Designing a Simulation Game on Fire Evacuation Procedure in Tall Buildings

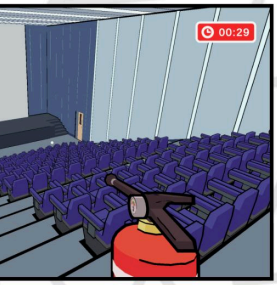
Mohamad Naufal
Universitas Multimedia Nusantara
Indonesia

IMDES 2025 STUDENTS

Vertigo Heat

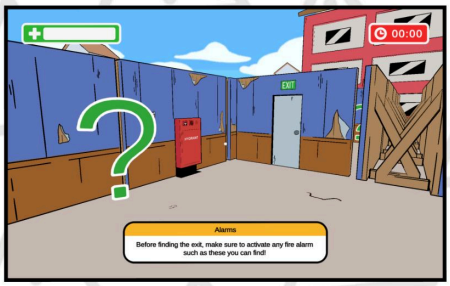
Is a two-level game that simulates a fire escape scenario in a high-rise building. The game is played on a first person perspective to immerse the player in the scenario. Elements taught in the game include fire extinguisher usage, smoke evasion, and escape route navigation.

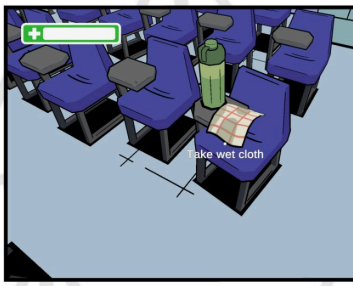
Development Process

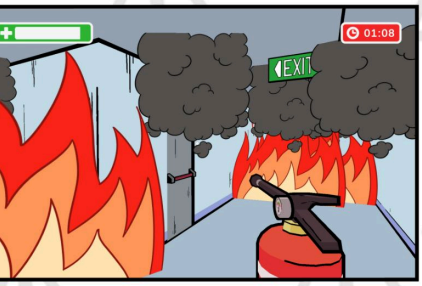


Inspiration

Before any development starts, **research** is done. Information such as audience preference, fire escape protocols, opinions of the fire department, and game development pipeline are learned to make sure that the game is built on solid data.









Ideation

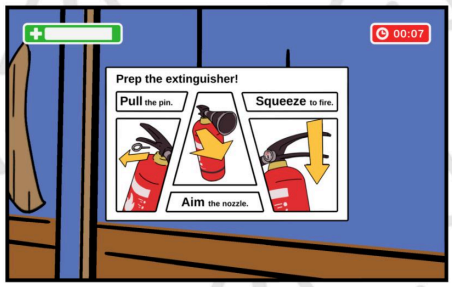
Information found are then **developed** into game elements. Data regarding fire escape are turned into game mechanics while audience insights built on the delivery of said mechanics, such as what art style the game should have or how difficult the game should be.

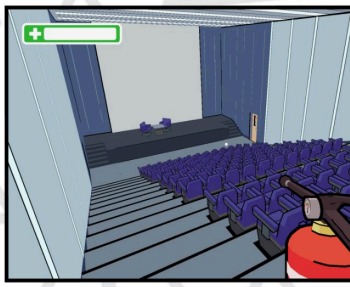




Implementation

This section deals with how the game **fits the audience**. alpha testing is done to make sure that the game's development can go in the proper direction, before each element is finalized. The game's final quality is then evaluated in a beta test.





Try it out

Play Straight on the web.

No download required, click "Run Game" on the page and start playing! (tested on windows)

Link: https://gankdroid.itch.io/ta-naufal



ID 479 Designing a Simulation Game on Fire Evacuation Procedure in Tall Buildings

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Fire emergency cases happening in Indonesia has been increasing annually from 2018 to 2023. In 2023, the amount of cases reported reached a new record high. This shows that in Indonesia, the risk of fire emergency is becoming more apparent. Indonesia also hosts universities with campuses classified as tall buildings, these classification of buildings require a more complex fire evacuation procedure. According to a survey spread to respondents of university students in the Jakarta Metropolitan Area, the existing educational contents on fire emergency procedures are considered to be uninteresting. From the presented problem, a simulation game on tall building fire evacuation procedures will be designed. The game was designed with the human-centered design method which consists of three stages namely inspiration, ideation, and implementation. In the inspiration stage, research on the audience demographic consisting of university students in the Jakarta Metropolitan Area, and research on fire evacuation procedures are done. The data extraction techniques used in this stage are questionnaire survey, focus group discussion, expert interviews, existing studies, and literature studies. In the next stages, the game is then developed. The development process was done using Unity, Blender, Krita, and Visual Studio Code. Beta testing is then done to assess the game's quality and effectiveness. In conclusion, it is found that a simulation game has the potential to be a more interesting alternative media for fire emergency education to university students, but the difficulty that lies in video games can also potentially hinder the audience from fully learning evacuation procedures.