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Specification Document

The Helmet Convincer project is a VR application designed to persuade those who use it to wear a helmet through simulated bicycle crashes and a comparison of injuries.

The program should run on a portable, VR platform such as a GearVR, Oculus Go, etc. so that the demonstration is capable of being moved around and set up easily. Thus, it should be relatively simple in terms of graphics and operation. It should also be rendered in an open-world, 3D environment with the user on a bicycle and numerous obstacles for the user to try and avoid, or crash into and enter the death screen. Once the user crashes, the program should display how the user crashed along with what kind of injuries they would have sustained both with and without a helmet. The game should have a simple reset button so it can be quickly started over for the next participant.

As for how the user interacts with the program, input will come from two sources. The first is the device itself, which should have at least a reset button to start the simulation over again. The second form of input will be from an Arduino that is connected to a physical bicycle, to increase realism. As the Arduino is programmable, the input from it can be defined by the developer to make it as easy as possible to integrate. The Arduino has two sensors for both of the inputs the bike has to offer, the steering and pedaling. Those should be used to control the bike the user will be riding in the simulation.