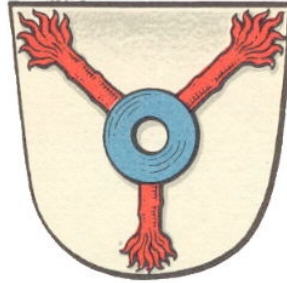


## **Jäger: The Hunt for Crazy Gert's Gold!**



### **1. Background**

In the late 1800s, the crazy Baron Gert Lotz von Wallroth, a wealthy bachelor of impeccable taste, lived on an eight-hectare estate. The townspeople of Wallroth called him "crazy" because of his obsession with cats. In fact, it was rumored he had no less than 500 cats on his estate! The Baron was somewhat of a recluse, and so not much is known about how wealthy he really was, nor exactly how many cats he owned.

As the years passed, Baron Lotz became obsessed with what would happen to his wealth after his passing into the next world. Having neither heir, nor relatives (that he much cared for, anyway), and even fewer friends, he decided he would hide his riches from the rest of the world. It is rumored that he constructed a labyrinth on his property in which to hide his gold and other riches. Furthermore, it is said that, shortly before his death, the Baron sealed his cats inside the labyrinth to "protect" his riches. Now, more than 100 years hence, the existence and exact location of the Baron's fabled labyrinth have still not been verified.

### **2. The Game**

Having just graduated from WPI, and with little else to occupy their time, our heroes, Hedi and Heidi, have decided to try to solve the mystery of Crazy Gert's Gold. They will either get rich from the finds they make, or die trying!

Hedi & Heidi first heard about Crazy Gert while doing their IQP at the Project Center in Frankfurt, Germany. They worked at a financial institution (N.B. Frankfurt is the banking center of Europe) on a project to design a multilingual user interface for clients from various European countries. While there, they fell in love with Germany, and so decided to return after graduation. This is not really important for the game though.

### 3. The Assignment

You will write code to provide a first-person experience for our heroes, Hedi & Heidi, to explore Crazy Gert's labyrinth. Armed only with a flashlight (isn't that the way it *always* is in horror games?), they must navigate through the dark maze of passages, collecting **gold pieces**. The goal is for you to collect as many gold pieces as you can, and then to exit the labyrinth.

### 4. Gummy Bears

Hedi & Heidi love **Gummy Bears** (an irresistible German sweet) and carry an unlimited supply with them. As the labyrinth can get quite confusing, they have decided to drop Gummies in order to help them remember their way. They only have *red*, *green*, and *blue* Gummies, and use one color to help them find their way back out of the labyrinth, and another to mark areas where they have already been (*e.g.*, dead ends). Then, when they walk into a new part of the labyrinth, if there is a Gummy there, they know they have been there before. When it is time to leave the labyrinth, they just need to follow the trail of appropriately colored Gummies. To remove a dropped Gummy, they must eat it off the ground (YUCK!).

### 5. Ghoulies

Because most of the cats (if there ever were any cats) have been dead for more than a century, Hedi & Heidi will need to avoid any Ghoulie remnants of their existence.

Throughout the duration of the game, the Ghoulies will move about the labyrinth in a pseudo-random manner. The only constraint on Ghoulie movement is that no two Ghoulies can occupy the same area. Therefore, Ghoulies will adjust their movements to avoid other Ghoulies. Of course, these are spirits, so walls do not get in their way. They cannot, however, leave the labyrinth.

If a Ghoulie appears in front of you, you must throw three Gummy Bears in the proper color order for that Ghoulie. Each Ghoulie has a three-tuple associated with it, denoting the order that Gummies must be thrown in order to appease it. Once appeased, the Ghoulie can finally rest in peace, and disappears forever. For example, if a Ghoulie with the triple  $\langle R,R,G \rangle$  appears, you must throw a red Gummy, followed by another red Gummy, followed by a green Gummy, and the order matters. This must be done quickly; otherwise the Ghoulie steals some pieces of gold from you, and disappears into an adjoining room of the labyrinth. The gold pieces stolen by the Ghoulie are magically redistributed to a random location in the labyrinth.

## **6. Glowing Mushrooms**

The labyrinth is a damp place, just perfect for mushrooms to grow! There are two types of mushrooms that grow in the labyrinth, good ones and bad ones. Unfortunately, they look identical. If you come across a mushroom, you can pick it up or leave it alone. Good mushrooms repel Ghoulies, and bad mushrooms (you guessed it!) attract Ghoulies. If you pick up a good mushroom, Ghoulies will choose to move away from you, and any Ghoulies that are in a room you enter will flee. If you pick up a bad mushroom, however, Ghoulies within a certain range of you will go towards you. While in an attractive-mushroom state, Ghoulies don't mind being near each other, so you may find yourself with multiple Ghoulies to appease. The power of the mushrooms only lasts for a few seconds. If you pick up another mushroom while already holding one, it replaces the first one, and the clock starts again. Once a mushroom is picked up, it cannot be dropped.

## **7. Two Heads are Better than One**

You will add multi-player support to your game. You only need to support two players, as there are only two heroes in this story. Your code should allow for either hero to throw Gummies at Ghoulies. So, for example, it could be that Hedi throws the first Gummy and Heidi throws the next two, thereby appeasing the Ghoulie (assuming they are the correct color and order). Or all the Gummies might be thrown by a single player, while the other player keeps a watch for other Ghoulies that need appeasing.

## **8. The Boss**

As our heroes walk around the labyrinth, at some point they come to the main storeroom where Gert has hidden most of his gold. If you can find this jackpot room, untold riches await you! The problem is, there is one mean boss guarding the loot! Defeat the boss to claim your riches. But, you must still find your way out of the labyrinth before earning the right to claim having solved the Mystery of Crazy Gert's Gold!

You are free to come up with any plausible actions you want to require of the player in defeating the Boss. Just keep it within the storyline (and make it funny)!

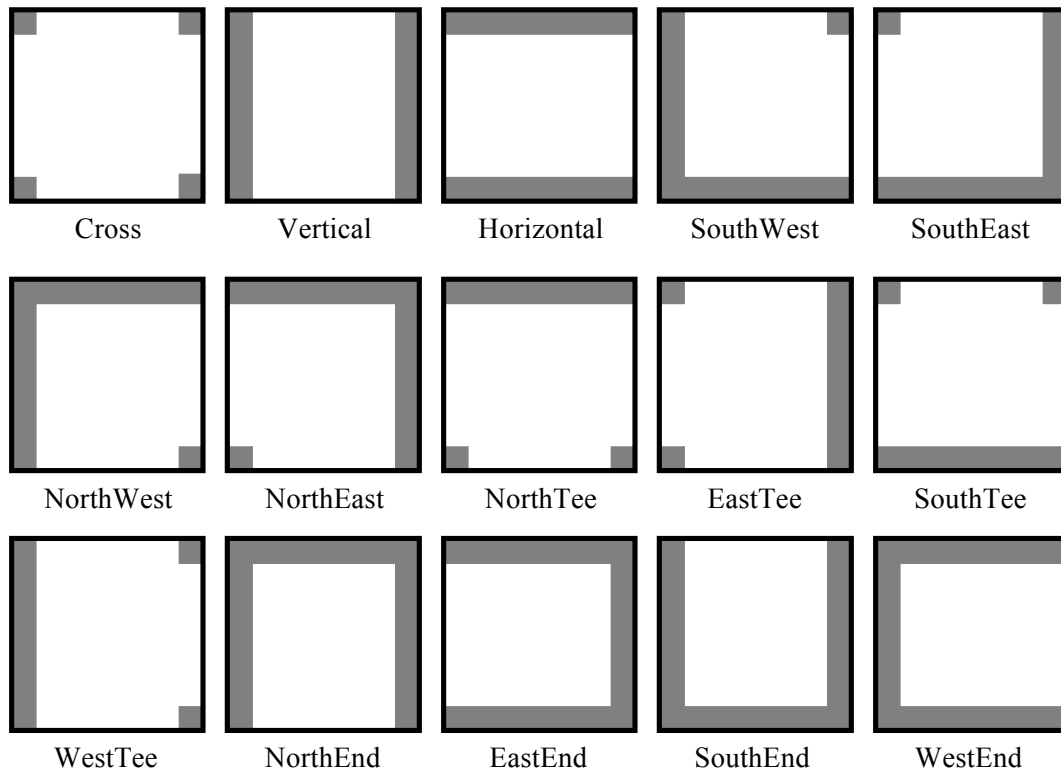
## **9. Look and Feel of the Game**

Within the parameters of the game described here, there is still a wide range of choices that each team will need to make. This means that each resulting game will look and feel very different from any of the others. Some open questions are:

1. What does the labyrinth look like? Could be a “typical” dungeon theme, or could be ice caves, or even a forest path.
2. What do the Ghoulies look like? Are they cute? Ugly? Scary? Sad?
3. What does the Boss look like? Is he/she dumb? Cunning? Fire-breathing?
4. What do Hedi and Heidi look like? So many choices...
5. What do things sound like? What sounds will you need for the game?
6. How will the player execute actions? Keyboard? Mouse? Both?

### 10. The Labyrinth

The labyrinth consists of a grid layout of  $M \times N$  cells. The list of possible cells (Figure 1) is made up of types of passages that fit together to form a "legal" labyrinth.



**Figure 1: Legal cells.**

Each time a new game is started, a random number seed will be used to randomly generate the layout of the cells. Each cell must be reachable from every other cell. One edge cell is randomly chosen to be the labyrinth entrance/exit.