



**UNIVERSITI TUNKU ABDUL RAHMAN**

**FACULTY OF INFORMATION AND COMMUNICATION TECHNOLOGY**

**UCCD3084 GRAPHICS PROGRAMMING FOR EXTENDED REALITY**

**GROUP ASSIGNMENT**

**Project Title:** Marker-based AR Fire Extinguisher Identification Guide

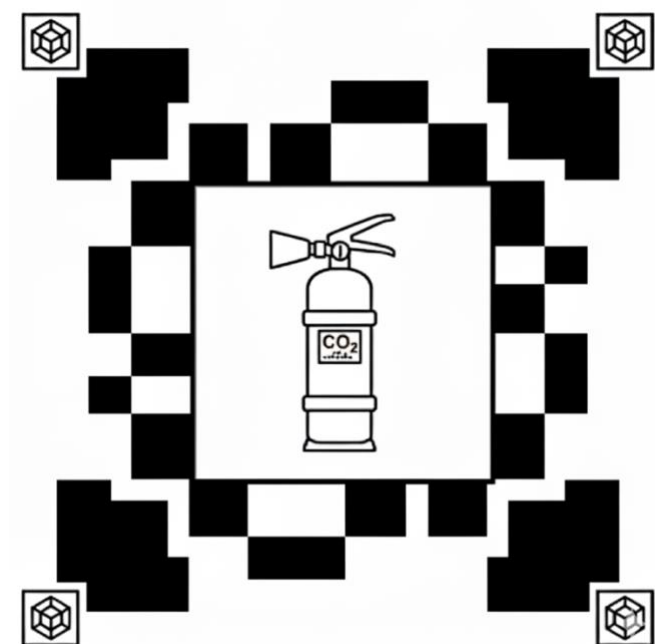
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## 1.0 Visual Diagrams (screenshot)

Marker



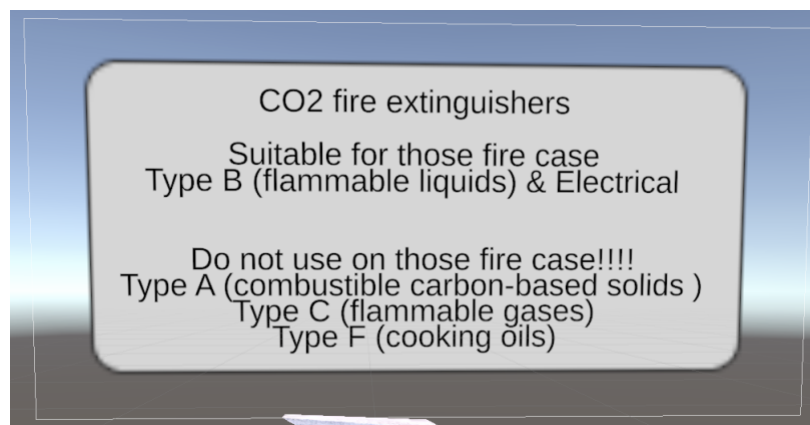
Marker Detection



## Fire extinguisher



## Info panel



## **2.0 Reflection**

This project provided a hands-on introduction to the entire augmented reality application development process. The most important thing I learned was how to create interactive features without writing traditional code by using Unity's visual scripting. I discovered how to make on-screen buttons rotate 3D models by connecting nodes and using variables. By using the latter to make an information panel float next to a fire extinguisher in the real world, I was also able to comprehend the distinction between world-space UI and standard on-screen UI. Another crucial ability was using spatial audio, which enhances the sense of immersion by making sounds seem to originate from the model itself.

Learning how to debug Unity-specific problems was the biggest obstacle I had to overcome. One significant problem, which I discovered was brought on by incompatible material shaders, was that the 3D model appeared bright pink. I fixed this problem by upgrading the project's materials to the Universal Render Pipeline using Unity's tools. Another big problem was a script error that happened when the script tried to control the fire extinguisher before it showed on screen. I corrected this by adding a null check to the visual script. This helped me understand how important it is to make sure an object exists before attempting to interact with it. So, I have overcome these challenges and it taught me a lot and improved my ability to solve problems in the Unity engine.

## **3.0 References ( Online Asset used)**

Fire Extinguisher

<https://assetstore.unity.com/packages/3d/props/fire-extinguisher-21147#description>