

Multi-User Active shooter response for University Campus Evacuation

line 1: 1st Sri Teja Bodempudi
line 2: *Department of Computer Science*
line 3: Bowie State University
line 4: Bowie, MD, 20715, USA
line 5: sbodempudi@bowiestate.edu

line 1: Dr. Sharad Sharma
line 2: *Department of Computer Science*
line 3: *Bowie State University*
line 4: Bowie, MD, 20715, USA
line 5: ssharma@bowiestate.edu

I. ABSTRACT

This game is designing to train people how to handle active shooter situation in a computer science (CS) building in Bowies State University. This game theme is: there will be a active shooter in the CS building and will try to shoot the people in the building. Now the users will enter the environment from multiple devices, as a policemen or common person in the building. If user enter as a policeman, then that person will have access to gun. If user choose a role to enter as a common person, user will have no weapon to attack the enemy but get to throw the objects on the enemy to harm him, and also user get a chance to practice run, hide and fight activity. For the common person the aim of the game is to safely exit the building without getting killed by the enemy. If the user enters as a policeman, the aim is to eliminate the enemy by following certain protocells.

II. GOAL AND OBJECTIVES

The goal of this project is to create a multiuser active shooter game for Bowie State University campus. This is help full to the users to train for the situation. To perform a mock drill for these kinks of situation in the real world it is hard and expensive. But by using multiuser virtual platform, it is easy to create situations like these. For performing mock drills, virtual platform is the best platform for saving the time and money. This multiuser game is designed to practice Run, Hide and Fight, during active shooter situation.

III. MODELING

This project is developed in Unity 3D. The modeling of environment is edited and developed in sketch up. Ones the editing is done the campus is imported into Unity asserts. An account is created in photon cloud. A project room is created with the project name, in the photon cloud. Ones the room is created, photon will create an ID. This ID will be saved for reference. In the Unity, photon asserts are loaded into asserts store. Ones the photon asserts are loaded successfully, Unity will let user to add the photon ID, this will let Unity access to Photon cloud. Photo is responsible for data sharing between users. With the necessary code attached to the objects in the unity will enable multi player mode. As shown in the figure below. Ones the application is built successfully an EXC file will be generated. By having this file in a compute will let use to access the application.



Fig1. Life cycle of the application

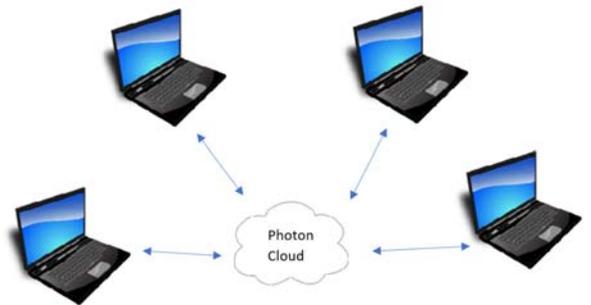


Fig2. Explaining how data transfer happens between multiple devices with the help of Photon cloud.

IV. PROGRAMMING

This application is developed for multiuser environment. Achieving multi user is little hard to achieve, by using photon cloud service this became little easy. Photon cloud will act as a data exchange platform between the cloud users. Sometimes there will be a chances loosing internet connectivity, for those situations there is offline seen created. When connecting to the system user will get an option to select offline mode or online mode as shone in the figure. Ones the user select the mode, then the next window will popup with two more options to select they are police and people as shone in the figure. After this window the loading window will popup. Ones the user select the online, the application will try to reach photon cloud. If any user already connected to the cloud then the data will get transferred to the new user and will let the user start the scenario from the same scenario.

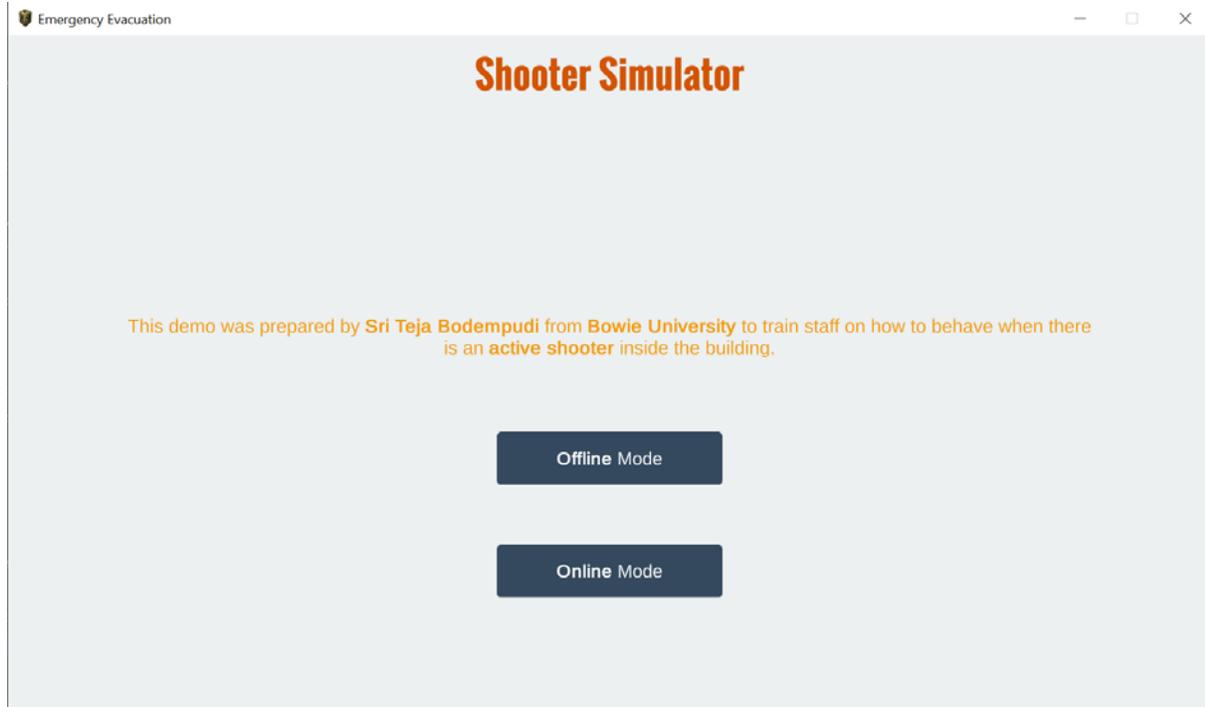
V. CONCLUSION

This application is able to generate the multiuser game successfully. Achieving the multiuser networking is the hard task to achieve. It involves lot of code editing. The precaution needs to be taken is, this application will run on the open internet network but not in a network with firewalls turned on. In future the application will be developed in the more advanced level with the better animations to make the environment more realistically.

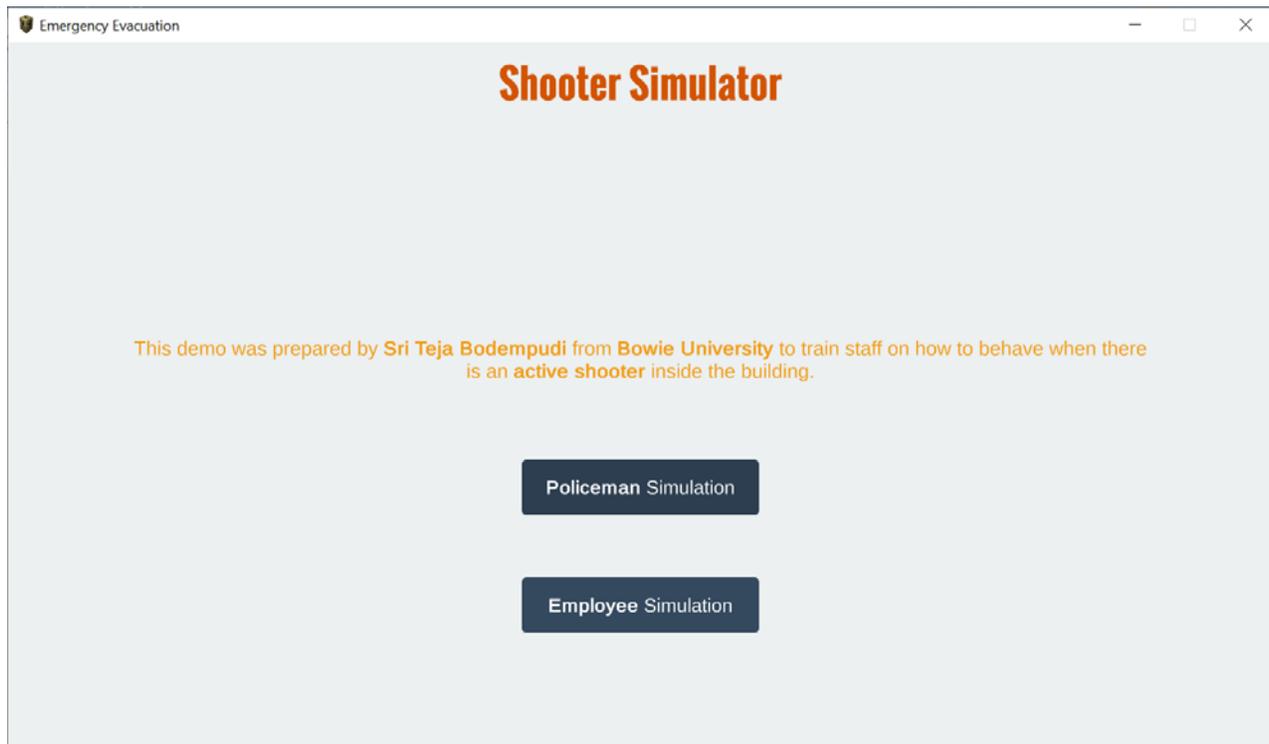
VI. ACKNOWLEDGEMENT

The authors would like to acknowledge the support of the VR Laboratory at Bowie State University. This project is done in the part of the class project.

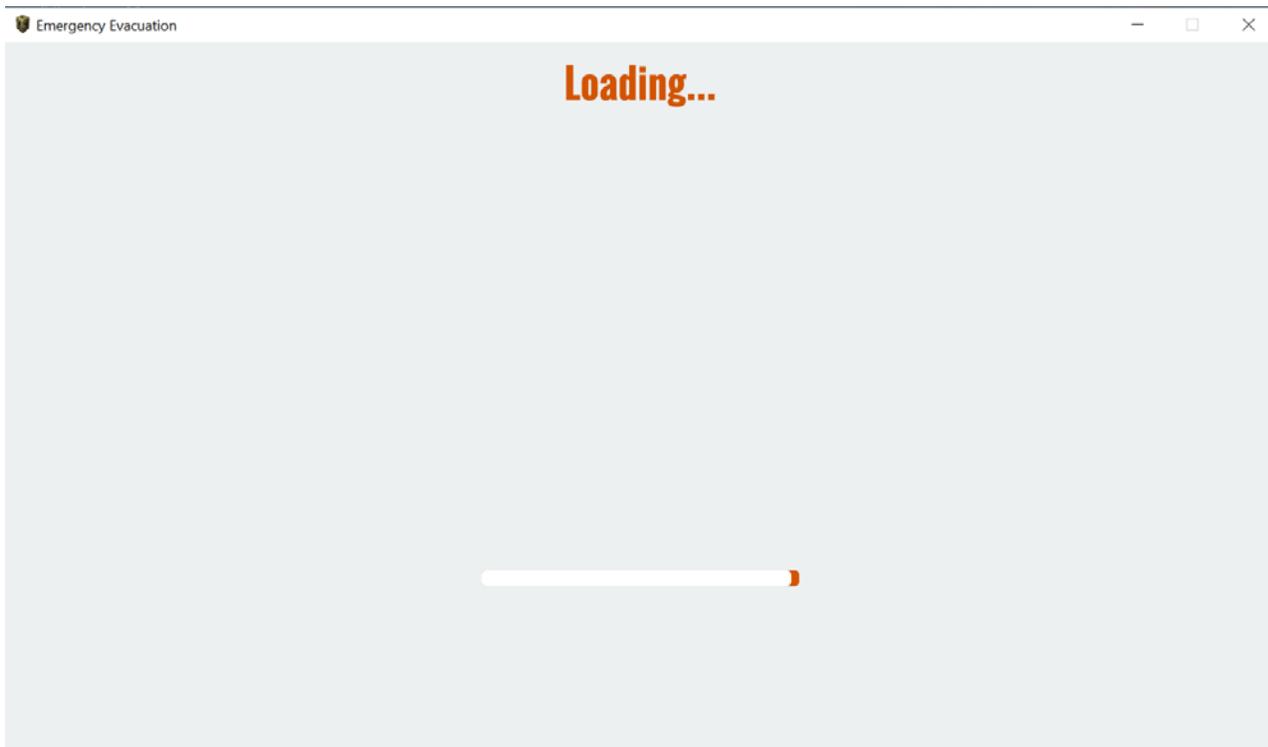
VII. SCREEN SHOTS



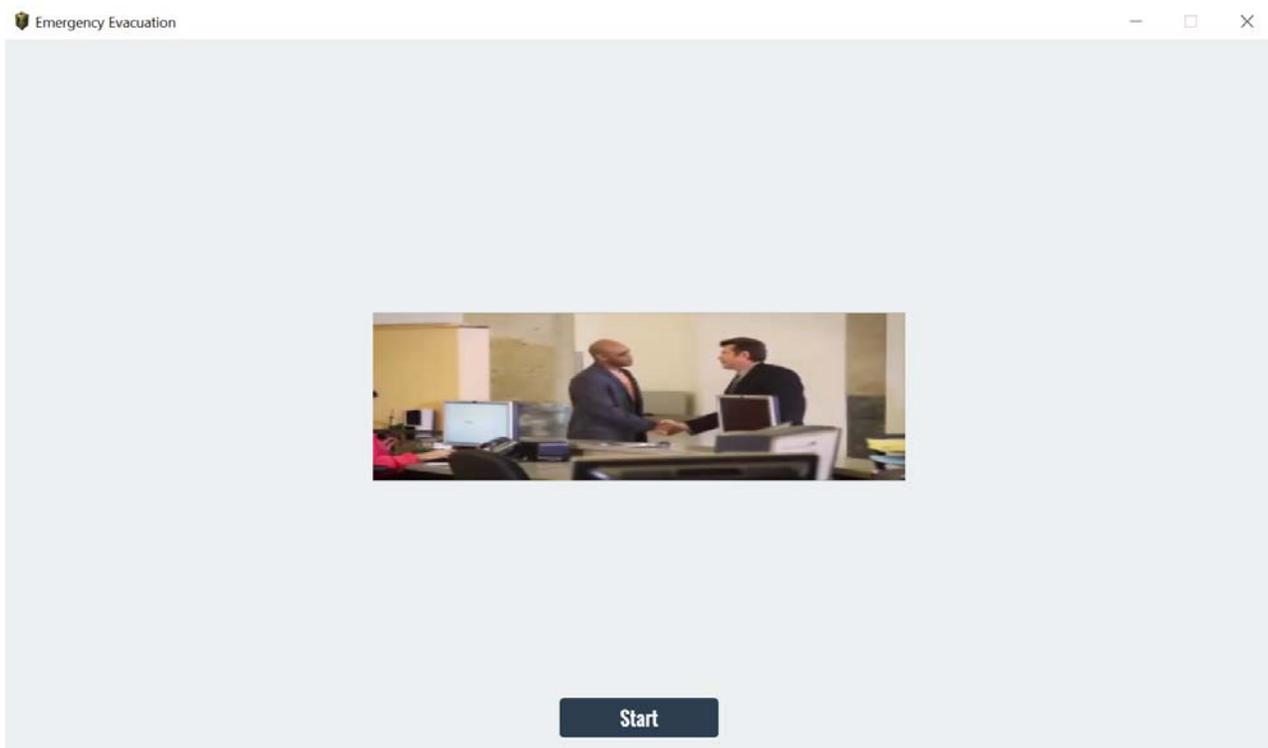
User having the options to select Online Mode or Offline Mode.



Selecting the role of the user in the environment.



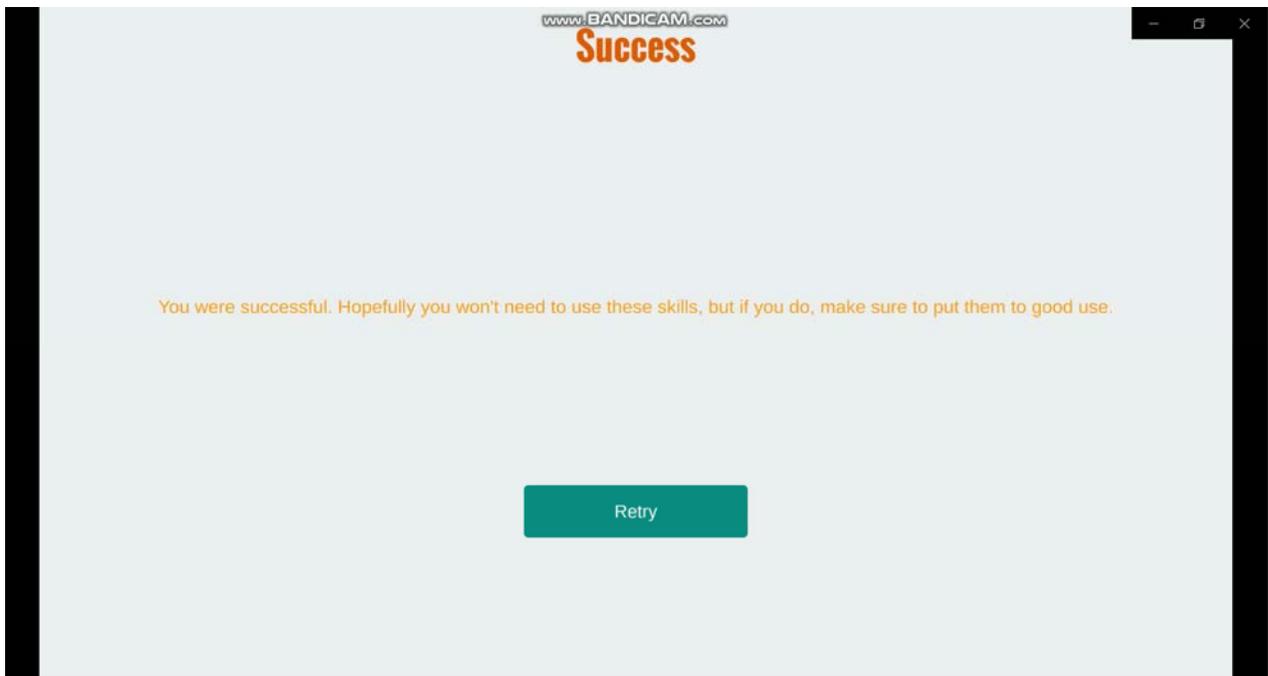
Loading screen for loading application.



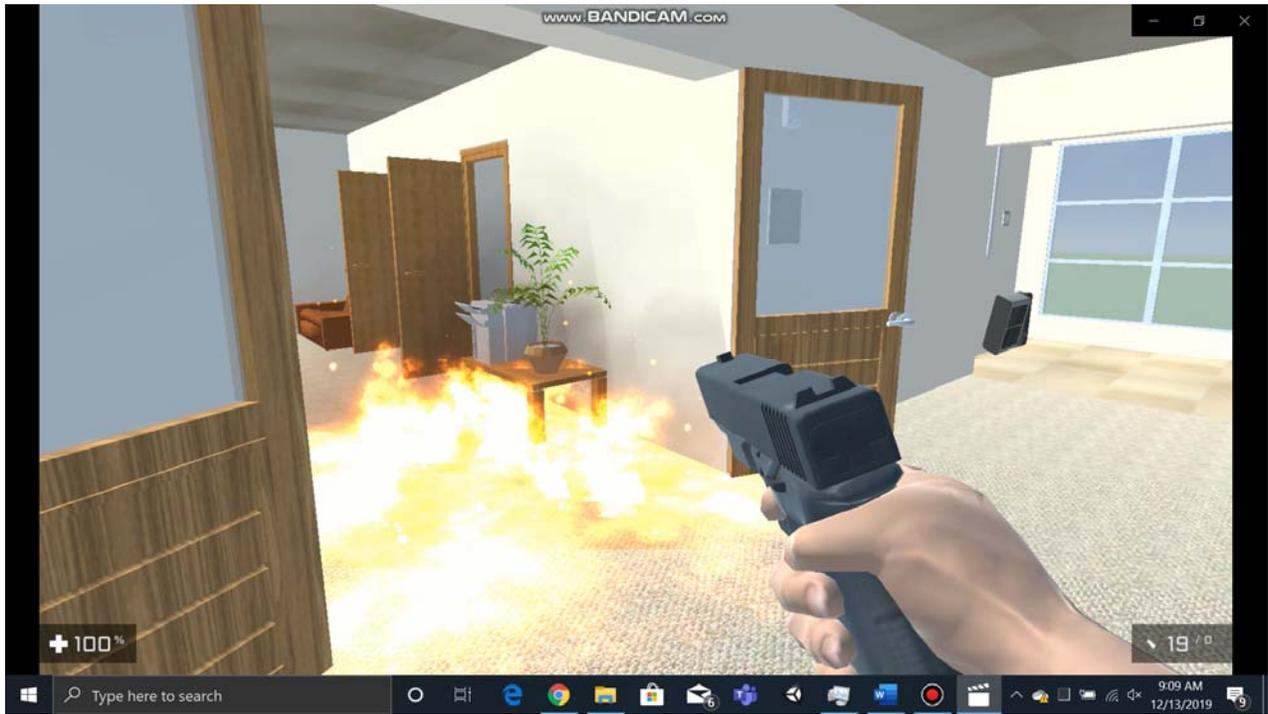
Playing Run, Hide and Fight video.

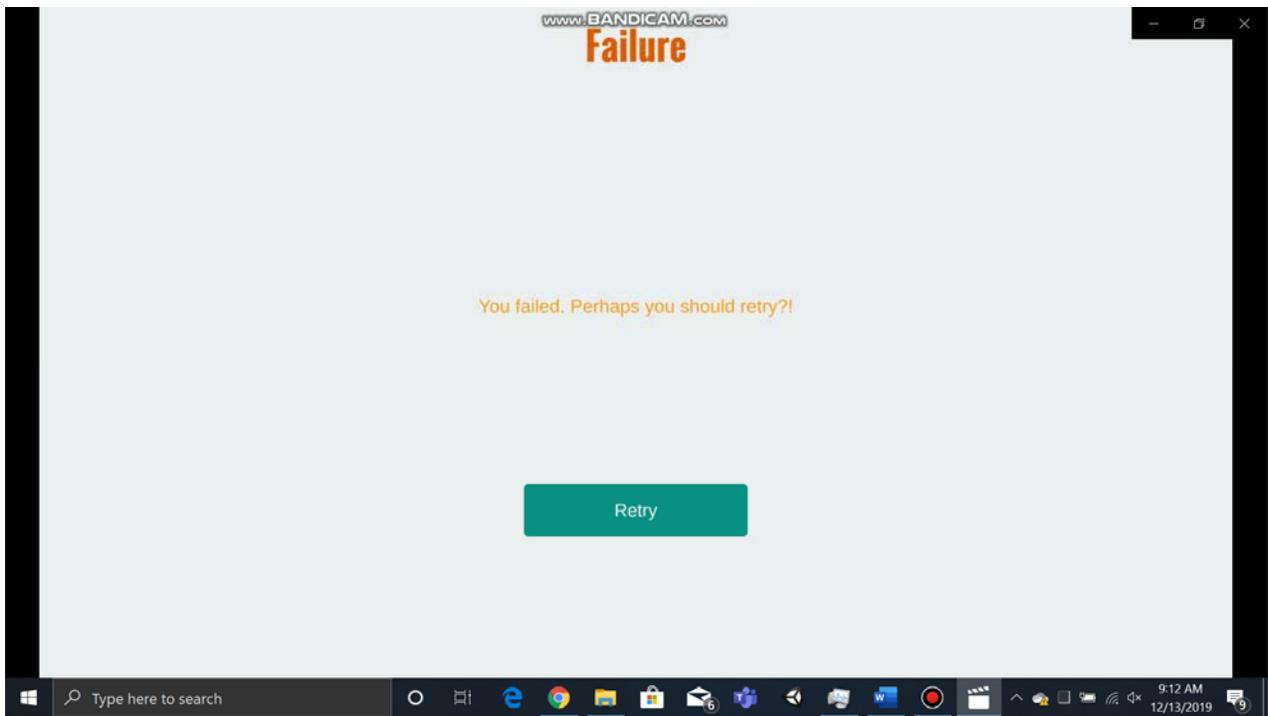
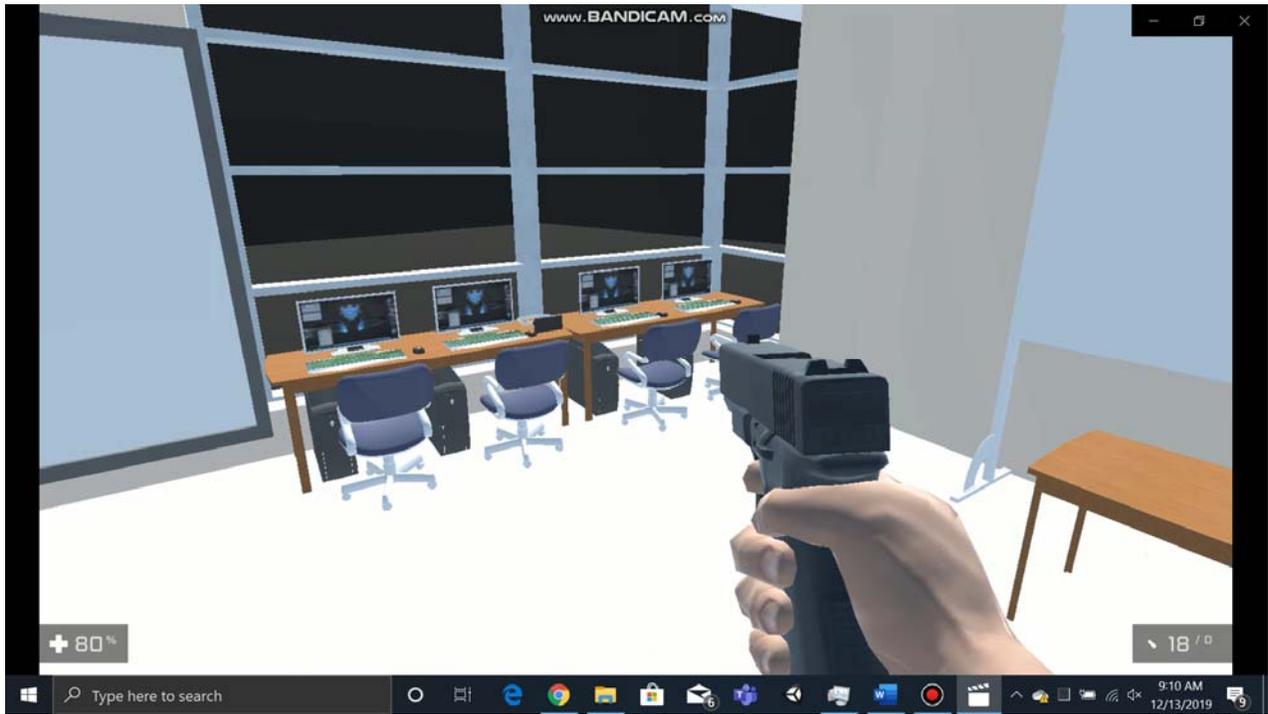


Enemy attacking User.



Successful screen appearing after eliminating user successfully.





Success

You were successful. Hopefully you won't need to use these skills, but if you do, make sure to put them to good use.

Retry