

**UNIVERSITI TEKNOLOGI MARA**

**A GENETIC ALGORITHM BASED STUDENT  
ATTENDANCE MANAGEMENT SYSTEM WITH  
BIOMETRIC IDENTIFICATION**

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**JANUARY 2014**

# ACKNOWLEDGEMENTS

Bismillahirrahmaniirahim

In the name of ALLAH

The most gracious and the most merciful

Alhamdulillah, Thanks to Allah SWT, who with his willing give the chance to complete the proposal of my final year project with the title Genetic Algorithm Based Student Attendance Management System with Biometric Identification. This final year project proposal was prepared for University Technology Mara (UITM), basically for student to complete the undergraduate program that leads to the degree of Bachelor of Science (Hons) Computer Science.

Firstly, I would like to express my deepest thanks to Madam Siti Khatijah Nor Binti Abdul Rahim, a lecturer for subject Project Formulation CSP600. I would like to thank to my supervisor of this project, Madam Siti Khatijah Nor Binti Abdul Rahim for the valuable guidance and advice. She inspired us greatly to work in this project. Her willingness to motivate me contributed tremendously to my project. I also would like to thank her for showing me some examples that related to the topic of our project. I also want to thanks to Mohamed Imran B Mohamed Ariff for the cooperation during the completion of the project proposal that had given me tremendous of valuable information

Deepest thanks and appreciation to my parents, classmates and others for their cooperation, encouragements, constructive suggestion and full of support for the report completion, from the beginning till the end.

## **ABSTRACT**

Current class attendance collection in UITM is done manually using a paper containing a namelist of students. In this conventional system, sometimes exist cheating in attendance collection where their friend forged the signature. The main purpose of this system is to help lecturer to manage the attendance effectively and overcome cheating among the students. Besides, this system was developed with an integration with biometric devices to increase the efficiency in attendance collection. We have incorporated Genetic Algorithm (GA) in one stage of the system. The importance of using the Genetic Algorithm is to find the best fingerprints after going through all processes of selection, cross-over and mutation. From our preliminary study, it was observed that the images captured by the device are almost the same. The surface of the fingerprint reader is very sensitive with fingerprints because the fingerprints might left some trail on it. Therefore, Genetic Algorithm was used in this project is to improve the quality of the fingerprints. The method that we used to change the brightness for every image lead to better quality images. Based on the results obtained in this study, it was revealed that Genetic Algorithm managed to improve the quality of the images. Using a biometric device, together with our proposed system using Genetic Algorithm, it was shown that the method has achieved its objectives which helps in managing attendance recording process efficiently.

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