



PROBLEM

Although eye-tracking has been used in gaming for many years, there aren't many incorporation between game mechanics and this technology. These features are almost non-existent in VR gaming industry since only recently companies start to put eye-tracking into VR headsets.



RELATED WORK/ MOTIVATION

As mentioned in the introduction, there is no game utilize the eye-tracking system with game mechanics like this project. "Don't Look", "Don't Look Away", "The Dark Pictures - Switchback VR" are the only three. The first two aren't VR game and don't have eye-tracking. "Don't Look" has a similar idea but doesn't have good gameplays judged from reviews. "Don't Look Away" is a multiplayer game which takes the opposite approach. Only the last one utilizes eye blinks with game mechanics. Thus, I think our game design is very unique.

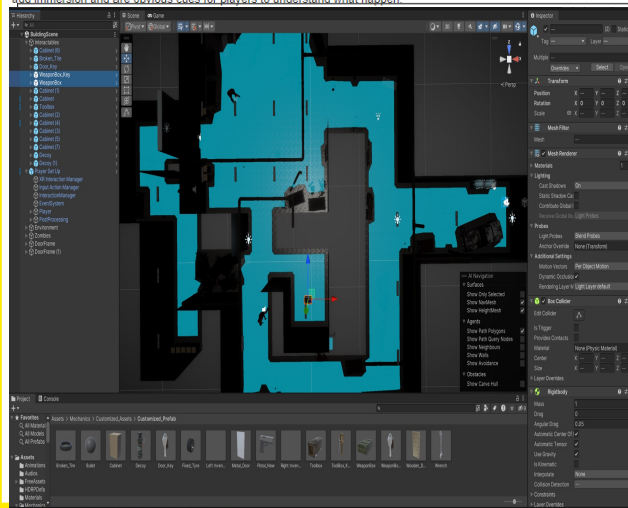
YOUR APPROACH/ SOLUTION

In our game, the player has to traverse through the building, avoid or fight monsters, find all sorts of tools, solve puzzles and escape. The player will be forced to combat his fear and complete difficult tasks while under the pressure of monsters and time. Since the player's flashlight is controlled by his eye gaze, he needs to avoid making eye contact with monsters even during close contacts. In addition, there is a sanity meter that depletes as times ticks on. Once the health point or the sanity go to zero, the player fails to escape the nightmare.

REFERENCES

METHOD/ PIPELINE/ ALGORITHM/ PROCESS

Game Mechanics means the steps to achieve win or lose condition. The ultimate goal is to find a wrench and fix the tire of a broken car. Secondly, environment contains maze, points of interest, monsters placement, lighting, and decoration. By putting keys on beds and in cabinets, I make players search them intuitively. Thirdly, interaction has to be intuitive, smooth, and fun. For instance, metal doors suppose to move slower compare to wooden doors. Drawers and cabinet doors should only be grabbable by pulling handles. Finally, animation, visual effects(VFX) and sound effects(SFX) add immersion and are obvious cues for players to understand what happen.



RESULTS

We accomplished our goal of implementing the game on a Quest Pro. Alpha testers think this game is very scary, and the gameplay is novel, fun, and stressed in a good way. Players rate most of the interactions and animations smooth and intuitive. They also think our SFX and VFX help to understand what happened and add tons of horror elements. By only lighting where the eyes look at, I eliminate the potential VR motion sickness brought by the peripheral vision. This is a huge advantage. However, the player gets confused on the types of keys due to their lack of characteristics. Although each key looks different visually, players don't know which key corresponds to which box.

