Team Name : Fsociety

	Name	Branch and Semester	Contact Number	Email- ID
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Note:

1. One can participate either as a part of a team or an individual basis. Switching teams is not allowed.
2. The uploaded ideas will be screened to go to the second round.
3. Judging : competition entries shall be judged, or winners selected based on the following criteria
   - Is the problem worth solving
   - How innovative or novel is the idea
   - Scientific accuracy
   - Social impact
   - Scalability
4. Decisions of IIC JSSSTU in respect of all matters to do with the competition will be final and no correspondence will be entertained.
5. In second round, the selected teams will have to present their idea in front of the jury panel.
6. Payment of INR 50 should be made to the UPI ID **anju.marina.lobo@oksbi** and submit the transaction ID above.
7. Idea should be submitted in **.pdf** format.

Abstract:

The project aims to solve the problem of lack of availability of a cheaper alternative to air conditioner. Fans though helpful, leave a lot to be desired as they require manual operation and are a hassle to change the speed periodically. Further it can be an unnecessary power wastage hazard

Our project proposes a cheap and modular plug and play devices that attaches to any fan regulator pot and immediately turns it into a smart fan which automatically changes the temperature to the

user's comfort and provides an app to remotely control the fan without internet. It is eco-friendly as it turns off when not needed.

A solution to the problem is needed to give every common man a chance at a life of comfort and to narrow the gap in living standards of upper and middle classes all while conserving power at a fraction of the price of an air conditioner.

Introduction:

Every innovation that man has made from the invention of the wheel to this day has been with the primary goal of comfort and to overcome any day to day inconvenience. One such scenario where man faces discomfort in day to day life is in terms on keeping cool especially in the hot and humid sub tropical temperatures of India.

Though air conditioning systems do exist to control the temperature and humidity, they are to this a only a luxury that the upper class minority can afford. Most of the lower and middle classes, to this day use fans to keep cool. In particular, ceiling fans with wall mounted fan regulators are used to keep rooms cool in most households. These have many drawbacks of their own mainly being unnecessary power wastage and the tedious task of manually changing thr fan speed.

Our solution aims to overcome this very issue by providing a device that can be easily plugged onto any regulator and convert a normal fan into a fan one which can not only be controlled by an app but also provide an automatic temperature based fan control which completely takes human labour out of the equation.

Motivation:

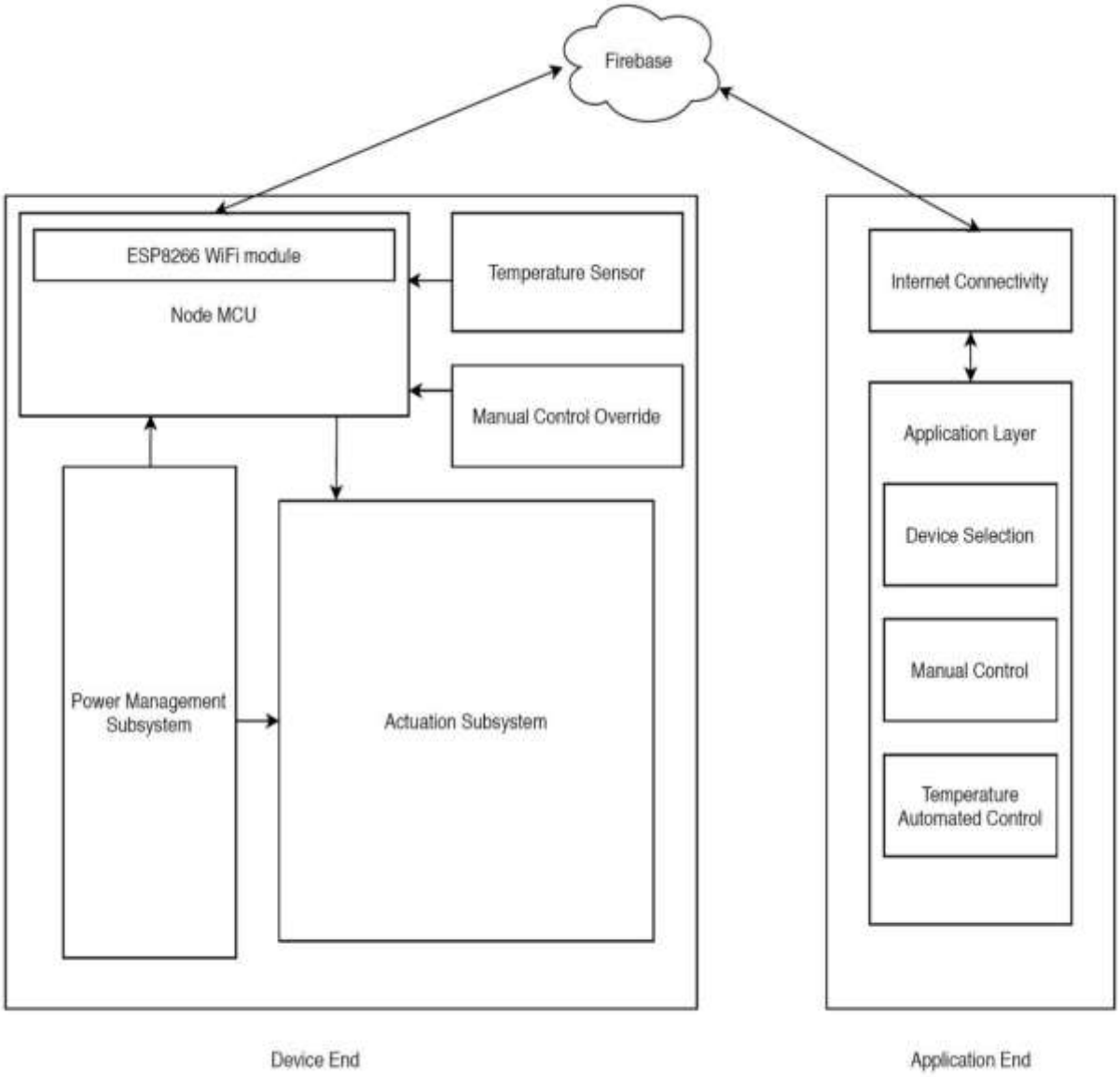
Technology strides made in fan-systems have been miniscule over the past decades. To this day, the user has to cumbersomely move near the fan regulator to change the fan speed. This can be particularly annoying during the night when the user feels too hot/cold and wakes up just to change the fan speed or turn it on/off. This can ruin the sleep cycle of the user. Furthermore, if forgotten to turn off when not needed, fans contribute a large chunk of the electric bill. Though smart fans exist, they are very expensive and require whole systems to be upgraded which is not always feasible.

Methodology:

The solution is accomplished with the help of a hardware module with Wi-Fi internet access which is installed onto the wall mounted fan regulator on the hardware end and an android application

which is used to control the device remotely. The Firebase cloud service is as an intermediate in the communication between the hardware and the software end.

Block Diagram:



The solutions consists of 3 main subsystems namely the device, the android app and the data base. The device consists of a actuation system in the form of a motor that is controlled with the NodeMCU with the inputs by the temperature sensor. All this is powered by a Li-ion battery power management system. The application end deals with the selection of the device that is to be used. There is provision for controlling the fan speed manually though the app as well as an automated mode where only the desired temperature is given as input and the fan automatically takes care of the rest. All the communication between the device and the app is done with the help of a FireBase database

Social Impact:

Fans as mentioned have a lot of drawbacks. The alternative ACs are very expensive for installations and maintenance and hence has been a luxury of the upper class to this day. Our project proposes to bridge the comfort of living gap between the upper and middle class by providing most of the AC features at a fraction of the cost. The proposed solution can help narrow the gap in the standard of living of the upper and middle classes in society. It takes a stride forward in providing comfort to the common man and improving the quality of sleep over night of the middle class people who can't afford an Air Conditioner.

Market Survey :

The total available market consists of all the fans currently in circulation. The serviceable available market consists of all the ceiling fans that are already in use which use wall mounted fan regulators for control.

Product Differentiation w.r.t Competiton

The prominent competition for our product are smart fans that are already in the market. However, these fans have not caught up as normal fans still make up the vast majority of the market share. This is largely due the following factors which our product helps to overcome with its distinct approach.

1. The competition provides solutions that are expensive often costing over Rs 3000 per fan. Our product is much cheaper in comparison as it is only a module that can improve existing normal ceiling fans.

2. The competition uses inbuilt electronic components in the fan for it’s feature which requires an entire fan to be bought. Our solution with its modular approach does not require an entire fan unit to be bought separately.

ccording to a survey we conducted predominantly among students of our University which comprises of a wide range of economic background, the following were noted. Out of the 127 responses collected it was seen that 89.7% used only fans at home, 7.9% used A/C and 7.1% used both. Interestingly, the survey revealed that 88.4% of the users end up waking up in the middle of the night to turn the fan on or off after feeling uncomfortably hot or cold. Those surveyed were noted to want a way to automatically controlling the fan to their liking as 64.6% voted yes while 27.6% voted ‘Maybe’ meaning they would consider it. From these findings it is clear that this Product has a huge Market Potential and it is solving a real issue.

According to the survey we conducted, we found out that 62% were ready to pay 1000Rs to the Product and the remaining people were ready to pay an amount between 1000-2000Rs