

ABSTRACT

Sport is a human movement activity that is useful for maintaining health in its implementation. Exercise is also one of the mandatory activities carried out by humans today. In this modern era, static bicycle sports are one of the alternative sports that are favoured by sports lovers. Where users can use the static bike indoors and in that place. Along with the development of hardware and software technology, technology has emerged that develops static bicycle tools with applications that will display the virtual world using certain sensor components with the term "Virtual Cycling".

Virtual Cycling technology is an alternative in today's digital era, where users can ride static cycling by enjoying visuals in an attractive 3D virtual artificial world. Virtual Cycling technology was developed for entertainment purposes, and to provide a different experience in virtual cycling activities. Virtual Cycling Technology named "GOWES" is part of a joint project of several students and lecturers between departments at Telkom University. Virtual Cycling technology develops a static bike with applications that create a virtual world. By using Cadence, Speed, and Heart Rate sensors that function as static bike drivers in order to influence gait and function to provide visuals of the user's heart rate in the Virtual Cycling application.

From the results of several sensor performance tests used and analysing the system that has been set, that the performance of the results from the installation of Cadence, Speed and Heart Rate sensors for Virtual Cycling technology can meet the specifications desired by the author. Although there are still some results from the sensor value data that appears in the visualized application that has not touched the number that matches the actual value due to factors such as the variable speed in the calibration test which only differs by a few seconds so that the response received from the sensor changes every second. Thus, the application can provide visuals of Cadence, Speed and Heart Rate sensors for Virtual Cycling technology.

Keywords: *Heart Rate, Sensors Cadence, Speed, Sport Static Bike, Technology, Virtual Cycling.*