of mosque and then smartly controls fan according to the temperature reading by the application Internet of Things (IoT) technology.

The Arduino Uno controller board will read and process the sensors to operate the fan switch. This process of operating the fan according to the ambient temperature of the mosques will help to reduce power consumption. This smart mosque temperature control can be applied in Malaysia in various mosques to make mosques efficient in energy utilization. Thermal comfort is one of the most essential requirements for the satisfaction of mind and ass well as body. The aim of this project application is to design and develop a circuit that will automatically control the speed of a fan according to switch in the temperature of the surrounding areas. Circuit was constructed with a microcontroller, temperature sensor, and supporting components. The temperature and the fan speed are displayed on the LCD screen. The result of the project showed that the speed of the fan is controlled as per the change in temperature remotely controlled via web browser and Apps [6].

The A/C-R system or vapor compression is designed of four major components.

- 1. Compressor
- 2. Evaporator
- 3. Expansion valve
- 4. Condenser, which are arranged as shown in Fig. 1.

Scientists have conducted many studies on the development with different angles, which can be shown as

- 1. Proper air temperature and humidity of the specific area.
- 2. Improvement of system steady-state performance as well as robustness.
- 3. Reduction of energy consumption.



Fig. 1 Schematic Diagram of A/C System

Initially, turning the switch on/off can result in start or stop the device. But, it is not capable of controlling the temperature according to varying working conditions, such as, the ambient temperature. With the latest application of A/C-R systems in home, vehicles, and industries, a large amount of energy is being utilized. The remarkable growth in the requirement for environment protection and energy conservation is forcing researchers to design green devices with greater energy efficiency. Efficient operation of A/C-R systems can reduce operating cost as well it is not harmful [7].



III. LITERATURE REVIEW

Hyeonwoo Jang *et al.*, [8] focused on the problem related to building energy management system technology (BEMS). In the building major part of electric consumption used in HVAC system and lighting, It means that its important factor of energy conservation. The main aim of paper it is use of IoT in HVAC and lighting to reduce the consumption of electricity and also can save the energy efficiency. The proposed system operating condition is designed to allow the administrator to setup the system flexibly. The software and hardware system also can use in demonstrated test bed. Power consumption of the test bed was reduced by about 11.2% compared to existing installed system

Raffaele Carli *et al.*, [2] focused on IoT based architecture for module predictive control (MPC) of HVAC system that optimizes the indoor thermal comfort and the energy consumption. Every state has different art and culture. Before using IoT, it is a very important to see HVAC control system and also it general Based structure for the implementation of the HVAC automatic control in real environment. And on other hand define the MPC atomization problem for the effective control of HVAC system. The perfect result shown by easy use of approach and the effectiveness of underlining control algorithm. In order to comfort system there are various disturbance (such as variation of occupants and the opening of window and door). It's reducing by using IoT and also its increase the Indoor comfort.

B. Padmaja *et al.*, [5] discussed that the uses of IoT. How it can be used effectively in different industries like food, automobile etc. And also in cold storage through IoT we can maintain the different parameter like (temperature, voltage, mean) and many more. IoT can detect more accurately than human. IoT can be more use full in refrigeration industry and food industry for the preservation of food and wine and to maintain the quality and freshness of Products. IoT deals with the data transfer technology in this paper we will find more.

A. M. Ali *et al.*, [4] focused on the IoT used in AC system to produce appropriate thermal comfort in indoor environment by monitoring air temperature by relative humidity inside the temperature in room and office. It has been realized that the most of occupied discomfort is producing from the method of controlling the AC. and also working of AC maximum time effect of occupant health and welfare. Therefore by using IoT based smaller controller with the selected enhanced PMV-based mode because of that AC can create the comfortable environment that can increase the satisfaction about the environment and produce the great words productivity. Also AC system could be improved by using integrating the artificial intelligence element with different type of condition with respect to rooms.

Patil Varsha *et al.*, [9] In this paper it has been discussed that the uses of electricity by the heating and cooling air conditioner is more related to other mechanical devices used to comfort the human. So to reduce the more usage of electricity IoT will be helpful for an example in a room there is only one person and the room is chilled or in a room there are many people and the room is at normal temperature with AC on. So, on both conditions there is a waste of energy. With the use of IoT these problems may be solved. While using IoT in AC's output will be as expected.

IV. RESULT

From the above research it can be stated as the energy requirement is increasing day by day and the requirement of human comfort is increasing rapidly. In order to ease the human comfort the IoT implementation plays an important role in the HVAC so that the energy can also be consumed efficient way and there is less wastage of energy. Luxury of human is also benefited by the implementation of the IoT.

V. CONCLUSION

From the above description it is concluded as, the use of IoT based appliances makes the work easy and it is also mentioned that how the energy consumption can be reduced by the efficient use of IoT in different appliances. By the use of different sensors, actuators, etc. the work is reduced for the betterment of human comfort. And also the use of IoT products the wastage for energy is minimized. In short, we can say that, by the means of use of IoT the human comfort is also increased and the energy consumption is also reduced.

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