

ABSTRACT

Our world is always on the move, evolving every minute and moving towards a high technological era. We now rely a lot on technologies that made our lives simple and comfortable. Our lives are in better condition and in higher standard 5 years ago, many things had changed. If technology today were taken away from us, we may not be able to adapt in the “olden days” for we depend a lot on it.

This project is titled as “smart fan” that will be used in a hall or in rooms. When a function is going on in a room, it is important to ensure that the condition inside the room is comfortable and under control. We would like a clean environment, good air quality with cooling temperature and a humidity level that is acceptable. All of these conditions can be made possible with the help of gas sensor, temperature sensor and a humidity sensor.

The function of “smart fan” is to control air quality, temperature and humidity in an enclosed area. All of these can be done by using a DC fan motor, which is able to rotate in 2 directions to act as a fan or an exhaust. By changing the direction of rotation of the fan, we can blow out or to suck in air. This entire process is done automatically, where no person is needed to operate this system. However, a PIC microcontroller is used as the main control system.

When air quality inside a room for example is poor, the gas sensor will detect this situation and then send its signal to the PIC microcontroller. When the level of contaminated gas is exceeding the pre-set value, the fan will act as an exhaust fan and blow out the air inside. This is made possible with the use of a comparator. In addition, a buzzer will ring to warn the users inside.

On the other hand if the temperature inside the room is higher than the temperature outside the room, this condition will activate the fan suck in the cooler air into the room. This is done possible when a comparator is used to compare the air temperature inside and outside of the room. For humidity sensor, if it senses that the humidity outside the room is high, then the fan will be activated as well. In addition, an LED will light up to indicate what is going on.

Priority has to be set in this case for there are too many inputs. The highest priority is given to the gas sensor for dangerous gases are harmful and deadly. The second priority is given to the temperature sensor while the lowest priority is assigned for the humidity sensor.