Commitment letter

Web app for Micro:bit sensors – Isac Svensson

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Content

Customers Requirements

My perception of the customers requirements are what I've listed below:

GUI

- Temperature and light level **must** be displayed in some way in web-app
- Web-app **must** provide interface to place sensor location within room
- User interface **must** provide the possibility to draw or upload a picture or blueprint of the room.
- As a user I **should** be able to add size of a room (e.g. 12m*10m)

Backend

- The system **must** record the highest and lowest temperature/light level of the day
- The system **must** save records of the last month
- The system **must** be able to connect to multiple devices (at least 2 per room).
- As a user I **must** be able to see temperature and light level in real-time (without having to reload page)
- As a user I **should** be able to add multiple rooms to the system
- As a user I **should** get warnings if the room gets outside the allowed intervals of temperature and light by e-mail.
- The system **must** monitor and collect temperature and light level from one/multiple Micro:bits

General requirements

- Web-app **must** be written in python (framework optional)
- Connection-solution from Micro:bit is up to developer to choose
- The system should be accessible to view for everybody within my network
- The system **must** have an authorization system for configuration (username and password)

Commitment

In the best of all worlds I would like to deliver a system that fulfills all requirements above. A system with a GUI that provides the opportunity to administrate multiple rooms; add, remove and config multiple Micro:bits per room and show the information. You should be able to upload a blueprint of the building and have divide into separate rooms where you can set the exact size of each room and add your Micro:bits by either clicking the map or entering coordinates.

The system would record all temperature changes and changes in lighting in the Micro:bits each day to a database and the GUI would present a pretty interface for statistics and graphs for the last month.

If lights or temperature is to high or low admin should be notified by either SMS or e-mail (choice by admin).

Feasible commitment

Due to limited time and resources I won't be able to deliver a system as described above. I'm going to start to get one room and one micro:bit up and running. I'll set up a GUI for viewing the sensor information in each room, with a graphical representation of the room where you can place your sensor by adding it's coordinates in the room.

Features

What I can commit to delivering with the give budget is this:

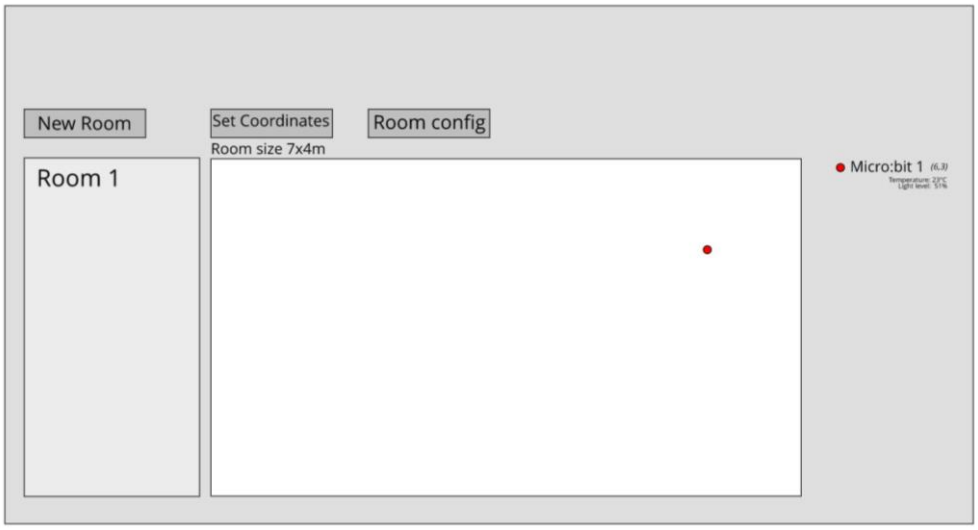
Feature	Description	Cost
F1	Base for the web app	20
F2	GUI for reading sensors in real time	10
F3	GUI for configurating sensors and rooms	10
F4	User authentication for configurations	5
F5	Basic user management	5
F6	Backend system for connecting to and reading values of the Micro:bits	20
F7	Database for storing history, room and Micro:bit details and user management	10
F8	Warning indicators for sensors in GUI	5
F9	Adding new Micro:bits to a room form GUI	10
	Testing	20

If possible, I will work towards my perfect solution and adding as much extra value as I can.

Draft of technical solution

My plans is to build a system where you can access the rooms and Micro:bits connected to the system from a web app.

User interface



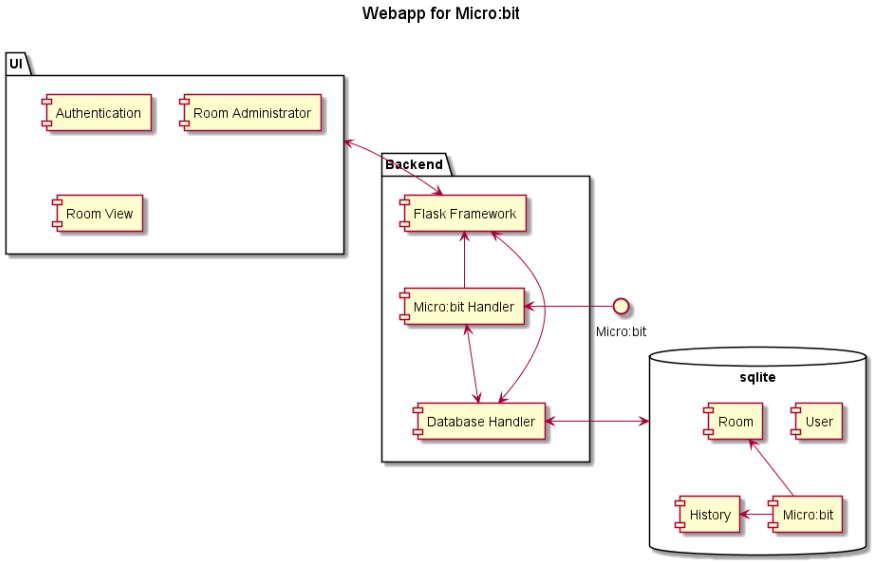
The users interface will show a virtual representation of the room with the Micro:bit-unit marked.

All accessible rooms will be shown in a list to the left and buttons for actions on top.

Room size is set by entering measurements e.g. “width: 7” and “depth: 4” for a 7x4m room.

Placement of the Micro:bit is done by either numerical coordinates, (6, 3), or in best case by clicking the screen.

System draft



The framework for webapp will be Flask. That will talk to both a database handler and a Micro:bit handler for information access.

The database will store user information for the authorization, all added rooms, all microbits connected to the system and history logs.

Customers feedback

Hi Isac,

Looks good to me. I like that you specified customers requirements in sections, i can read your commitment clearly. The user interface looks good as an overall layout. What i would add is a couple of line describing the overall system and a section about the MVP.

Regards,

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