

## ABSTRACT

Rapid development of technology nowadays gives big impact for educational behavior, such as “Smart Presence” technology. Previous studies have conducted implementation of "Smart Presence" using Bluetooth. The study utilizes Bluetooth feature in smartphones and implement a prototype of Bluetooth scanner to conduct student attendances in classroom. But in the process, there are various problems such as Bluetooth scanner difficult to detect particular smartphone brands, Bluetooth signal range is too broad, and there is an indication of smartphones outside classroom remain detected and entered into attendance list.

This final project analyze to optimize the performance of "Smart Presence" system. Testing is done by comparing the signal strength of smartphone devices inside classroom with the devices outside the classroom. Based on the measurement of the coverage area and Receive Signal Strength Indicator (RSSI), the value of -20 dBm obtained as a threshold parameter of Bluetooth scanner to separate smartphone devices inside classroom with the devices outside classroom. And the test performed to obtain the best performance of Bluetooth scanner in smartphone detection acquired a percentage of 83.78% with 20 seconds as the best duration for scan inquiry.

**Keywords:** Scalability, Performance, Bluetooth, Smart Presence.