

## ***Abstract***

*Finding the best route to our destination room may be an issue when we are inside a foreign building, moreover, if the building is crowded or it has a complicated layout. A conventional directory board that usually provided in a building still has weakness; it's immobile. It also contains a lot of information that force the reader to filter out the irrelevant things, causing more times are spent just to find the best route to the destination room.*

*To overcome the weakness of a conventional directory board, a prototype of a mobile indoor directory application has been designed in this final task. It has a feature to estimate the user position inside a building, as well as finding the best route to the user's destination room. To support the indoor positioning, this application use a Wireless Positioning System (WPS) technique based on WiFi, called WiFi Fingerprinting. It estimates the user position inside a building by comparing the pattern of received signal strength at that time and the pattern of recorded signal strength on a database. Meanwhile, Djikstra's Algorithm is used to find the shortest route to the destination.*

*In this Final Task, the parameter performance is validation rate and computation time. From the experiment performed at the N Building of Institut Teknologi Telkom, the validation rate is 91,67% for positioning and 100% for pathfinding. The average computation time is 95734.86 ms on smartphone with 600 MHz processor.*

*Keyword: indoor, directory, wifi, wifi fingerprinting, positioning, pathfinding, djikstra's algorithm, mobile application, android, prototype*