



**AUTOMATIC CONTROLLER BATHROOM LIGHT AND FANS**

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## **ABSTRACT**

A light and fan on the toilet is being automated from manual for some advantage. It can reduce the usage of electricity. For automatic ON and OFF light, LDR is use to detect the intensity of light. If the intensity is high the light will turn OFF. For automatic ON and OFF fans, it will operate using synchronous motor and used AC power supply for long term. It will keep bathroom smell fresh when want to used it. The overall, this final report is established to fulfill the diploma project requirement for final semester student, a standard guideline is prepared to standardize various documentations and this report is done mainly to list down all the important aspect of the project that have been designed.

# CHAPTER 1

## INTRODUCTION

### 1.1 Background of Study

Automatic controller of bathroom light and fans is a simple and powerful concept, because it automates ON and OFF of the bathroom light and fans automatically which used component called magnet ZT that act as switch. It will automatically switch ON the light when the sunlight is not visible on the eye. When the door is closed, this system will operate but switch will ON and OFF the light automatically by illumination of sunlight. There is also having a sensor that called photo-resistor LDR that sense the light to help this project operate to switch ON and OFF automatically. By using this system, it can reduce the energy consumption because sometimes, the visitor forgets to switch OFF the light and fans after they use the bathroom. So the light will ON but they are no one in the bathroom and it can waste for electrical energy. Furthermore nowadays the manually operated bathroom light is not switched off properly in sunny and rainy days, ON time and OFF time differ significantly which is one of the major disadvantage of using timer circuits or manual operation. This project exploits the working of a transistor in saturation region and cut-off region to switch ON and switch OFF the lights at appropriate time with the help of an electromagnetically operated switch. Moreover, the circuit is carefully designed to avoid common problems like overload, relay chattering and inductive kick back in relay