IOT-WSN CONNECTED DUSTBINS

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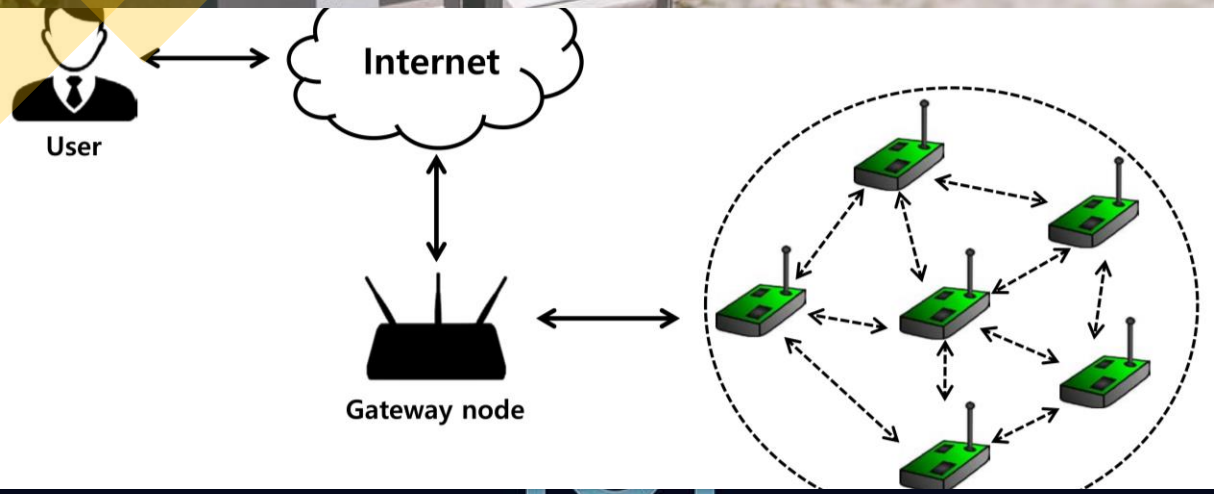
PROBLEM STATEMENT

Solid waste management, which disturbs the environment's equilibrium and has negative consequences on society's health, has been one of the key environmental challenges. One of the main issues of the modern period is the identification, supervision, and management of trash. The conventional method of physically checking the wastes in trash cans requires more human labour, takes longer, and costs more money. It is in no way compatible with modern technology.

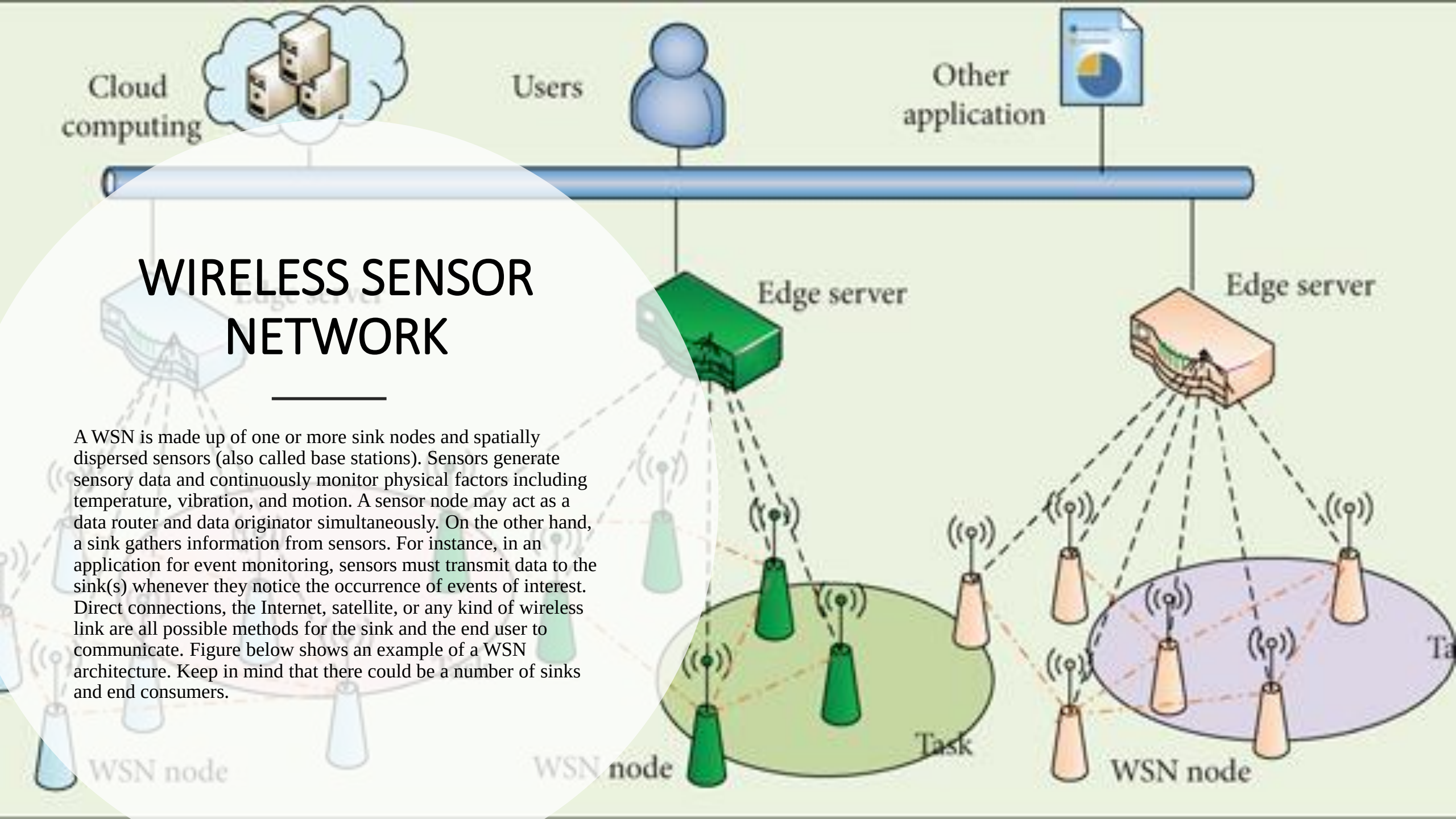


PROBLEM SOLUTION

- “IoT-WSN Connected Dustbins” is a smart wireless sensor network having different sensors, IoT and WSN technology to provide an innovative solution to automation industry assisting to build smart dustbins for smart cities. Monitoring of dustbins can be implemented using ultrasonic sensors, LEDs, microcontrollers and other supporting devices along with renewable power source. Many devices are available in the market having such type of solution. Some smart dustbins are using IoT service to report the administration about the status of dustbin. But is it possible to provide internet access to each dustbin. Not at all. So “IoT-WSN Connected Dustbins” is a native solution to solve the stated problems.

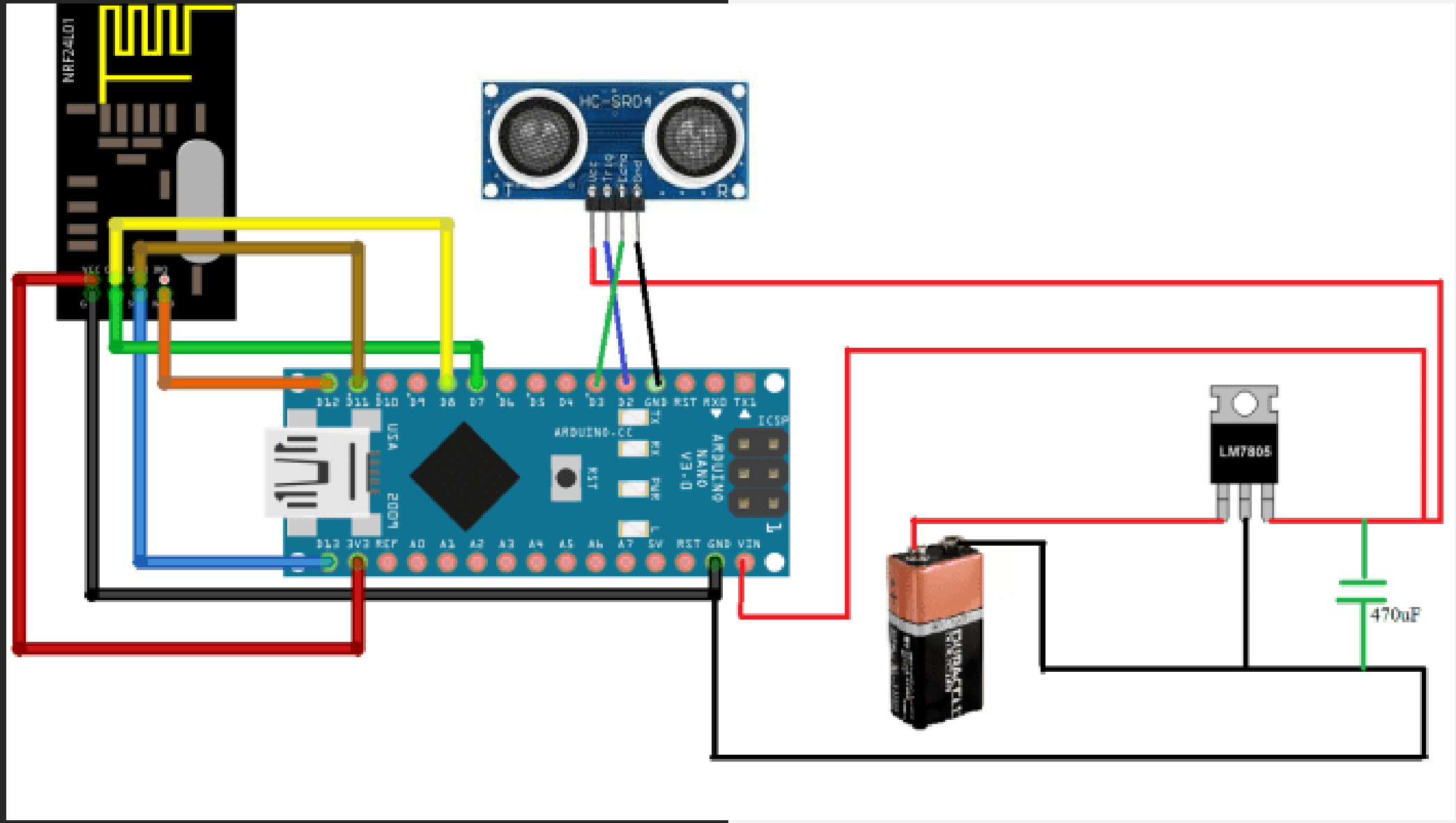
WIRELESS SENSOR NETWORK

A WSN is made up of one or more sink nodes and spatially dispersed sensors (also called base stations). Sensors generate sensory data and continuously monitor physical factors including temperature, vibration, and motion. A sensor node may act as a data router and data originator simultaneously. On the other hand, a sink gathers information from sensors. For instance, in an application for event monitoring, sensors must transmit data to the sink(s) whenever they notice the occurrence of events of interest. Direct connections, the Internet, satellite, or any kind of wireless link are all possible methods for the sink and the end user to communicate. Figure below shows an example of a WSN architecture. Keep in mind that there could be a number of sinks and end consumers.

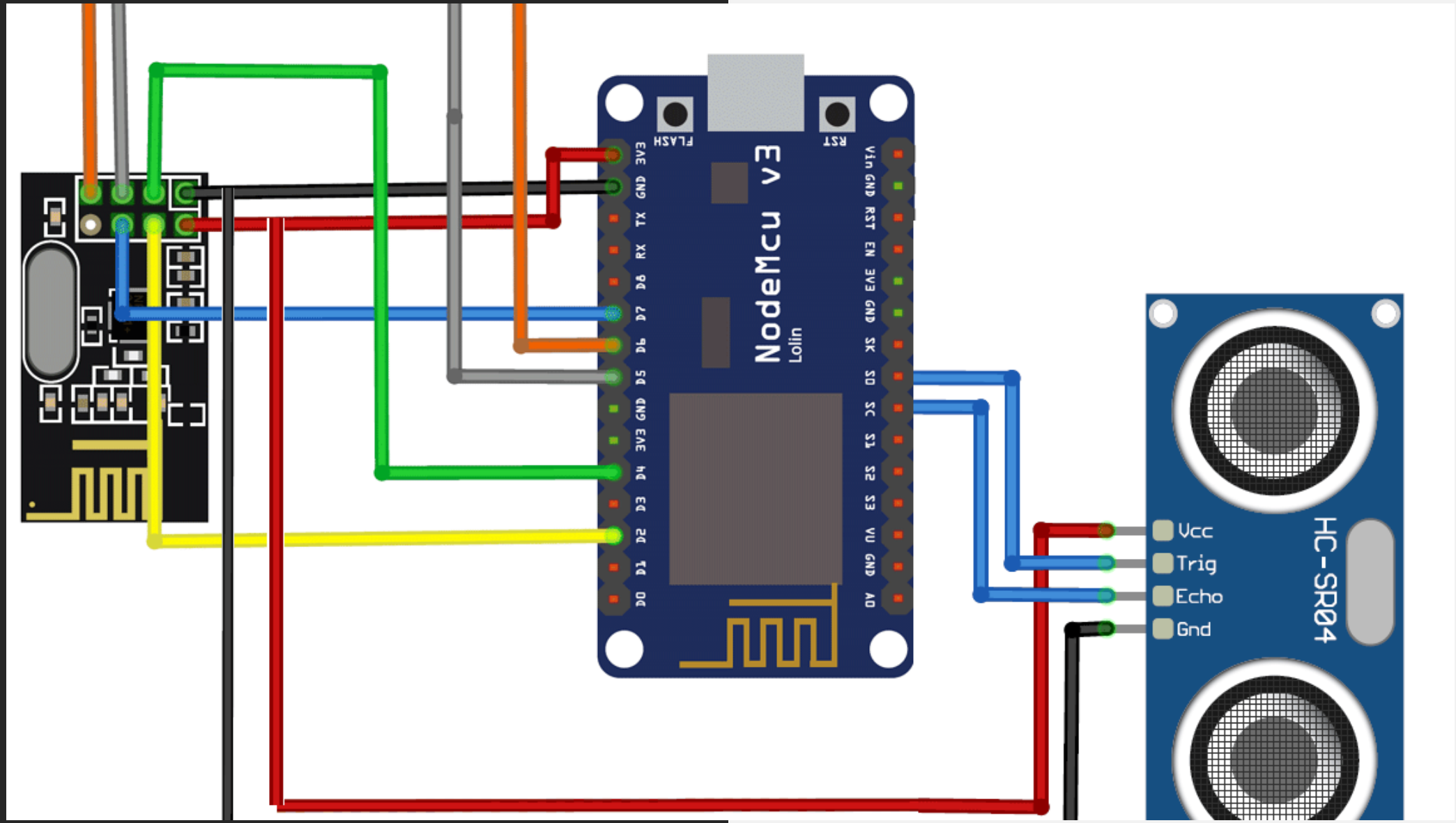


INTERNET OF THINGS

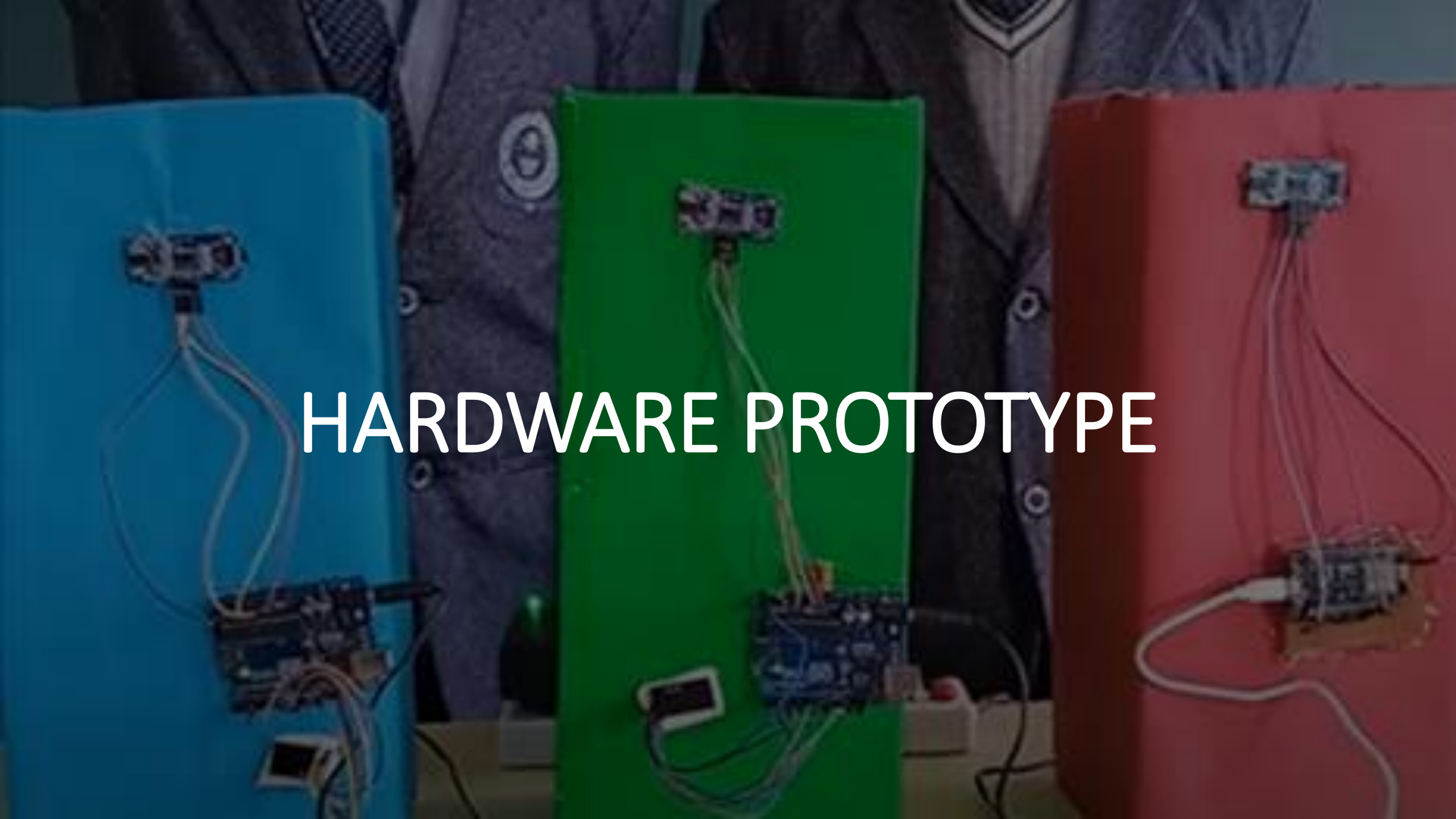
- The internet of things, or IoT, is a network of connected computing devices, mechanical and digital machinery, items, animals, or people that may exchange data across a network without requiring human-to-human or human-to-computer interaction.
- The term "thing" refers to any natural or artificial object that can be given an Internet Protocol (IP) address and has the ability to transfer data over a network, including people with implanted heart monitors, farm animals with biochip transponders, cars with built-in tyre pressure monitors, and other examples.



CIRCUIT DIAGRAM: NODE



CIRCUIT DIAGRAM: Cluster Head



HARDWARE PROTOTYPE

THANKS

YOUTUBE LINK