

**FACULTY OF ELECTRICAL ENGINEERING**

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**FINAL DRAFT :**

**SMART FAN**

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## **ABSTRACT**

This project is known as a smart fan, it uses the PIR sensor to detect motion and LM35DZ to detect heat and finally operate the fan. So, this project has the relationship with the temperature that acts as a variable. Room temperature is a common term that can either denote a certain temperature to which humans are accustomed or a specific temperature and a passive infra-red sensor is a pyroelectric device that detects motion by measuring changes in the infrared levels emitted by surrounding objects. This motion can be detected by checking for a high signal on a single input/output pin. Usually used as a security device in a monitored area to detect the appearance of a human. Our project has an objective to achieve that is to design an automatic fan operating system based on indoor air temperature and human detection sensor. Then the next objective is to design a profitable project for the comfortable condition in home. This objective must be achieved to get a complete project. To support our project, we use a UV Exposure Machine, The Etching Machine, Drilling Process Machine, and Printed Negative Plastic. This equipment has been used for the process in Printed Circuit Board (PCB). There are many software to design the Printed Circuit Board (PCB) for example OrCAD, TINA software, PROTEUS and PCB designer. The layout is drawn by using PROTEUS software. The artwork that is designed in PROTEUS then is transferred to the negative film. It is printed using a laser printer. Then, the negative plastic film is exposed in the UV Exposure. This is where the PCB design is transferred to the PCB Board. The board is then goes through the etching process. Next the board will go through a drying and drilling process. The board is drilled to make appropriate holes for the legs of components. A high speed drill press is essential for carbide drills. The last step of making PCB layout is the soldering. The legs of components then are placed at the holes that are drilled before and soldering it with tin. Next equipment is a solder, adapter, multimeter, and Breadboard. For testing the hardware circuit at breadboard, we use an adapter and multimeter. Adapter is used to give voltage supply in a direct current (DC) and multimeter for troubleshooting this circuit before and after voltage supply is supplied. Solder is an equipment for soldering the components at Printed Circuit Board (PCB).

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