

# Research report: a mobile game based on virtual reality tools to inform the population about the nuclear power plant's emergency plan

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With the growth and expansion of the Brazilian's nuclear power plants, is important that the population knows the benefits and safety measures of this type of energy. The emergency plans of the Brazilian PWR *Angra 1* is a set of instructions that locals should adopt in case of an eventuality [1,2,3]. On the other hand, virtual reality applications are used as a trying to promote a more playful, engaging and motivating way of communication and learning. Looking forward at this new technology as a form of the diffusion of science, *Instituto de Engenharia Nuclear* (IEN – RJ) has performed many researches [4] using virtual reality tools. In this line of thought, this multidisciplinary and interdisciplinary work aims to use VR technology in a 3D computer game to teach about nuclear energy, its benefits, and risks, as well as aspects related to the security of installations and population. To this end, an educational game for mobile devices will be developed with the programs SketchUp make (Figure 1) and Unity3D Engine (Figure 2) allied with the Microsoft Visual Studio Community 2017.

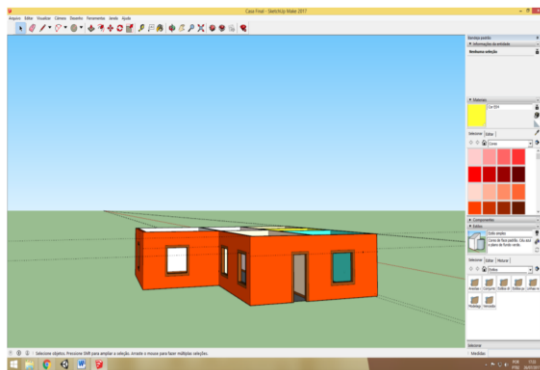


Figure 1. A house similar to the pattern founded in Angra dos Reis, Rio de Janeiro, been modeling to the game.

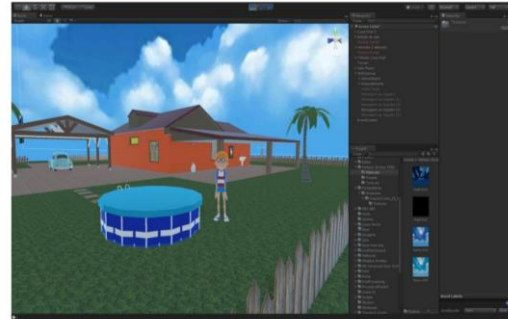


Figure 2. The game “O Plano de Emergência” in the game engine Unity 3D.

Figure 3, shows an example of the gameplay.



Figure 3. Gameplay of the game.

This project represents a strategic option to spread important information about the nuclear energy and its applications for the public. Once, because it's was fully design for the Android Mobile system, that is the most used system at the world and that game could be done without the need of a computer. In parallel the facility to be incorporated at websites and schools, because its gameplay has easy-to-understand elements, making the children always motivated to play with their friends and family.

## References

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