Good afternoon everyone, I am Shreya. Our project is HOME AUTOMATION which falls under the domain of AI. I am the team leader and my team members are Nafees, Maaroof and Ayan. Because the time limit is short, Nafees and I will explain everything. I’ll cover problem statement, block diagram and comparison with existing system. Nafees will explain the proposed solution and benefits to our society.

Home automation, this is a word that we’ve been hearing for a prolonged time now. Even though technology has been developing rapidly and integrating in our lives, there isn’t much development in automation. And even though home automation is feasible at this point with the smart speakers, TVs, refrigerators, ACs and everything else, its implementation hasn’t reached optimal efficiency yet. After doing research as to why this is the case, we’ve found that people still think of it as a luxury and the benefits of automating our homes are very low. Because there is no market for home automation yet, no major companies are investing in this game changing technology yet. The purpose of this project is very simple, this project should not only make our lives more comfortable but it should also be a gateway to home automation. Our prototype will convince people that home automation is no more a luxury but one of the comforts that the modern era promises everyone.

As you can see, we’ve integrated very few appliances, we want this prototype to be accessible to general public but a few more appliances such as air purifier and controlling the garden are also added as additional features. Our primary board is STM32 which is cheap and yet powerful enough to manage these appliances. It is connected to our home wifi using a wifi module, which is connected to thingspeak cloud-based service to manage everything from our smartphones. This may seem like any other home automation project but our primary selling point isn’t home automation itself, it’s the aesthetic touch our prototype has and the additional features that we’ve added.

Comparing it with the existing system, there isn’t much home automation as of now but a few appliances have been made to be controlled via a remote and of course the increasingly popular and desired product, a smart home speaker. There are a few drawbacks to these, like they’re not well integrated, the supposedly smart speakers control nothing but the light and music system, the fans which can be controlled with a remote cannot be controlled with a smartphone. And because these are not integrated properly people are not convinced to automate their homes yet. Our prototype has overcome all these drawbacks and even added additional features. Nafees will explain in detail how we are planning to implement this. Over to you Nafees.

Thank you Shreya, moving on to the next topic, PROPOSED SOLUTION. The very essence of innovation lies in devising solutions which solve multiple issues in a single stroke, that’s what lead to the smartphone and that same philosophy tells us to minimize as well as optimize on the same board. We have decided to integrate multi color lights, air conditioners, air regulators, fans, windows and the music system. A software is to be developed that can run on mobiles to control everything. Apart from the option to control each appliance individually this app will also have a special themes tab, in which different themes can be set. Each theme will have different configuration to set AC’s temperature, music, fan’s speed etc. Users can also create manual themes that can be set with a single click. When any theme is not set the board decides the parameters based on the temperature, humidity and weather report. It can also be configured to have a certain theme at certain time. One additional feature is that it can track the user’s location and if the user is away from home, it will automatically turn off everything, and when the user enters a certain perimeter around the house. This option can be modified based on the user’s needs, or they can simply turn it off. A few examples of what the themes could be are: -

1. Sleep Theme: When this theme is set it turns off the lights, closes the windows, sets the AC to the desired temperature, air regulators are set to minimum and soothing music is played, if configured.

2. Party Theme: The lights change colors as configured, you can configure the lights to change with an interval to turn your house into a personal pub, besides that, air regulator and AC temperature are set based on number of people in the party, which is found out by a PIR sensor. Music will be played as configured.

3. Tired Theme: Dims the lights, melodious music is played, AC temperature and fan speed are set as configured.

This is how we envision home automation, when someone is tired, they won’t have to dim the lights with a remote, change the AC temperature with another remote and then yell “Alexa, play melodious music”, instead, they can make a single click on their mobiles and have everything set just the way they want it to be. The best part about home automation is that we can simply upgrade it by integrating more and more appliances, so instead of clicking on your mobile if we further develop this, maybe we can give an alexa command, such as, “Alexa I am tired”, and it will automatically trigger the tired theme. With this prototype the possibilities are endless and sky is the limit.

Benefits to our society. Home automation will be the next big technological advancement that becomes a part of our day-to-day life. A new sector in technology means whole new sector of job opportunities. Apart from this, since all the home appliances are controlled by a single board, they can be programmed to work in the most efficient way which can save energy. This will contribute to saving bills, energy resources and ultimately our planet. It’s a well-known fact that our present time is one of the most stressful periods ever documented. So having this kind of comfort will greatly improve everyone’s mental health and also bring joy in their lives.

Good afternoon everyone, I am Shreya Kate. Our project is HOME AUTOMATION which falls under the domain of AI. I am the team leader and my team members are Nafees Akhter, Maaroof Merchant and Ayan Khan. As the time limit is short, Nafees and I will explain everything. I’ll cover problem statement, block diagram and comparison with existing system. Nafees will explain the proposed solution and benefits to our society.

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