



An electronics teacher's perspective

Global IoT market valued at 1 Trillion US Dollar by 2026 [1]

How to develop systems which are real world and need less hardware

Compute on cloud instead on the hardware.

Three Keys [2]

1. Don't build your own hardware.
2. Innovate at the application layer.
3. Have a realistic business plan.

Collect data if already available online.

Cloud Computing and Web Services

Processed Data/ Online Info/ WebHooks/API calls



PySerial

Image/Video/Location/Sensors Data

Hardware with sensors and actuators

Case Study 1:

Train Location tracking using Python instead of GPS/GSM



Indian Railways Website

Location Data



Unmanned Railway Crossing Alert and Gate Control

[1] <https://www.fortunebusinessinsights.com/industry-reports/internet-of-things-iot-market-100307>

[2] <https://www.iotcommunications.com/blog/cost-of-iot-implementation/>

[3] <https://pyserial.readthedocs.io/en/latest/>



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What PySerial Offers? [3] and How to Utilise.

Deploy Python Apps on Cloud with CI/CD, ML and DBMS capabilities

- Access to port settings through Python properties.
- Support for different byte sizes, stop bits, parity
- Flow control with RTS/CTS and/or Xon/Xoff.
- Working with or without receive timeout.
- File like API with "read" and "write"
- URL Handlers

Basic Hardware Setup
With Serial Port or Wireless Connectivity

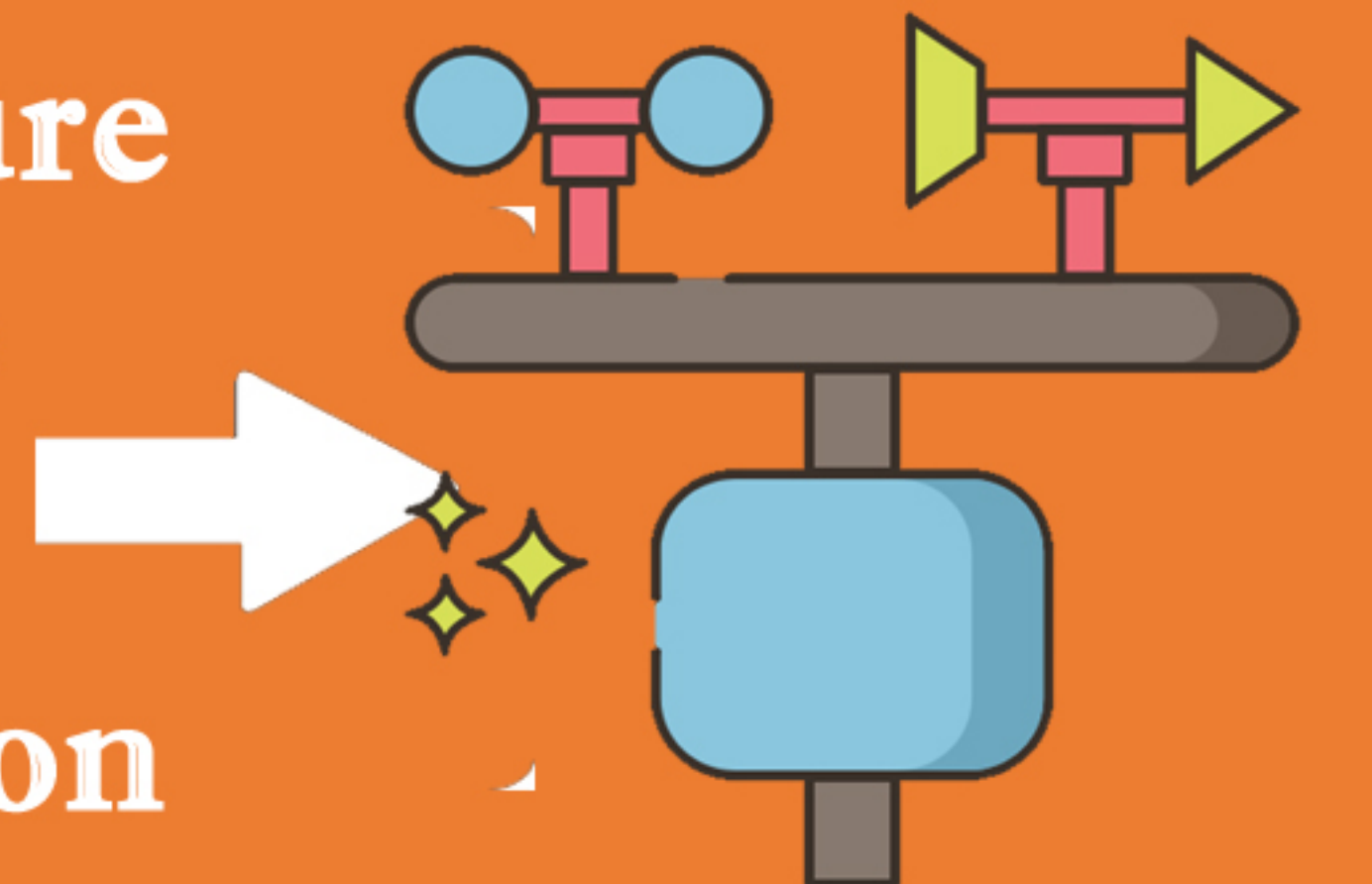
Case Study 2:

Weather Monitoring System using Python instead of Sensors



Indian Meteorology Website

Temperature
Pressure
Wind
Precipitation



Weather info for Agriculture
Hailstorm/Cyclone Alert