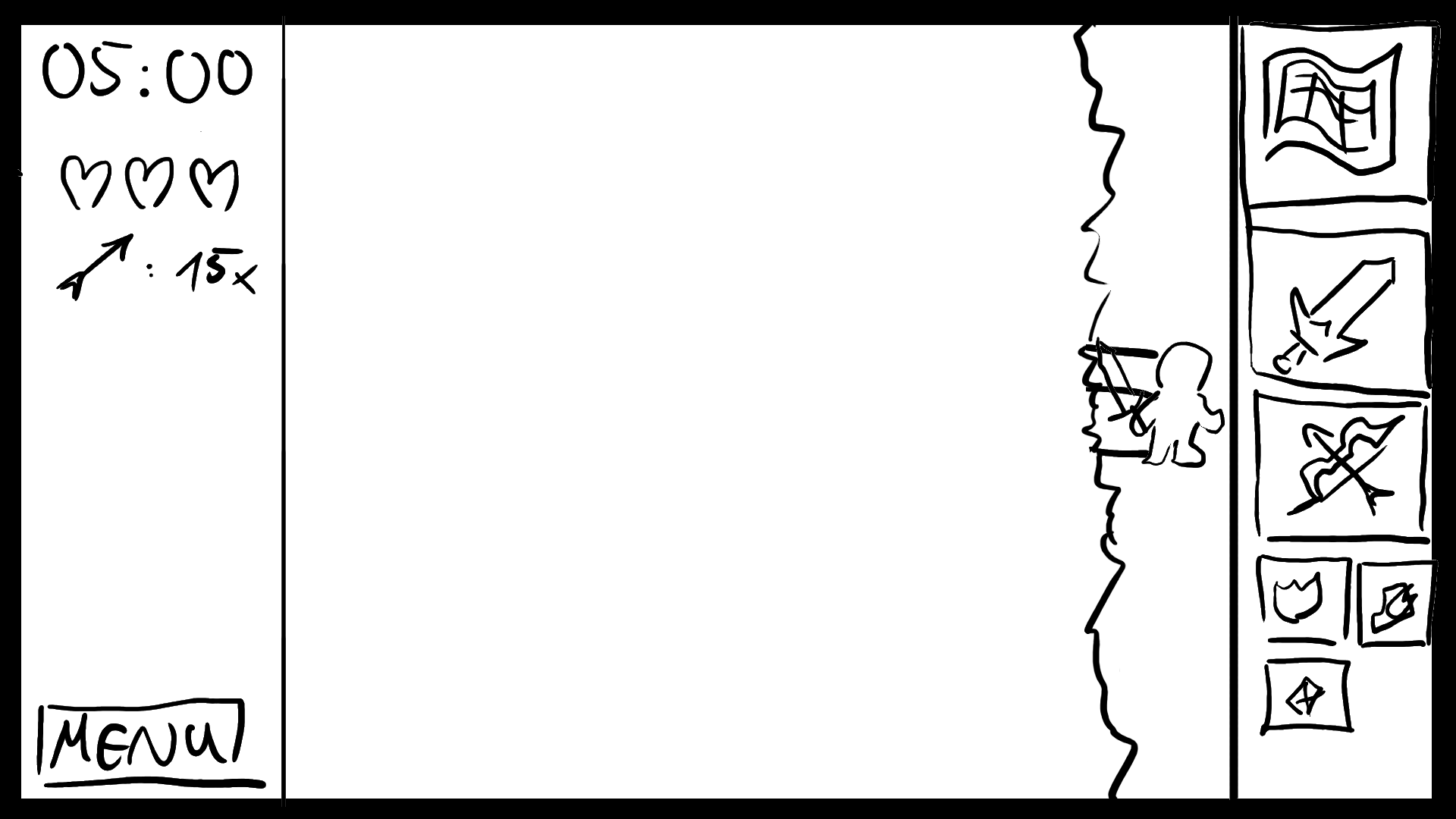
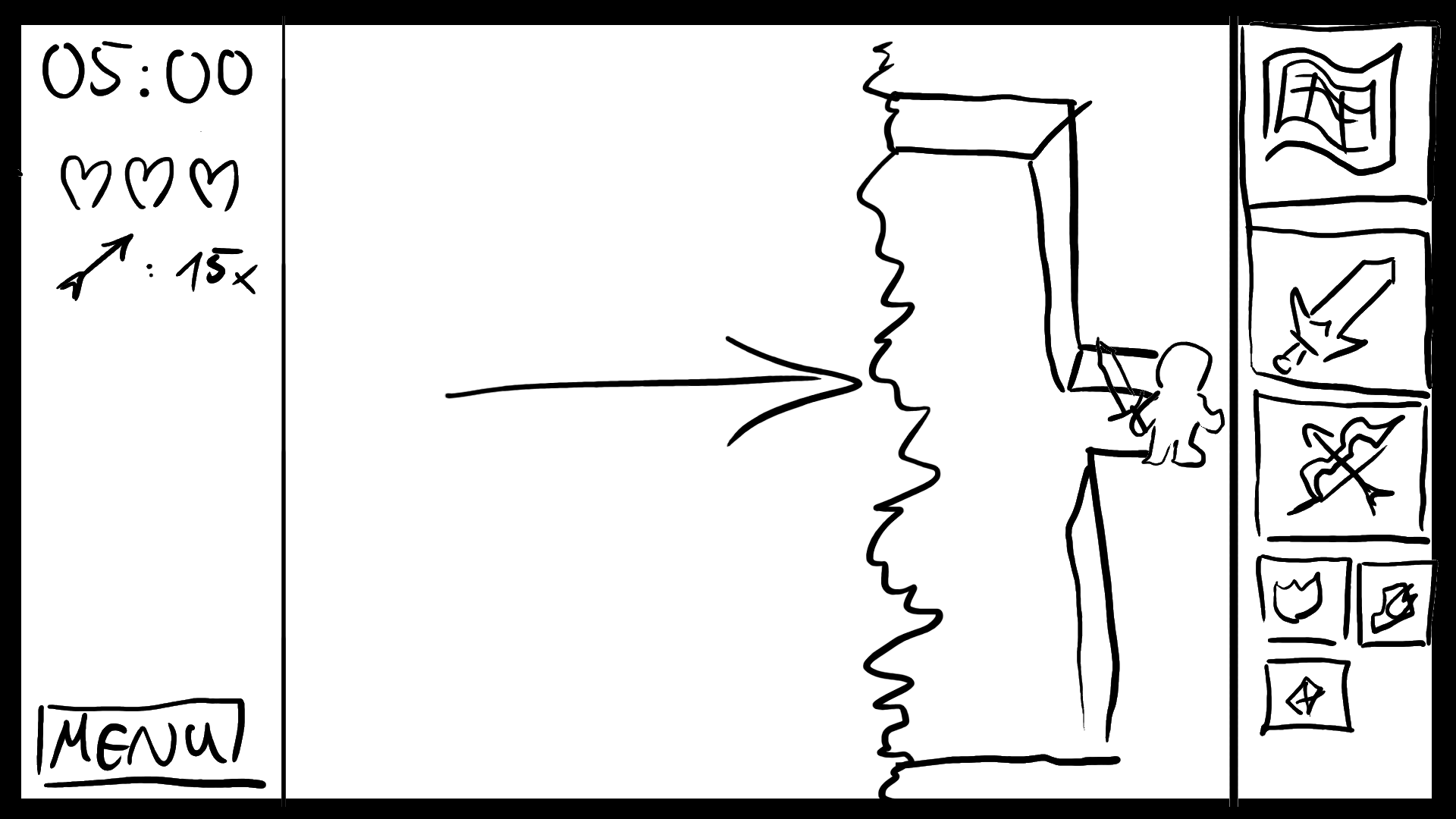
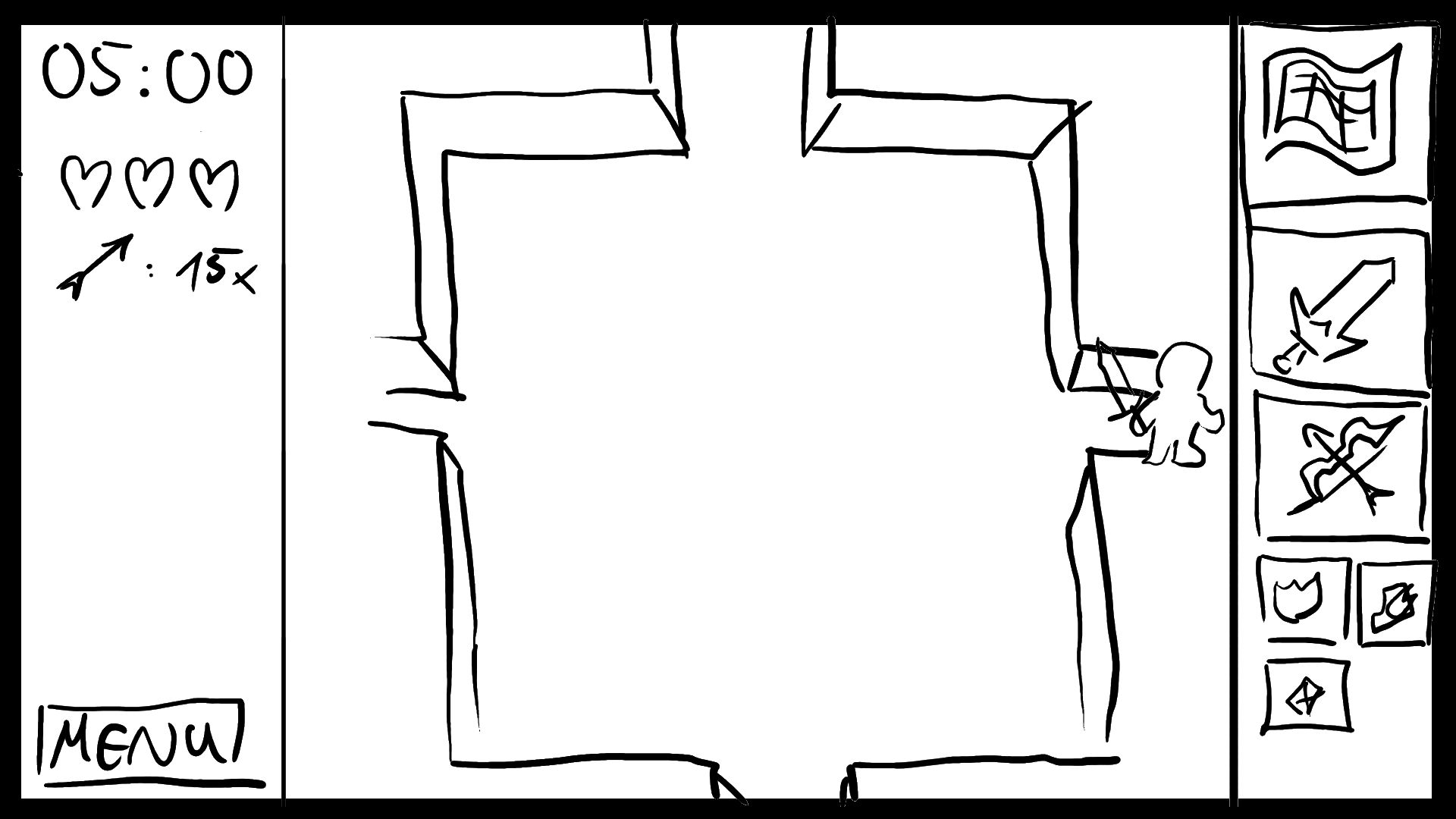
* Start: Bottom left corner  
   Respawns there when dying  
   Neighbor rooms are no instant death rooms
* Instant Death: Wumpus, Pit or Lava  
   Neighbor Rooms indicate its location with shading effects on the wall
* Treasure Room: Contains artefacts to overcome Instant death

On map menu, the player can select a block and mark it with the three symbols. So the player can remember which effects are in which rooms.

Shading: (Bitte weitere Ideen vorschlagen)

* Indicators: Color waves  
   Pulsing  
   Shaking with geometric shader  
    
   Effect-Death pairs are randomized -> on demoday more people can play without  
   cheating  
   Alternatively: for each death an effect that fits (Was denkt ihr?)
* Visibility: Dissolve, only active room is visible -> dissolve effect when going to next room
* Pit: Dissolve, is actually the same with visibility but in y coordinate

Animation:



Meanwhile, the player cannot move. In that way the player sees first if the room is safe or not. Then the player instantly dies before he can move again lol.

### Instant Deaths

* Pit: Player falls -> wind in rooms next to them
* Lava: Player burns and dies instantly  
   Shader: pulsing glow  
   Particle System for fire
* Wumpus: Laser Vision kills the player  
   Shader: Laser as particles with compute shader

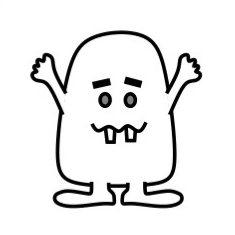
### Artefacts

* Wings: Fly over pit
* Anti-Heat: Walk through lava
* Wumpus slayer: Immune to Wumpus laser

Even though wings and anti-heat are passive, they cannot be used at the same time with other items. The Wumpus slayer is fully passive and always active once achieved.

### Wumpus

Reference picture from the AI lecture:



[Sprint 1] With the Wumpus Slayer, the player shines so bright that Wumpus dissolves. -> Win

[Sprint 3] More boss fight.

## Secondary Obstacles

### Sword

Obtained when the game starts. When left clicking, the player swings the sword in the direction of the mouse.

### Bow and arrows

Can be achieved after killing a hunter mob.  
Equip it by clicking on the icon on the right.  
Hold the left mouse button to aim towards the mouse, release to shoot.  
Has max 15(?) arrows. Arrows can be looted by defeating mobs.

### Mobs

3 types:

* Sword mobs; 2 hits to kill or 1 arrow; drops hearts
* Bow mobs; 2 hits to kill or 1 arrow -> drops bow if not in the inventory yet
* Flying mobs (bats); can fly through pits; 1 hit or arrow to kill

All mobs respawn when going to another room.

### Switches

Some non-Instant-Kill rooms have holes. To activate a bridge above the hole, you have to hit a switch with the sword or shoot it with bow and arrow.

## Story

### Companion

Through the whole game, there is a fairy (?) that accompanies the player.

(Reference: Zelda DS games)

The companion is always at the mouse position (mouse itself is invisible).

Shading: (Ich hab schon so was ähliches mim UI, vllt können wir das aber in worldspace machen aber als always on top rendern oder ähnliches)

* Body: ?
* Sparkling Trail: Composite Shader

### Intro

The player finds himself in a dark room, not knowing where he is. A fairy (?) arrives in front of the player and lights up the whole room.

Companion:

“Hello there! Are you lost? Have you been here before?”

[the player can say yes or no]

If no:

“You might ask yourself where you are. I’m afraid you are trapped. This is the world of Wumpus,  
and this world tries to eat you. You have to get out of here within 10(?)Minutes. To get out of here you have to defeat Wumpus. Unfortunately, you cannot defeat Wumpus in your current state. You’ll need to achieve the Wumpus Slayer that can found be within this maze.

But be careful! This maze is full of danger. There are rooms that can kill you instantly. Wumpus, pit and lava. Though, you can avoid them. Those rooms cause certain effects on the rooms next to it. [optional:] Sadly, I don’t know what effect is caused by which instant-death room. So you have to have entered death at least once. But no worry, you will respawn in this room and try again with more knowledge. To not forget where those rooms are, you can take notes on the map.

Well then! Find the Wumpus Slayer and defeat Wumpus! Good luck!”

If yes:

“Well then! Find the Wumpus Slayer and defeat Wumpus! Good luck!”

Countdown starts.

When companion talks, a text panel appears at the bottom. Click left mouse button to continue. (so was hab ich schon in älteren Projekten)

### Tutorial

Tutorials appear only if player said no in the intro.

Companion right after intro:

“Also I will guide you through the whole adventure. First, use WASD to move. To run, hold the right mouse button.

Second, look into your inventory on the right side. Click on the sword to equip it. Click left mouse button to swing your sword to my direction.

Now go find the Wumpus Slayer!”

After achieving the bow:

“Look! You found another weapon! Click on the bow icon to equip it. Hold left mouse button to aim and release to shoot. I’ll help you! Beware that you don’t have unlimited arrows. But you can find more by killing some mobs.”

After achieving wings or anti-heat:

“You found an artefact! Click on the icon to equip it. I wonder what it’s good for…”

After achieving Wumpus Slayer:

“You found the Wumpus Slayer! Finally! Now you’re immune to his laser vision and look at your sword. It is now enhanced with the power. Now you can kill him!”

After first death:

“Oh no you died! But now you know better.”

### Bosses

For each artefact the player has to defeat a boss first.

* Wings: jumping spider robot
* Anti-Heat: enemy with a barrier, deactivate barrier by shooting at switches

Wumpus: Both bosses appear again. (hab noch keine Ideen, wie man ihn tötet, ihr könnt Ideen hinzufügen)

### Epilogue

Wumpus dissolves. The world starts to dissolve too.

Companion:

“You made it! You defeated Wumpus! Now you’re free and the world will be erased. I’m happy that I could help you…”

Everything is black for a while. Then, the player wakes up on his desk. The whole room is full of students looking at him. Behind the player is a picture of Wumpus. The player remembers again.

Player:

“Oh sorry, students, I might have dozed a bit. What happened?”

Random student:

“You tried to connect to the network, so we can start the tweedback.”

The player looks at his laptop:

“Still no connection. Ah well, let’s wait another ten minutes.”

The player dozes again.

The End.

# Tasks

## Marco

### Lava (must have)

* Floor with actual lava
* Heat haze / heat distortion

### Stencil (nice to have)

Switch (for bridge)

### Glass (should have)

Bridge

### Intersect

For bridge so player’s feet are glowing

## Jana

### Grass Compute Shader

Shows that pit is near by

### Ember Shader (should have)

Shows that lava is near by (can be particle system)

* Ember floating through air

### Aura shader (must have)

Ears aura

* Blue, fading aura to signal that you can move over lava
* Slightly bigger than actual player

Flying aura (should have / nice to have with shader)

* Can be done by pixel shader with fire object (down transparent with offset)
* Jet flames under wings (can be particle system)

## Akbar

### Dissolve

### Particle shader

* Mouse effect

### Glitch effect

To show where Wumpus is