Problem Statement>>>>Develop a UVC based germicidal system that can be installed in office spaces, rooms, etc for disinfecting these areas to make it free from infectious pathogens like novel coronavirus and similar viruses.

Analyze>>>> As COVID-19 continues to ravage global populations, the world is singularly focused on finding ways to battle the novel coronavirus. UVC based system is come up as a solution to fight against the problem of disinfection and this would offer a low-cost, chemical-free, and convenient method to sanitize public, retail, personal and medical spaces.

Our project aims to provide a portable tool that can be used for disinfecting the visitors at the entrance of the gate. This tool can be used to install in the gate and if it senses a person coming near to the gate then it automatically turns on the UVC light for some fixed duration. Thus, it overall solves the automatic disinfecting problem.

Steps>>>>

* The system uses an Arduino UNO which has a program to detect the person coming.
* The ultrasonic sensor used to detect the person coming near the gate, then the HIGH signal is transmitted to the analog pins of the Arduino.
* After getting the signals and if the distance is less than the set amount, then the signals are transmitted through PWM pins to the power boost circuit module.
* The power is amplified using the power module and used to turn on the UVC light.
* For a fixed duration the UVC is turned ON and then it gets turned OFF.

And the whole process is repeated again as it detects a person coming near the gate or entrance.

Key Concept>>>> The recent analysis by DRDO on killing the viruses from surfaces using UVC light, motivates us for thinking about this system. This is a cost-effective method used to easily disinfect the person coming to work from outside. This will solve the problem of those people who are putting their lives in danger during this pandemic time.

The technology stack used in this system is just the Arduino IDE, Multisim, and Tinkercad for online simulations.

Tools>>>>

* 1 x USB Portable LED UVC Disinfection Lamp Handheld Germicidal UV Sterilizer Light
* 2 x resistor
* 1 x Arduino UNO R3
* 1 x MB1013 Ultrasonic sensor
* 1 x XL6019 5A DC-DC Adjustable Boost Power Module High Power Step Up Board
* 1 x breadboard
* 50 x jumper wires

Akash Saw: Simulation, Coding

Rahul Saw: Hardware wire framing, Coding

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