

Emergency AR

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Abstract

Our team developed an AR-based fire training app prototype to allow users to learn fire training to practice their skills and enhance their preparedness. This will reduce the costs of live-fire exercises and allow users to train more frequently.

Background

Fire training for the general public is an essential component of fire safety education. It helps people understand the risks associated with fires, the importance of fire prevention, and how to respond in the event of a fire emergency. Fire training for the general public typically involves providing information on fire safety measures, such as installing smoke detectors, having an escape plan, and practicing fire drills. It may also involve practical training on how to use fire extinguishers and other firefighting equipment. Fire training for the general public can be delivered through various means, such as community outreach programs, online resources, and hands-on training sessions. By educating the public on fire safety and providing them with the necessary skills and knowledge, we can reduce the number of fire-related incidents and ultimately save lives.

Methods

To develop the AR-based fire training prototype, we conducted extensive research on firefighting procedures, equipment, and scenarios to ensure that the prototype accurately represented real-world challenges and scenarios. We also consulted with firefighting experts and end-users to gather feedback and refine the prototype's design and features. The prototype was developed using advanced AR technology methods to provide a realistic virtual environment that is intuitive and easy to use. The design of the virtual environment and the user interface of the prototype was carefully crafted to ensure that the end product is accessible and user-friendly for firefighters with different skill levels and backgrounds.

Design principles

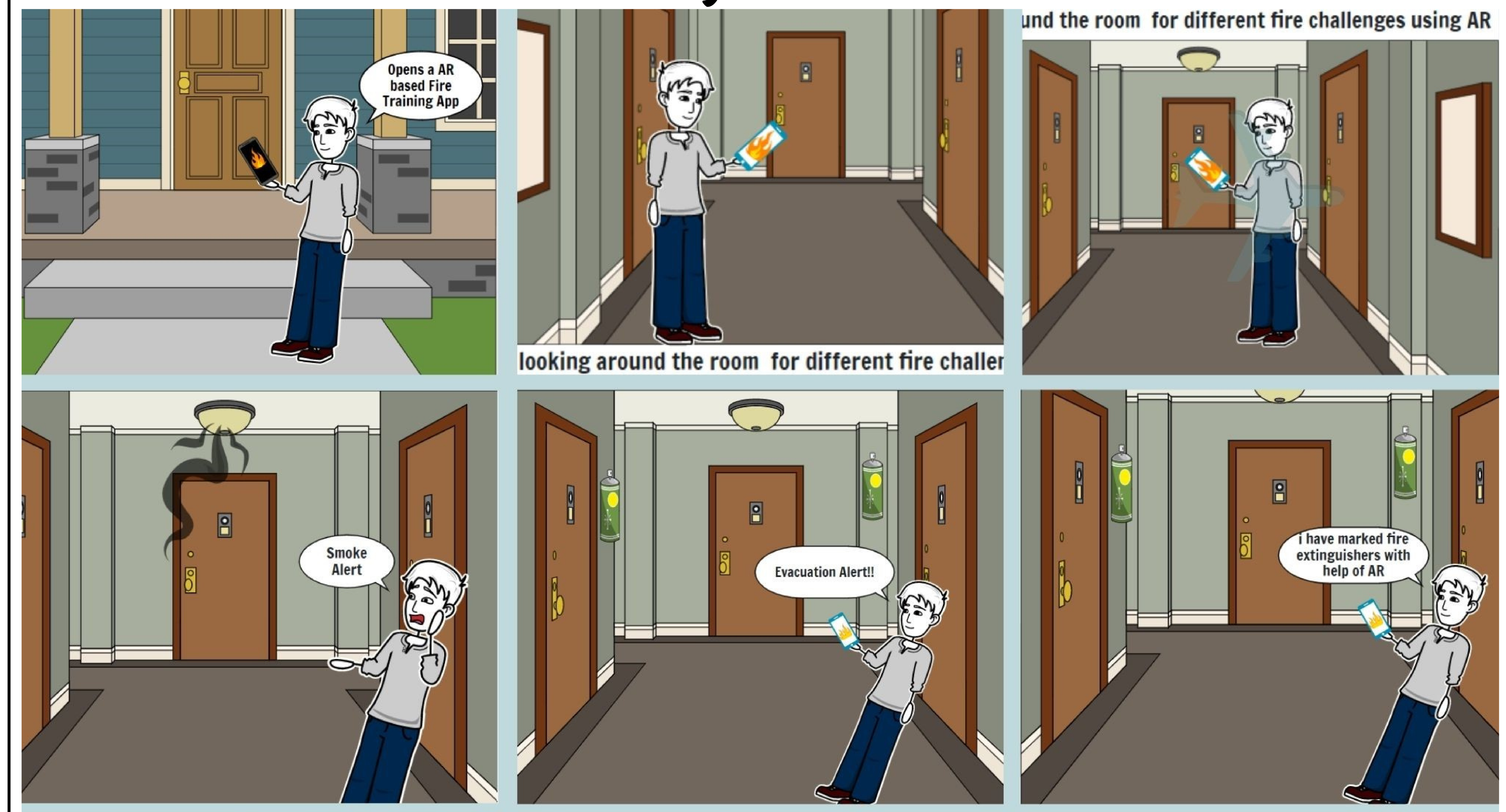
Attentional Bias, Framing Effect, Availability heuristic, Depth of Processing

- Immersive simulations for deeper learning.
- Customized training experiences for diverse users.
- Minimize bias through diverse scenarios and personnel.
- Avoid framing effects with an objective presentation of information.
- Address availability heuristic with diverse scenarios and equipment.
- Incorporate depth of processing with clear instructions, feedback, and active experimentation.

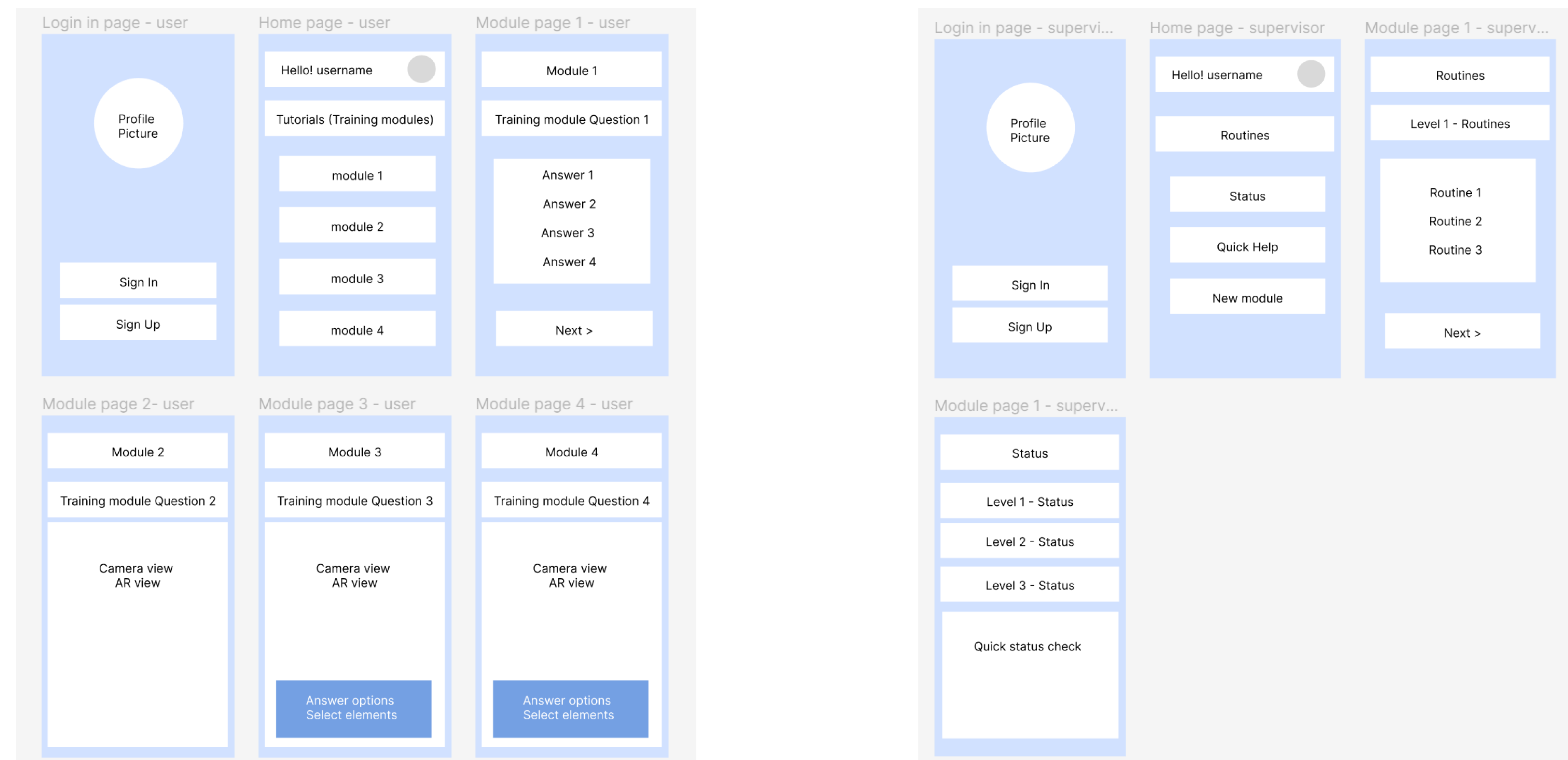
Results

The Interview with the fire Marshal and research on VR technology in fire safety education indicate that a VR fire training app prototype has the potential to revolutionize fire safety education. The prototype provides an immersive experience that simulates a fire emergency, enabling users to learn how to respond in a safe and effective manner. The app's interactive scenarios improve the effectiveness of fire safety training, making it more engaging for users. Overall, the prototype presents a promising opportunity for individuals and organizations to enhance their fire safety knowledge and skills.

Storyboards



Wireframes



Conclusion

The AR-based fire training app prototype developed by our team offers an effective and safe training experience for firefighters. The app's advanced AR technology, combined with careful design and feedback from experts and end-users make it an innovative and valuable tool for firefighting training and preparedness.

References

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- Haosen Chen, Lei Hou, Guomin (Kevin) Zhang, Sungkon Moon, Development of BIM, IoT and AR/VR technologies for fire safety and upskilling, Automation in Construction, Volume 125, 2021, 103631, ISSN 0926-5805, <https://doi.org/10.1016/j.autcon.2021.103631>.