

ABSTRACT

Laboratory should have a comfortable atmosphere and condition so that students can focus more on the material presented. Factors that affect laboratory comforts such as temperature, humidity and noise. Laboratory monitoring should be done to avoid damage to facilities within the laboratorium.

In this final project is made Smart Laboratory application that serves to monitor and control the electronic devices and properties of Mechatronic Laboratory. The early step is designing system includes how the system works and design the display or interface of the application. App was made using Android Studio software. Applications that have been created will then be connected with Firebase as a medium for data retrieval and delivery.

The test results show that Smart Laboratory application can be integrated with Firebase and can display the status data of the room, the status of the device's storage door, the condition of the Air Conditioner and Exhaust device, as well as the room temperature and humidity data in real time. Applications can send notifications to users if the room temperature is above 30 degrees centigrade and when the door of the tool storage is open. Users can control on or off the Exhaust device. This application has a Smart Mode system which when activated the Air Conditioner and Exhaust will not turn on at the same time, which serves to save electricity consumption.

Keywords : IoT, Smart Laboratory, Monitoring, Controlling, Android Studio, Firebase