FACULTY OF ELECTRICAL ENGINEERING

UNIVERSITI TEKNOLOGI MARA TERENGGANU

FINAL REPORT OF DIPLOMA PROJECT

SMART STUDY LAMP

MARCH 2015

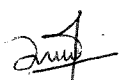SYAZWAN BIN ABD HASSAN   (2012407332)

SYAFIZ ZULHAZRI BIN SAID   (2012827982)

WAN MUHAMMAD ALIF BIN WAN NAJIB SABRI   (2012466236)

MISS FADHILATUL SAADAH BINTI MUDA

"I declare that this report entitled "*smart study lamp*" is the result of my own group research except as cited in the references. The report has not been accepted for any degree and is not concurrently submitted in candidates of any other degree."

Signature. :

Name : SYAZWAN BIN ABD HASSAN

Date : 8 / 4 / 2015

Signature :

Name : SYAFIZ ZULHAZRI BIN SAID

Date : 8 / 4 / 2015

Signature :

Name : WAN MUHAMMAD ALIF BIN WAN NAJIB SABRI

Date : 8 / 4 / 2015 .

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In overall, we want to thanks again to all people that have involved in finishing our project.

ABSTRACT

This project present and illustrate the automatic system of the study lamp by using ultrasonic sensor. The system's operation is by turning ON the study lamp when the obstacle is detected and vice versa. This project also include on how to alert and wake up the student that fell asleep during study. If the user is detected to sleep, the buzzer will give annoying sound and the study lamp will automatically OFF until the user is awake from sleep. This project is using Arduino UNO as a medium to program the ultrasonic sensor. IC74HC139 is used in this project to compare the two inputs. This smart study lamp is using two main circuits which are input circuit and output circuit. For the input circuit contain Arduino Uno with ultrasonic sensor which is used in detecting the obstacle. The other one is simple mercury switch circuit as detector of the user whether he or she is sleeping during study. For the output circuit consist of LED lamp circuit as light source and the running light with buzzer as the reminder to user that fell asleep during study.

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