

Hard and Soft 2018

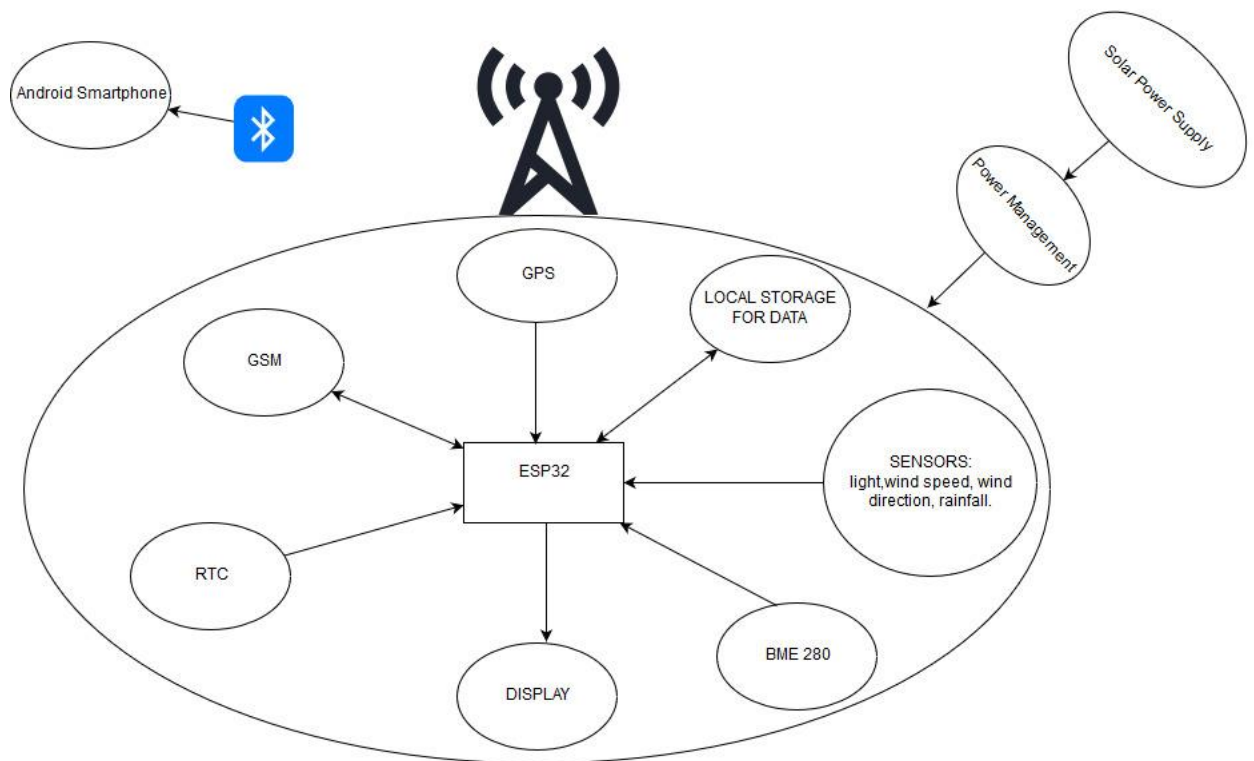
Remote, No Moving Parts, Weather Station



Timisoara Team 2

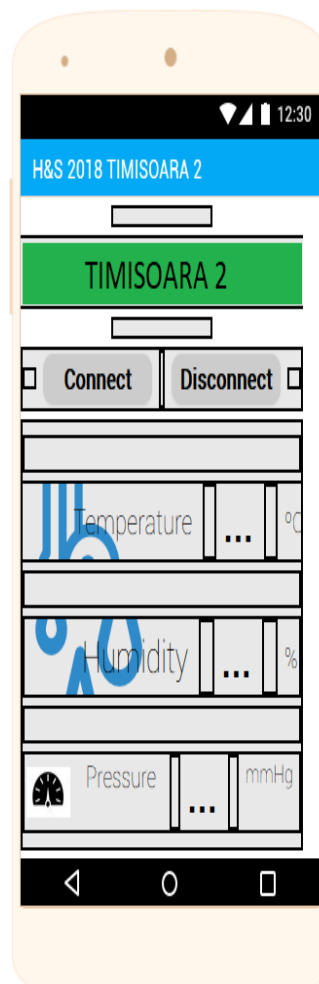
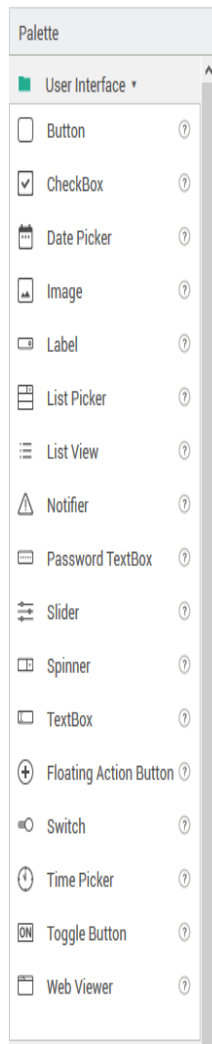
We built a remote weather station with no moving parts which can datalog various environmental conditions. Weather station sends its data for display to an App on an Android smartphone by Bluetooth. We use ESP32 as a main subsystem which takes data like temperature, humidity and atmospheric pressure from BME280 on I2C. The values received from BME280 are processed and sent via Bluetooth to android application.

Security is a key aspect of our design, the hardware connections between the ESP32 and sensors are inherently secure from an unwanted third party, the Bluetooth communication with the mobile smartphone application is crypted, the module will only pair with a particular MAC address and just to be sure we will add an ID to the frames sent via Bluetooth and every message with a wrong ID will be discarded.



Android Application

Our android application was created in Thunkable and search for BLE devices and connect to the selected BLE device from the displayed list. Application also displays data received from the BME 280 sensor like temperature , humidity and atmospheric pressure.



23:49

0,00K/s    4G  56%

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Connected!

Disconnect



Temperature **23** °C



Humidity **42** %



Pressure **733** mmHg

Versioning our work

We use Git to keep our work safe and for tracking changes in our files and coordinating work on those files between us . As a Git application we use GitKraken. We create a repository in GitHub and every member of the team clone this repository and use GitKraken to push their changes.

