

# Computer Games Laboratory

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## Game Idea Proposal



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## Abstract



“What happened there is severely atrocious!”. It is April 4 of 1922 and the bodies of the five members of the Grueber family and their maid were just discovered by a party of unsuspecting villagers. They were always isolated and rarely left their farm. To outsiders it was known as Hinterkaifeck and was located 1km away from the main town of Kaifeck. Kaifeck was nested within the woods outside Groebern, between the Bavarian towns of Ingolstadt and Schrobenhausen, an hour drive from Munich.

The stains of blood are still there, in the barn, in the house, in the beds. “Who could possibly commit such a cruelty?”. A sight that drove away even the coldest of men. Sadly, the local police seems to be lost and cumbersome, and inevitably they reach a dead end after their investigation. The evidence is vague and confusing, the suspects’ profiles barely match with the atrocity of the murders. The situation is aggravating further due to the local rumors about paranormal or metaphysical involvement in the case, an extremely terrifying direction.

The case demands someone with skills and sharp brain who for a long time is fighting with his own demons. Someone with guts and instinct, a true investigator who is able to find the paths and the connections through the mist and shed light on one of the most ferocious crimes that occurred in Germany in the last century.

## Game Description

The Unsolved: Hinterkaifeck is a first person adventure video game, with horror elements in which the player assumes the role of a private detective in an interactive story driven by exploration and puzzle-solving.

The game is taking advantage of the dazzling features and technologies that are available through the newly introduced HTC Vive. The game is highly based on the unbelievable but entirely true story of the murder of the entire Grueber family in a village close to Munich.

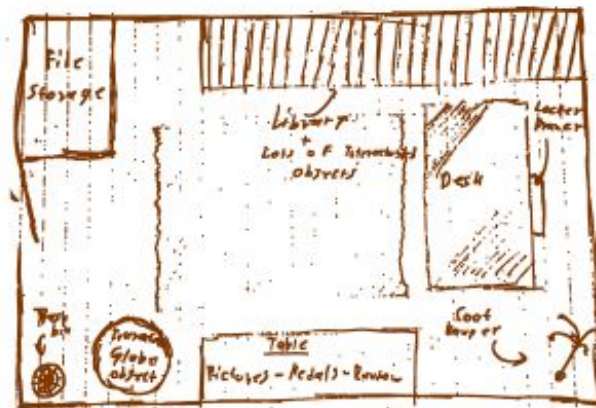
With the use of the Virtual Reality, through a completely interactive and immersive environment, the player is able to wander around the locations and the places portrayed authentically in the game and find clues by figuring out riddles and puzzles in order to solve the mystery that covers that case.



## 1- Plot

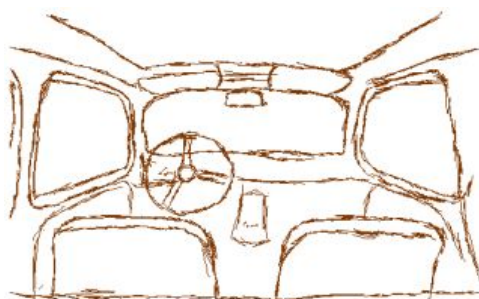
The storyline of the game is spread over 5 Chapters.

### Chapter 1 (Chief's office)



It is a cold morning of April 4, 1922 and the famous investigator, the main protagonist of “Unsolved: Hinterkaifeck”, the player (P.), is being summoned by the chief of Munich police. Driven by curiosity and natural talent of discovering clues before anyone else, P. enters the chief's office. The office is unusually quiet and P. starts searching around for elements that could indicate what this is all about. While getting familiar with the environment and interacting with the various objects, P. notices an open case file on the chief's desk. While P. quickly starts reading about the case, suddenly the chief enters the room. Despite the awkwardness of being caught for sneaking in the chief's office, he just nods and says: “Oh, I see you have already read what this is all about.”. After a brief discussion and explanation about the murders, he assigns the case to P. and sends him to the crime scene with a police car.

### Chapter 2 (Car)



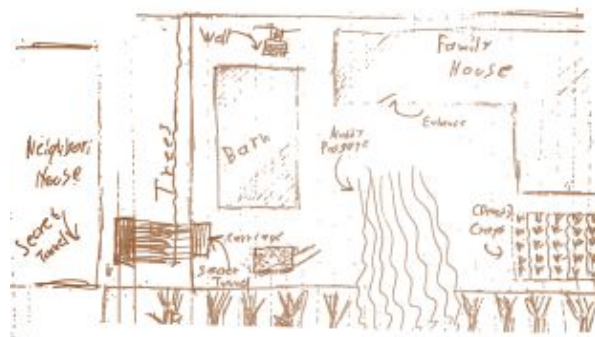
During your stay in the police car, that is transferring you to the crime scene, the driver as a policeman but also part of the community of the town gives you more information about it. He is presenting a summary of the events and elaborates in the case and the general opinion of Kaifeck community for the family and as a result, P. finds out more about the background story of the Grueber family and their isolation from the rest of the community. P. also discovers more details about the murder autopsy and the incidents before the police arrived. Finally, P. arrives in the Hinterkaifeck farm and the scene ends.

### [Chapter 3 \(Hinterkaifeck farm\)](#)

The main part of the game starts at this point. The player is finally at the place where the atrocious murders happened and he is able to search around the main buildings and the area around, searching for clues and evidence for solving the case. There is a lot of work to be done and many questions to be answered. The facts and the data from the autopsy of the murders are simply confusing. The fact that some residents talk about paranormal activity makes the case even darker and only P. can solve this mystery. As the game unfolds and P. approaches to the solution of the case, the more attached he becomes to it and the more it affects him.

The player has five rooms to investigate in the Grueber's family house: the parent's bedroom, the living room, the maid's room, the children room and the cellar. He can freely wander around and interact with the objects. Of course, the barn area is also a playable building and very important to the storyline. The riddles P. solves will give him smaller hints of the real story and answer his initial questions.

### [Chapter 4 \(Lorenz Schlittenbauer's House\)](#)



The final mystery revealed to P. is the secret tunnel's entrance that leads him surprisingly to the house of the neighbour, Lorenz Schlittenbauer. That sneaky quiet monster... A shocking and revealing turn that allows the player to finally put all the pieces of the puzzle together and understand the motives and the reasons of this ferocity. At this point of the game, the investigator will have to encounter Herr Schlittenbauer and bring him to justice. That won't be an easy task and there is a fight between them that can end in favor or against the player. After Schlittenbauer finds a gun in the room, he hits the player in the head and everything darkens in the scene.

### [Chapter 5 \(Epilogue\)](#)

The player opens his eyes and takes a deep breath. There is only darkness surrounding him and P. can hear the wind blowing through the trees. "Am I alive or I am dead", he wonders as he tries to slowly move; he lies in a pool of blood, his own blood... "Where am I?", he keeps thinking while trying to stand up. The headache is unbearable, nothing makes sense... P. realises that he is somewhere in the woods, but he has no memory of what happened after the fight... And then he notices it... He notices a piece of small notebook sticking out of his coat...

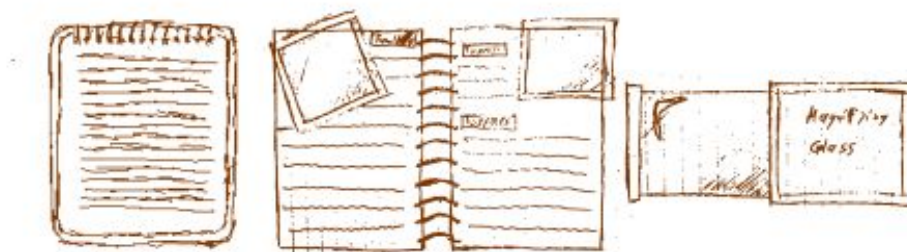
### Case Explanation (Spoilers !!)

It turned out that the killer was the neighbor, Lorenz Schlittenbauer. His family has owned both farms before. They had built a tunnel that links both farms together to ensure ease of access. Half of Schlittenbauer's property was sold to Gruebers. Gruebers didn't know about the tunnel. Mr. Schlittenbauer tried to get back his farm by asking Mr. Gruebers for his daughter's hand in marriage. But Mr. Gruebers didn't accept it. Then Lorenz tried to convince him that he's the father of Viktoria's younger child. But Mr. Gruebers knew the exactly who was the real father. So Mr. Schlittenbauer decided to pay the maid to scare Gruebers by making up stories about weird voices and that the house is haunted. This attempt ended by getting the maid fired. In the next 6 months, Mr. Schlittenbauer was using the tunnel back and forth to reach the Gruebers part of the farm. He was trying to scare Gruebers by creating a set of unexplained events. Due to the stubbornness of Gruebers, Mr. Schlittenbauer has reached a point where he couldn't find any other solution other than killing the whole family. The crime was a mix of obsession and passion and, of course, property acquisition.

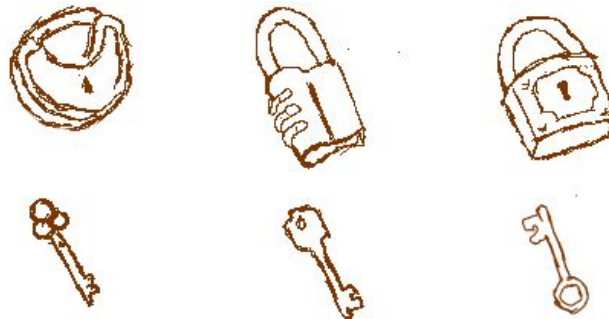
All these events will be discovered by the player through his investigation. Most of these events and especially the dates are taken from the original crime.

## 2- Gameplay

The game starts with the player standing in front of the Munich police chief's room. This will be the first time where the player is immersed inside the game environment. A tutorial will guide him/her to help in exploring/planning/navigating/interacting inside the game. The chief room will be like a sandbox where the player is asked to interact with the objects set in the scene to get used to the dimensions of the environment.



The player will be later on introduced to the case file. A very important element of the game where he/she can find info, background stories and clues from the local police on case. The player will have 3 main items on him/her: 1) a notebook, to register the main highlights of the game progress, 2) a magnifying lens, for inspection and 3) a match box to be able to lit fire. The case file along with the 3 items can be found in the player's backpack. The backpack is also the game menu where the player can pause or go to main menu or inspect the items he/she has.



The player can hold in each of his/her hands any other items from the scene. Items can be used as a direct clue, e.g. a photo. They can be used as tools to interact with, e.g. a key or a knife. Compatible items can be combined to create direct clues or tools. In general, clues can generate events, for example: unlocking a door lock will yield an open door. So, basically, at anytime the player have 6 items: 3 in backpack, 2 in hands and the casefile. The limited amount of portable tools was intended to make the game more realistic and to fit the era of the crime (1922).



The puzzle solving gameplay will start at the third chapter of the story, upon arriving at the crime scene. The player can choose which room he/she wants to start solving in the house. He/she can partially solve different rooms simultaneously. After solving all the puzzles in all the rooms in the house the player will get a big clue that will take him to the next chapter of story.

The puzzles that the player will solve have an easy to average complexity. Most of them rely on exploring the environment. The puzzle categories are: 1) text-based: riddles that point to a location, 2) mechanical-based: cutting a rope to remove what is blocking your way, 3) audio/visual-based: searching for the ticking sound. Also puzzles are categorized based on number of steps needed to solve them: 1) Single-layer puzzles (ex: find the key to open a door), 2) two-layer puzzles (ex: find tool A and B then combine them to unlock a door) and so on. All the puzzles depend on logical thinking and they are localized to the player's game progress. Only one big puzzle will be available per room/location so that the player is always focused on solving it. The outcome of any solved room is a prime clue that can be used across rooms.

Hints will appear to the player if he asks for it. The hints will appear as glowing items. This mode is called detective mode. This will ensure the continuity of the game progress.



As the gameplay progresses to the fourth chapter, the player will reach a point where he/she will be in a fight. The combat mode covers 3 main aspects: 1) hand fight, by throwing punches; 2) throwing items, because almost anything that can be interacted with, also can be used as a weapon; 3) firearms, if found, can be used to shoot at the enemy.

## Technical Achievement

People usually think about VR as a mere replacement for the monitor, whereas VR is meant to immerse the player inside the game by manipulating all of their senses. Currently, there is no single device that targets all the human senses. Therefore, such devices usually target up to 3 human senses at once, e.g. sight and hearing alongside with haptic feedback. This will be considered in the game design.

- For sight: HTC Vive headset: Vive is a very powerful tool and our choice as the main portal through which the player will interact with the digital environment around him. It consists of the headset, two controllers and two sensors that allow us to get feedback on the users movements and actions 90 times per second, which is the optimal rate for Virtual Reality games. The headset can track every movement the player makes, from looking around to jumping or crawling. The controllers specify the position and rotation of the user's hand with an impeccable precision. Each controller offers us 6 buttons as well as a touchpad. This variety allows us to replicate every movement or gesture the user wants to make and amplify his in-game experience. The 2 sensors can also track other real people and furniture around the player and will warn him if there is a possibility he could harm himself. The headset design guarantees comfort as well as enough space around the eyes to be used with glasses so that every player can enjoy the experience. A headset resolution of 2160 x 1200 guarantees a very high level of immersion.
- For hearing: Normal headset speakers connected to the Vive.
- For haptic feedback: HTC Vive controllers that allow the user to get a feedback by vibration.

All the signals will be generated/managed by Unity.

Targeting all senses of the player is not enough to immerse him/her inside the game. It needs to be done in a right way. The virtual environment itself needs to be convincing and has to behave in way that the player expects.

For that, the game technical achievement focuses in two main points:

- **Interaction** (mimicking the real case scenario and translate it into the virtual environment):
  - Searching/Exploring/Wayfinding/Traveling:
    - Short distances: Supported by the 3D tracking system of Vive. User can easily walk, run, jump,....
    - Long distances: Implementation of a teleportation algorithm.
  - Manipulation:
    - Almost everything in the scene is intractable.
    - Implementation of different realistic interaction techniques for different objects:
      - Doors, Drawers, keys, tools(Hammer, Saw, ...)
- **Physics**: First of all, the whole virtual world will be designed to respond as in a real-world mechanics, i.e. every object should have a real approximated mass and only earth gravity applying on it in case of no interaction. Unity will manage all the virtual environment physical reality and inter-object interaction. Then, the missing thing is the link between user physical quantities (forces,impulse,..) and the game environment. The algorithms that will be introduced are going to take care of representing the player as if he is an internal object that belongs to the virtual environment.



## The Big Idea (Bullseye)



**Main Goal: Solving puzzles and finding clues to move forward in the storyline.**

**Technical Achievement: Intuitive VR interaction in a physically simulated environment.**

The one word that describes “Unsolved” is: Immersiveness.

This game is not another showcase for VR or another VR Arcade game where you sit and shoot bad people. The goal of this game is to exploit VR capabilities to create an unforgettable experience for the player.

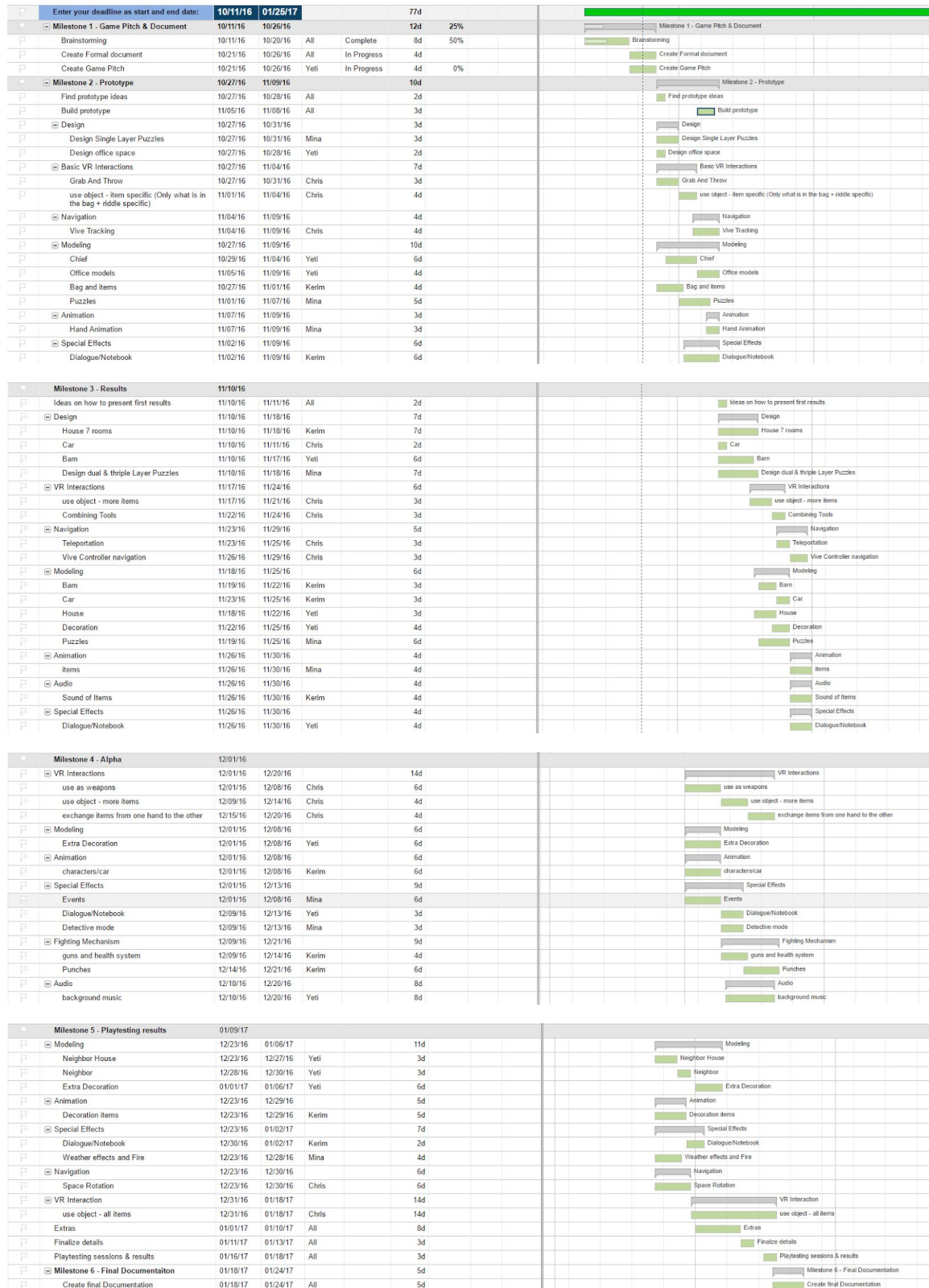
## Assessment

Unsolved has a storyline, suspense, thriller, action, logic and fun aspects. The game is classified under puzzles solving and riddles which makes its main target people are who love Sherlock Holmes, Amnesia, Case Closed anime and the real life escape room games. The game will allow the player to dive into a mysterious/violent real story that was investigated by police of Munich while standing in his living room. The main power of the game lies in its interaction techniques, physically simulated environment, immersiveness it offers with a thrilling background story and fun puzzles. Those are the core elements that should appeal to the player. What may not appeal to some of the players is the violent/horrifying aspect. If the player forgets about the real world and becomes eager to solve one puzzle after another in order to satisfy his curiosity, we consider the game to be a success.

## Layered Tasks

Functional Minimum	Your Low Target	Your Desired Target	Your High Target	Your Extras
<b>Interaction</b>	<b>Interaction</b>	<b>interaction</b>	<b>interaction</b>	<b>interaction</b>
Grab And Throw	Combine tools	Use as weapons	Use object - all items	Object specific animations
Use object - item specific (Only what is in the bag + riddle specific)	Use object - more items	Use object - more items		
		Exchange items from one hand to the other		
<b>Navigation</b>	<b>Navigation</b>	<b>Navigation</b>	<b>Navigation</b>	<b>Navigation</b>
Vive Tracking	Vive Controller navigation		Space Rotation	
	Teleportation			
<b>Environment</b>	<b>Environment</b>	<b>Environment</b>	<b>Environment</b>	<b>Environment</b>
Office		Barn	Neighbor House	Hospital
	House 7 rooms	Car		
<b>Special Effects</b>	<b>Special Effects</b>	<b>Special Effects</b>	<b>Special Effects</b>	<b>Special Effects</b>
Dialogue/Notebook	Dialogue/Notebook	Events	Weather Effects	Fire
		Dialogue/Notebook	Dialogue/Notebook	Water
		Detective mode		
<b>Audio</b>	<b>Audio</b>	<b>Audio</b>	<b>Audio</b>	<b>Audio</b>
	Sounds of Items		Background music	Voice Acting
<b>Puzzles</b>	<b>Puzzles</b>	<b>Puzzles</b>	<b>Puzzles</b>	<b>Puzzles</b>
Single Layer	Double Layer	Triple layer		
<b>Animation</b>	<b>Animation</b>	<b>Animation</b>	<b>Animation</b>	<b>Animation</b>
Hands	Items	Character/Car	Decoration items	Object specific animations
<b>Fighting Mechanism</b>	<b>Fighting Mechanism</b>	<b>Fighting Mechanism</b>	<b>Fighting Mechanism</b>	<b>Fighting Mechanism</b>
		Punches	Guns and health system	
<b>Modeling</b>	<b>Modeling</b>	<b>Modeling</b>	<b>Modeling</b>	<b>Modeling</b>
Riddles only, Case file, bag, bag items	Decoration, Chief	Extra Decoration	Extra Decoration	

# Development schedule (also available in a separate document)



## References:

1. <http://mysteriousuniverse.org/2014/09/the-mysterious-unsolved-murders-of-hinterkaifeck-farm/>
2. <http://hinterkaifeck.net/>
3. [https://en.wikipedia.org/wiki/Hinterkaifeck\\_murders](https://en.wikipedia.org/wiki/Hinterkaifeck_murders)