

ABSTRACT

This Microcontroller and Interface Practicum leads to this practical module which is filled with material in the introduction of various types of microcontrollers and sensors along with the implementation steps, but as a result of the survey, as many as 41 people out of 83 students took or did not take the microcontroller course. and the interface from having trouble and distinguishing the pins in one of the microcontroller circuits with the sensor module is like connecting the pins on one of the sensors to the pins on the microcontroller. Therefore, one of them is by utilizing augmented reality technology as a learning medium in practical activities.

In this final project, an application using augmented reality technology is made, one of which uses an android smarphone as a learning medium for the microcontroller and interface practicum module. This application will display a 3D object in the form of a sensor module as many as 6 modules by directing the smartphone camera at a predetermined Marker. The Marker is an image that has been registered in the Vuforia database for the target point of visualizing 3D objects

The test results of the application that have been made in this Final Project are the results of the analysis of functionality testing on 3D features and objects, testing on marker readings and subjective testing. Testing the functionality of the features and 3D objects on the augmented reality android application system that has been made, it can be concluded that all functions can run 100% according to the design. Then in testing the marker readings based on a distance of 10-60 cm can visualize 3D objects well and for testing marker readings based on angles, an angle range from 0o-45o can visualize objects well, but at a height distance of 40-60 cm. at an angle of 45o can't visualize 3D objects properly because of the limited space for capturing AR cameras with markers. By making this application, it can make it easier for students who have not taken or have taken Microcontroller and Interface courses to understand the work function and wiring of the wiring in each series of sensor modules with a microcontroller.

Keywords: *Augmented reality, Android, Smarphone, Vuforia, MOS, sensor, Marker.*