

Abstract

Based on the research conducted by Barret, Brooks, and Wiederhold, it has been shown that the biggest barrier in the use of virtual reality is cybersickness. Cybersickness is a series of unpleasant symptoms, such as eye fatigue, headaches, nausea or even vomiting, which are caused by exposure to the virtual environment and can last from a few minutes to several days. According to Rebenitsch and Owen, explained that it was estimated that around 20% to 80% of the total population experienced cybersickness to a certain extent. Based on these problems a virtual reality roller coaster simulation was developed to find out or identify what caused cybersickness, and how to reduce its effects. This simulation displays a roller coaster area that follows the track. Then there are settings in the simulation to reduce the effect of cybersickness with several methods applied, and it is expected that users can run simulations longer. To reduce the effects of cybersickness, there are 6 methods that are applied, namely adding visible paths, minimizing the point of view, increasing fps, wearing an anti-nausea bracelet, using a fan, and taking the medicine dimenhydrinate. Based on the test results, the roller coaster simulation has been proven to be able to identify cybersickness, then all methods are also proven to reduce the effects of cybersickness and the best method to overcome the effects is with the drug Dimenhydrinate.

Keywords: virtual reality, cybersickness, simulation, roller coaster