



roomWeather

Gambari Gianluca

Lucchini Gianmaria



UNIVERSITÀ
DEGLI STUDI
DI GENOVA

Our goals:



REAL - TIME VALUES

Measure temperature and humidity
for each available room



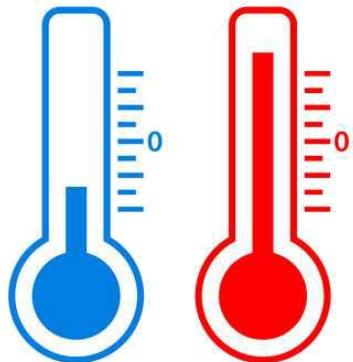
VIEW STATS

Display live values

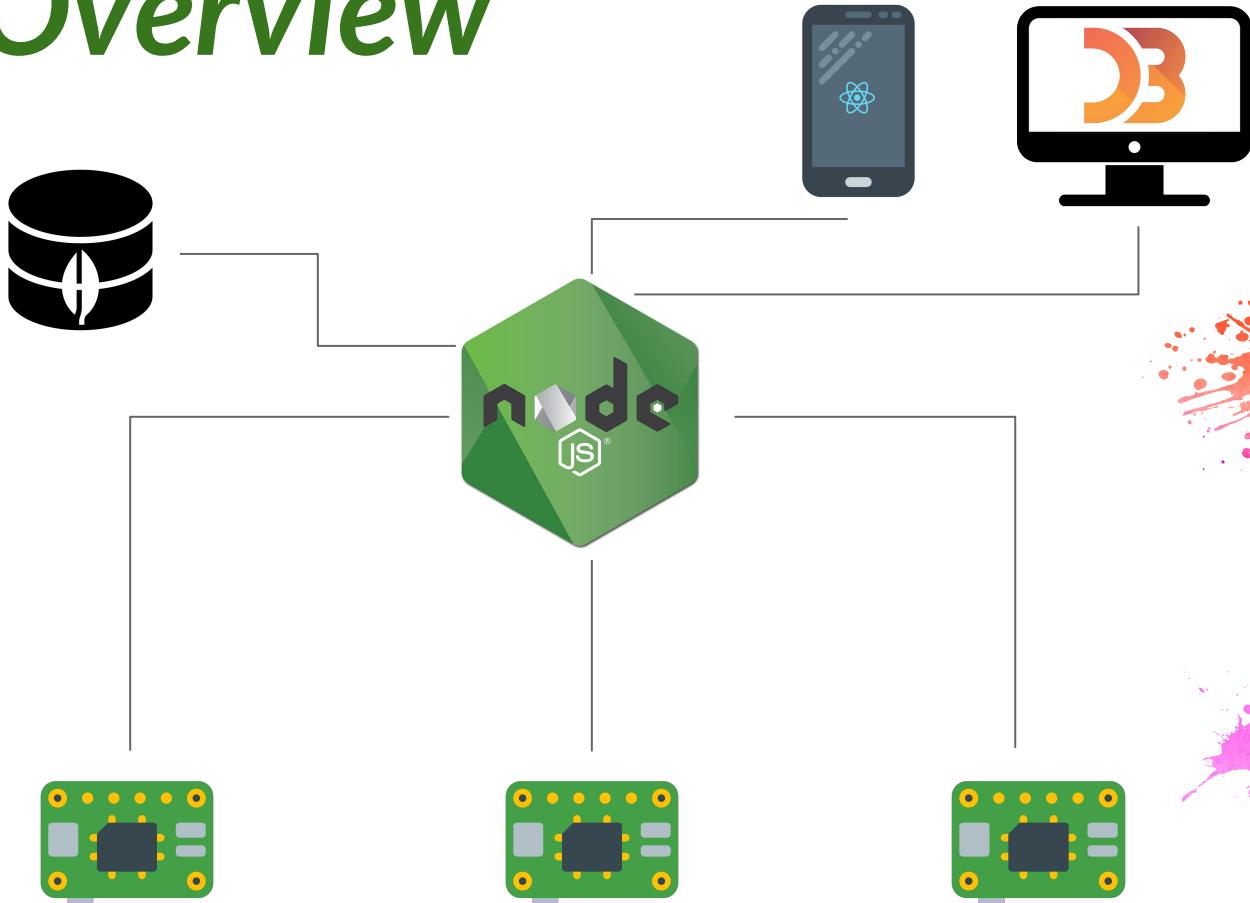


HISTORY

Show the daily stats given a specific
day



Overview



1. *Technologies*

Server-Side

Node.js

Express.js

Socket.IO



Back-end

- × **Node.js**

Node.js is an open-source, cross-platform JavaScript run-time environment that executes JavaScript code outside of a browser.

- × **Express.js**

Express is a minimal and flexible Node.js web application framework that provides a robust set of features for web and mobile applications.

- × **Socket.IO**

Socket.IO enables real-time, bidirectional and event-based communication. It works on every platform, browser or device, focusing equally on reliability and speed.



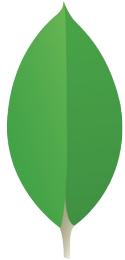
socket.io

express 

Database

Mongo DB

Mongoose



mongoDB®

Database

- × **Mongo DB**

MongoDB is an open-source document database that provides high performance, high availability, and automatic scaling.

- × **Mongoose**

Mongoose provides a straight-forward, schema-based solution to model your application data.

mongoose



Client - Side

d3.js

Javascript

Bootstrap



Front-end

- ✗ Javascript
- ✗ Bootstrap
- ✗ D3.js



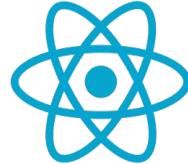
D3.js (or just D3 for Data-Driven Documents) is a JavaScript library for producing dynamic, interactive data visualizations in web browsers.



Mobile App

React Native

ART



React Native

Mobile App

- × **React Native**

React Native is a JavaScript framework for writing real, natively rendering mobile applications for iOS and Android.

- × **ART**

ART a built in library for simple vector drawing.

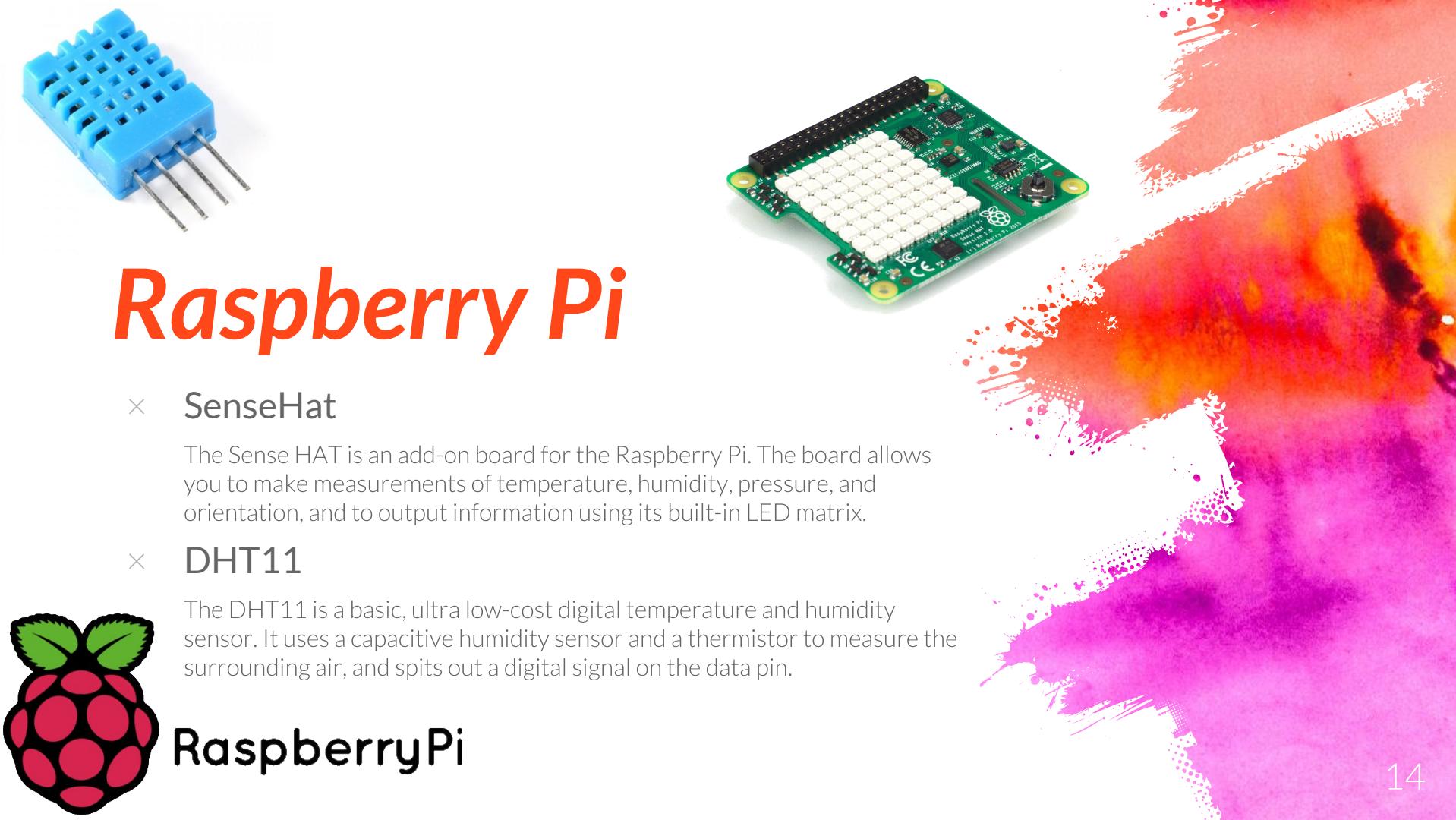
ART



Raspberry Pi

SenseHat

DHT11



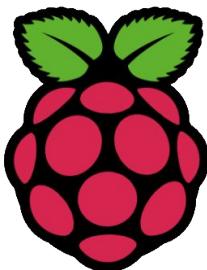
Raspberry Pi

- × **SenseHat**

The Sense HAT is an add-on board for the Raspberry Pi. The board allows you to make measurements of temperature, humidity, pressure, and orientation, and to output information using its built-in LED matrix.

- × **DHT11**

The DHT11 is a basic, ultra low-cost digital temperature and humidity sensor. It uses a capacitive humidity sensor and a thermistor to measure the surrounding air, and spits out a digital signal on the data pin.

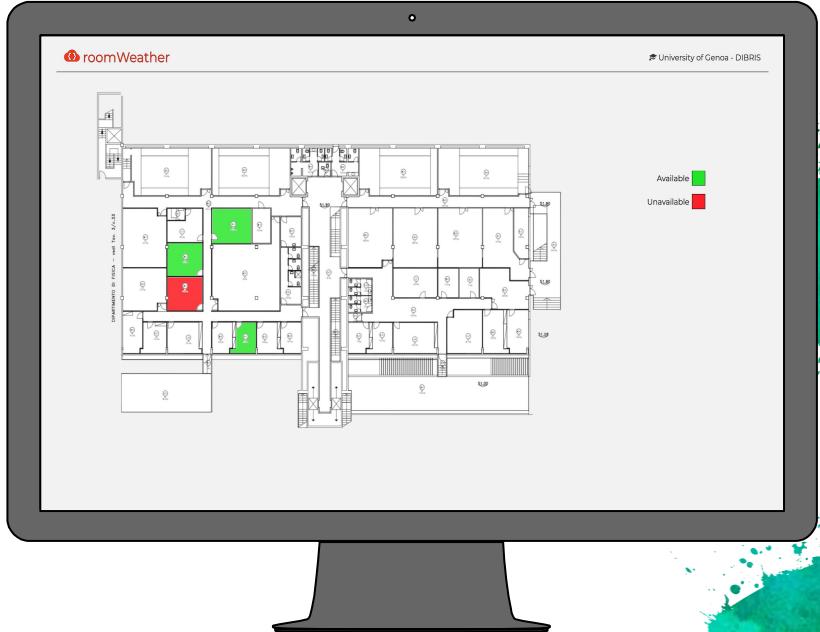


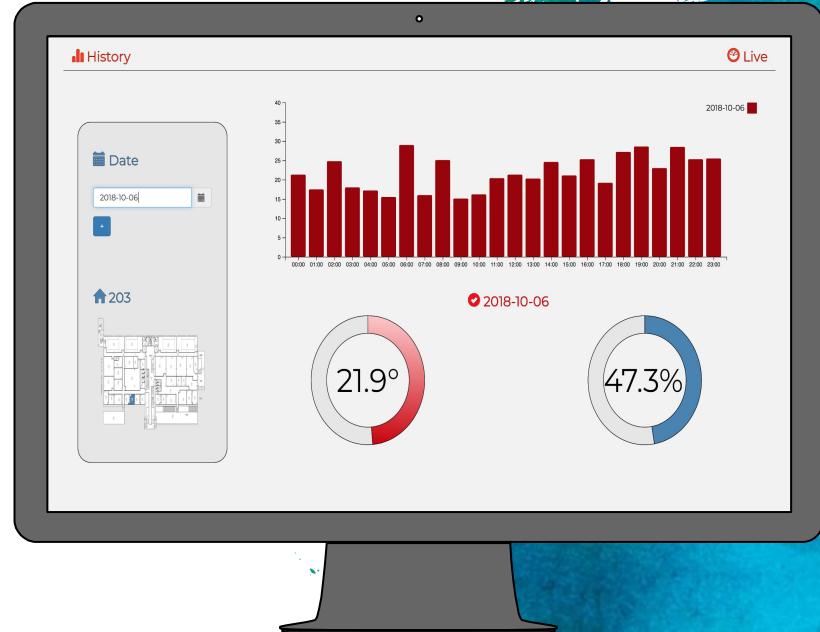
RaspberryPi

2. *Desktop Application*



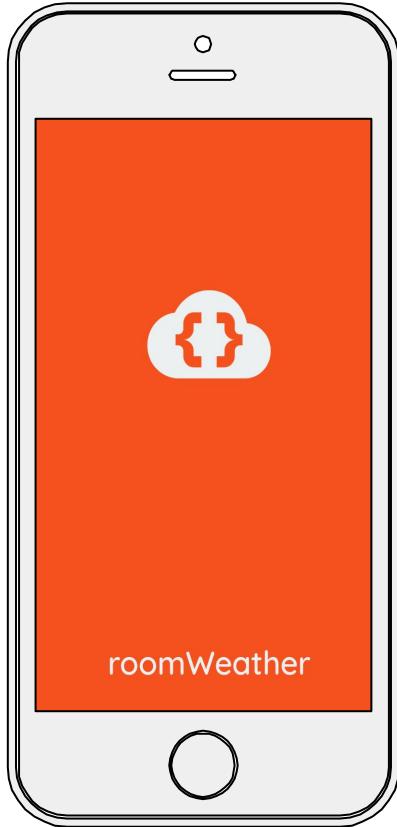
Desktop view



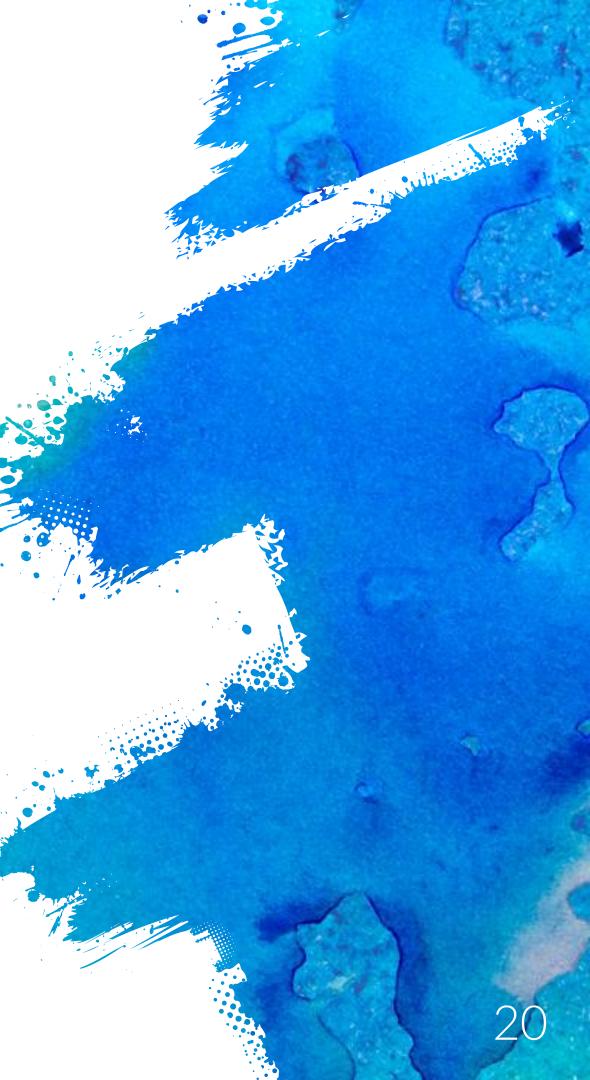
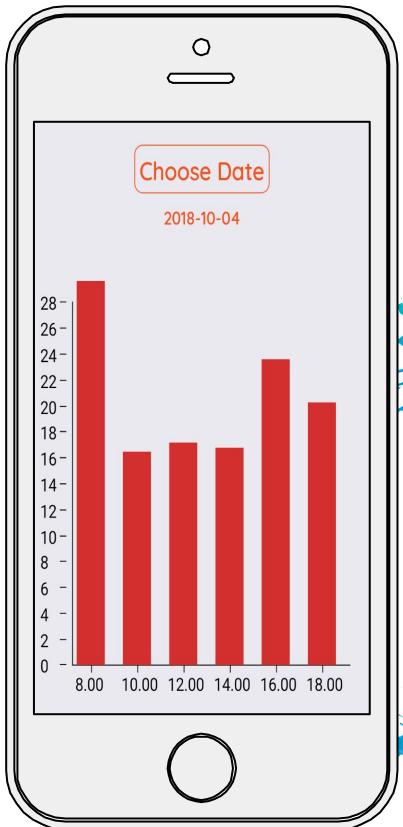
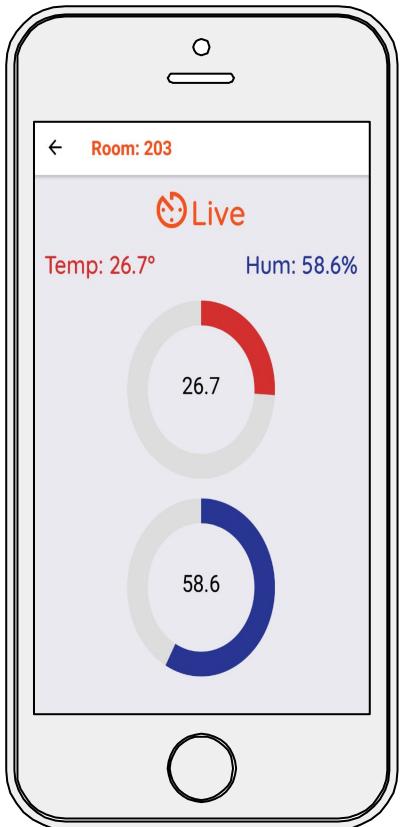
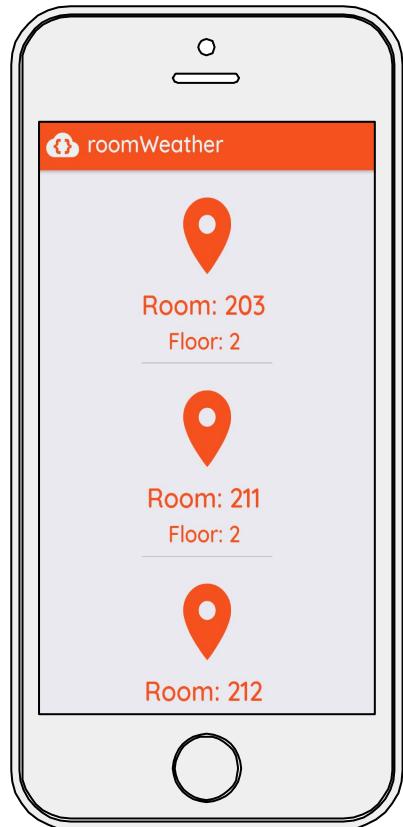


3. *App*





Mobile
view



4. *Future improvements*



Possible improvements

- ✗ Login
- ✗ Favorite rooms
- ✗ Analytics
- ✗ ESP8266 hardware instead of Raspberry Pi
- ✗ DHT22 sensor instead of DHT11



DEMO LIVE!