

**UNIVERSITI TEKNOLOGI MARA  
CAWANGAN PULAU PINANG**

**VERILOG CODE FOR CAR  
PARKING SYSTEM**

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## AUTHOR'S DECLARATION

I declare that the work in this thesis was carried out in accordance with the regulations of Universiti Teknologi MARA. It is original and is the results of my own work, unless otherwise indicated or acknowledged as referenced work.

I, hereby, acknowledge that I have been supplied with the Academic Rules and Regulations, Universiti Teknologi MARA, regulating the conduct of my study and research.

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## **ABSTRACT**

RFID system is widely used in this era as a mean of entry into a car parking. However, there is an issue to this method that needs to be resolved where the security of the car parking could be jeopardize. Hence, in this paper, it describes the working of a car parking system that was designed to be safer than the current RFID system. The system will be designed using Verilog Hardware Description Language (HDL) and conduct through software called Quartus II and ModelSim where the simulation was conducted in the ModelSim software. The timing diagram obtained from the simulation was observed to validate the correspondence of the output with the constructed coding. In addition, Quartus II Software acts as a channel to design the Car Parking System while the verification was done in the same software by implementing the programming file onto the development board, Altera DE2 – 115 Trainer Board. The working of the system was successfully demonstrated onto the trainer board where the 7-segment display increases in number and green LED lighted up when a correct password was entered while when the entered password is wrong, there is no change to the counter and the red LED lighted up. As a conclusion, the designed car parking system can be implemented to replace the common RFID system to improve the safety of the car park/residence building and determine the current number of cars in the premises.

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