Final Report

Internship Title: - IOT Based Weather Monitoring
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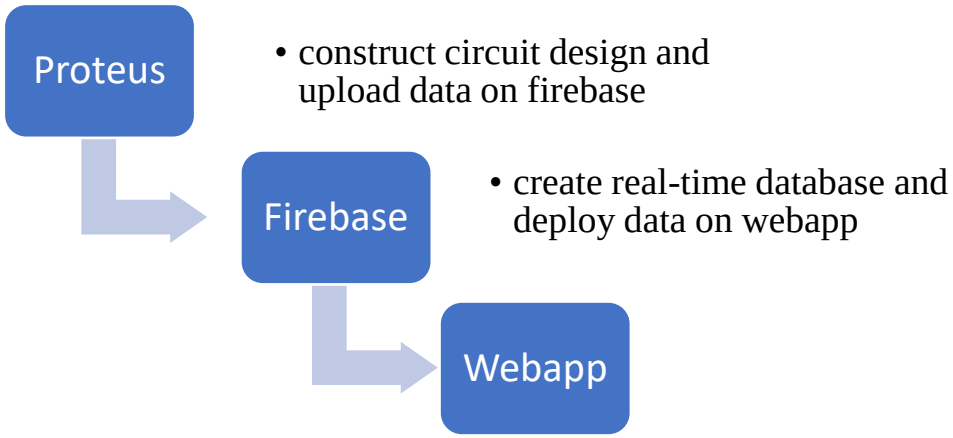
GitHub link: https://github.com/Tinkerers-Lab-VESIT-ETRX/IoT-based-Weather-monitoring-7

Existing problem: Air pollution is the presence of substances in atmosphere that are harmful to the health of humans and other living beings, or cause damage to the climate or to materials. Harmful gases like sulphur dioxide, carbon monoxide, nitrous oxides, methane, particulates (both organic and inorganic), and biological molecules affect human and animal health badly.

Overview: We need to design a system which will detect presence of these harmful gases in atmosphere and alert us on gases exceeding their levels, so that we can take precautionary steps.

Proposed solutions:

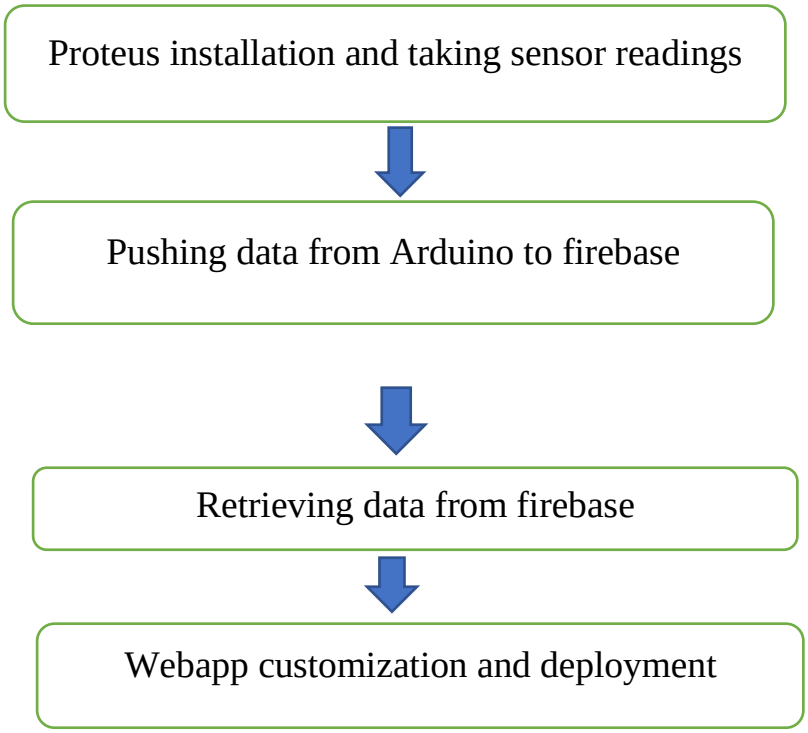
Block diagram-



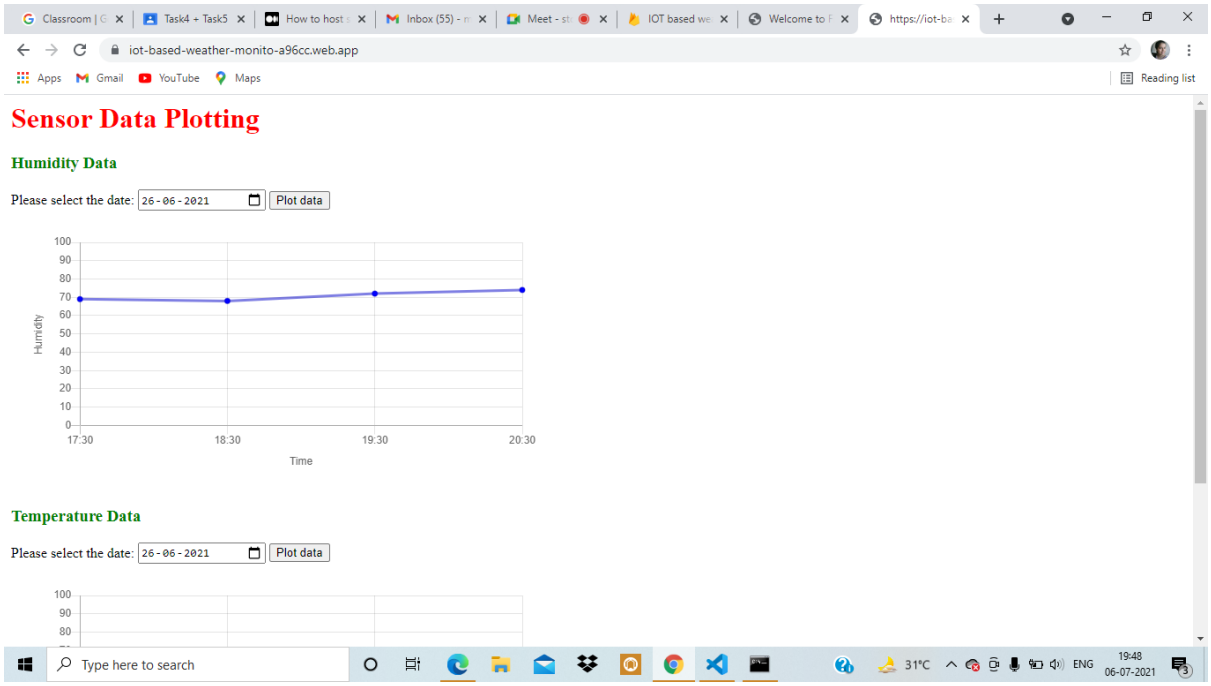
Requirements:

- DHT 11 temp and humidity sensor
- Bmp 180 barometric pressure sensor
- Air quality sensor MQ135
- LEDs or Buzzers
- Arduino
- Software like MATLAB

Flowchart:



Results:



Screenshot of designed Webapp

Advantages:

- Easy to install
- Accurate sensing of air quality and humidity
- Easy to plot data

Challenges:

- Few more sensors can be added

Applications:

- Industrial vicinity air quality checking
- Humidity measurement in different types of areas
- Temperature measurement

Learning outcomes:

- Arduino
- Html coding
- JavaScript

Conclusions: IoT based weather monitoring system uses microcontroller to improve air quality.

References:

- Google
- YouTube
- https://medium.com/@aleemuddin13/how-to-host-static-website-on-firebase-hosting-for-free-9de8917bebf2
- HTML- https://www.w3schools.com/html/html_basic.asp

CSS- https://www.w3schools.com/css/css_intro.asp

Bootstrap- https://www.tutorialspoint.com/bootstrap/index.htm

JavaScript- https://www.w3schools.com/js/

HTML Requests in JavaScript-

https://www.freecodecamp.org/news/here-is-the-most-popular-ways-to-make-an-http-r

equest-in-javascript-954ce8c95aaa/

Appendix:

- Source code (Webapp): https://github.com/Tinkerers-Lab-VESIT-ETRX/IoT-based-Weather-monitoring-7/commit/e98ef9f5b546373b9fa365e29d29b32ec7d7609a
- Source code (Arduino code): https://github.com/Tinkerers-Lab-VESIT-ETRX/IoT-based-Weather-monitoring-7/commit/ed343bcf3e72aeef96acd130696db13de9b67abf