Introduction

Electric fans are normally found in each family and within the business for cooling impact and ventilation. Electric fans have various sorts: Ceiling fan, Standard Fan, and Industrial fan. The regularly utilized fan is that the Standard Fan as a result of its movability. These fan types vary from each other in plan and usefulness and are chosen dependent on the measure of wind stream, pressing factor, and effectiveness needed for the cycle.

In addition, Electric Fans are composed of various parts these parts are: the base that supports the device. It also has buttons intended for the wind intensity (Low, Medium, and High). The Motor Housing, which contains the electrical motor and it provides protection similarly. The Blade, which rotates to divert the air and move it forward. The Blade Guard prevents someone to the touch the blade when it’s working. Power cord plug, where it supplies the ability needed by the electrical to show it on. Some are grounded (3 pins) and a few are polarized (one blade is larger than the other) and a few don't seem to be.

Electrical fires commonly occur in both commercial and residential settings. In keeping with the Bureau of fireplace Protection, electrical connections were one of the most causes of fires within the Philippines. Electrical fires will be triggered by electrical overload, electrical overheat, or an electrical tangency. (Mayuga, J. 2019)

Moreover, a complete of 77,724 fire incidents or a mean of 15,545 fire incidents annually or 42 incidents on a daily basis were recorded by the Bureau of fireside Protection from 2013 to 2017. BFP Spokesperson Vallejo said that folks must learn to remember and aware of the implications of negligence which will cause disastrous fire. (Mayuga, J. 2019)

Although, most electrical fires are caused by faulty outlets and old appliances. Others are started by damaged switches. Ignition of fire on appliances is generally caused by electricity and electrical problem. Electrical appliances that start fires usually leave a residue of electrical damage on their power supply cord relatively near appliances.

Passive Infrared (PIR) sensor belongs to the category of thermal detectors. Thermal detectors can measure the activity of a part through the absorption of electromagnetic waves. When an appropriate absorbing material is applied to the detector’s elements surface. PIR sensors are designed to detect human bodies, during which the IR emission of bodies at 37°C also peaks. PIR sensors are fantastic gadgets for wireless sensor network (WSN), Being minimal effort, low cost, and introducing a little structure factor. PIR Sensors are simple devices that are convenient and Reliable.

Thermistors are a class of sensitive components. It is a resistance thermometer or a resistor that depends on the varying temperature. Thermistors have two varieties: Positive Temperature Coefficient (PTC) and Negative Temperature Coefficient (NTC). The positive temperature coefficient thermistor (PTC) includes a higher resistance value at higher temperatures, and therefore the negative temperature coefficient thermistor (NTC) includes a lower resistance value at higher temperatures. (Alan, 2020) Thermistors have high precision within a limited range of about 50C around the target temperature. This range is dependent on the base resistance.

The researchers innovated a Desk fan attachment by attaching a Passive Infrared (PIR) sensor and an Arduino Thermistor. The motion sensor and thermistor will serve as a switch for the electric fan. The *Motion Sensor and Temperature Activated Electric Fan* prototype will serve as a springboard for innovation for safer appliances in all places. This prototype will lessen the probability of electric fans to overheat because of the appliance being unattended. In addition, this prototype will also lessen the probability of accidental ignition of fire due to the overheated electric fan. With the utilization of the invention, overheating appliances especially electric fans could be prevented by the automated mode switching of the Desk fan.

This prototype will lessen the probability of overheated electric fans because of the appliance being left unattended. Thus, this prototype will lessen the probability of accidental fires caused by said factor. With the utilization of the invention, overheating appliances especially electric fans could also be prevented because of the automated mode switching of the Desk fan.