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**FINAL REPORT:
SMART AUTOMOTIVE SENSOR**

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In partial fulfillment of the requirement for the award of Diploma in Electrical Engineering.

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Date: 8/9 /16

ABSTRACT

The issue of safety system in vehicles is very paramount in order to ensure the safety of road user. Almost every day, there are a lot of accidents reported in our country and the saddest part is a lot of lives were killed and a lot of damages happened. One of the causes that lead to this kind of accident are because of the road user behaviour. Some of them did follow the rule that has been set up. Even though a lot of vehicles nowadays were installed with the safety system, the number of accident still increased. This is because the presence of those safety system are not convenient and effective to be used. Therefore, improvising the safety system in the vehicle needs to be done by bringing in the smart automotive sensor system that initialize distance in front of the vehicles. The smart automotive sensor detects distance between the vehicles and the obstacles ahead. The system has been programmed to detect the distance of the obstacle ahead about 30 inches (76.8cm) as to make sure that the vehicle keep a safe range distance with the obstacle ahead. Besides that, output devices such as LED, buzzer and LCD is implemented into the system. The buzzer and LED will act as alarms to the drivers meanwhile the LCD will keep alerting the drivers by displaying the distance of the vehicles and the obstacles ahead. The use of microcontroller, LCD displays, LED and buzzer as the main component were coupled together in order to perform the desired task of the smart automotive sensor. In this report, the data analysis of voltage and current drop at input and output section on simulation testing, breadboard testing and PCB board board testing were measured. This is to ensure that all the component used to build this smart automotive are functional and correctly implemented. In conclusion, some of problem were occur during the project development. Troubleshooting as well as numerous trial and errors are made to make sure the smart automotive sensor are made to make sure the smart automotive sensor as functioning as desired. Therefore, the smart automotive snsor were successfully developed and designed.

ACKNOWLEDGEMENTS

First and foremost, we would like to thank Allah S.W.T for giving us the chance to still live and learn while we can. Other than that, we would like to thank our parents for providing much help and attention while we need them at important times.

Not to forget, our one and only supervisor Mrs. Rohaiza that doesn't give up on us and had always guided us along the whole process of this project. She was willing to give up her time on going home early or on lunch just to see our progress towards the project. Our two panels that were willing to give useful advice that helped us on improvising the project even though much changed hasn't been done.

The only partner that we have, that is each other. Every reports, every connections of components and the bits and piece of time that we use to help each other on finishing this project without any delay. Finally, our friends that were willing to help with an open arm when we were stuck along the way.

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