MARA UNIVERSITY OF TECHNOLOGY

AUTOMATIC ROOM POWER CONTROL

KEU 380

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OBJECTIVES

- To understand how the 'AUTOMATIC ROOM POWER CONTROL' is functioning, what is the input and output of this circuit.
- To understand the basic function of each component.
- To verify how the ICs works and why it is important to the circuit.
- Verify if there any problem in the circuit and how to troubleshoot if there is a problem.
- To safe electricity, it only switch 'on' the bulb when person enter a room and switch 'off' when all of the people left the room.

INTRODUCTION

Have you ever thought is there a person in your room?

Occasionally, people build a circuit for 'Automatic Room Power Control' only got one light sensor. This when the person get into the room the lights will become 'on' and when the person leave the room the light becomes 'off'. But what happen if two persons get into the room at the same time. This is certainly will remains the lights 'off' all the time.

So, to overcome this problem we have made a circuit that will 'on' and 'off' the lights according to it desired fashion. This is where it used two light diode resistors (LDR)

This placed one after another so that it will separately sense a person getting into the room or coming out of the room. This circuit has a small memory which enables it to automatically switch 'on' and switch 'off' the lights to it desired fashion. Output of two LED , after it has been processes, are used with bi-colour LED so that when a person getting into a room it emits green light and when the person coming out of the room it emits red light. It is then applied to two decade counter. This is where when persons getting into a room, one of the counters will count upwards. While the other counter will count downwards. The next stage comprises two logic ICs which combine the outputs of the two decade counters and determine if there are still persons left the room or not.

This circuit has a maximum number of persons that are limited to four since it reset on the fifth clock pulse using the counters. It used up to +9V power supply.