

Universiti Teknologi MARA

**Smart Gate Mobile Application In Residential Area Putra
Perdana Using Geofencing**

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**Thesis submitted in fulfilment of the requirements for
Bachelor of Computer Science (Hons.)
Faculty of Computer and Mathematical Sciences**

January 2020

UNIVERSITI TEKNOLOGI MARA

SUPERVISOR APPROVAL

SMART GATE MOBILE APPLICATION IN PUTRA PERDANA RESIDENTIAL AREA USING GEOFENCING

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This thesis was prepared under the direction of thesis supervisor, Mr Zainal Fikri Bin Zamzuri. It was submitted to the Faculty of Computer and Mathematical Sciences and was accepted in partial fulfilment of the requirements for the degree of Bachelor of Computer Science (Hons).

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STUDENT'S DECLARATION

I certify that this report and the research to which it refers are the product of my own work and that any ideas or quotation from the work of other people, published or otherwise are fully acknowledged in accordance with the standard referring practices of the discipline.

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ABSTRACT

Controlling gate technology using registered smart card reader in private residential area, Putra Perdana, Selangor is challenging problem when the card cannot read by reader, it breaks down and the barrier gate entry and exit will open which easily for the trespasser or non-resident to entering the premises. In private residential area usually, security may hold onto identification card or driving license in exchange for visitor passes. The information leakage to unauthorized parties which can cause crime. Most of residential having a problem with this security issue. Due that, the aim of this project is to develop the application iSmartGate for residence to access the gate with geofencing technology used in this application in order to detect if residence is inside or outside the area and access the gate and also to solve all the problems stated above. Modified Waterfall Methodology was used to assist the system development. The application will send notifications to user to notify user is around location and gate open for their entry and gate close once leaving the gate also the residential. Geofencing technology was embarked on this application in order to detect if the user is inside or outside the barrier gate locations. This application had been successfully tested with functionality and user usability testing. Functionality testing showed that no errors in the system functionality and System Usability Scale (SUS) testing scored more than 68 which shows, users are comfortable when using this application. For future research is recommended to improve the application by using location-based services that can identify user who enter, exit or stay inside or outside set area and trigger send push notifications activity directly to users. This application can be enhanced by using Beacon technology make it easy for user devices detected and access gate through Bluetooth in short time and efficient.

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