What

A greenhouse management system (GMS) for hobby gardeners consisting of:
1) a Raspberry Pi computer with necessary sensors and engines attached, working on client's premises, being able to gather local data and communicate with a public server over wifi
2) a server-side application collecting, storing and presenting measurements of the client's GMS instance as well as tools for configuration and distant management of the attached gear

Why and for whom

Having a small flowerbed or greenhouse where some of the most essential and frequently used herbs, tomatoes, cucumbers, etc, is grown is an increasing trend among people who care what they eat and how it's grown. Unfortunately, having such hobby quite often means one *has to* be ready on a regular basis to open or close the doors and hatches in order to keep the temperature bearable for plants. Watering the plants is often the main reason to visit a country house or summer cottage more frequently than one would like. Leaving home for more than a couple of days could mean death sentence to everything one has grown in months. Thus the solution is meant for everybody who likes growing stuff for their own use, but do not want to sacrifice their freedom to travel around during summertime.

Expected outcome

Expected outcome of the current project is to have a scalable client-server system where Raspberry Pi is situated in a greenhouse (or any other environment protected from the bad weather) being responsible for measuring temperature, moisture and other sensors' readings and transferring these over wifi to the central server where authenticated users can adjust their preferences (for example, at what temperature doors should be closed), operate directly their local system (for example, start the watering pumps, close the doors manually), etc.

Related hardware

For the development project an already set up starter kit consisting of Raspberry Pi3, temperature and moisture sensors, necessary relays, breadboards, jumper wires, etc is provided, but assembling everything from scratch is welcome, too.

Benefits

In case the product to be developed will be viable enough and the team has a real interest in the subject a joint venture to build a market-ready product will be discussed.

Conditions

Any outcomes produced by the student team under and within the framework of the Software Project and any transferable intellectual property rights related thereto, incl. all the economic rights of the author and rights to protect intellectual property are transferred to Jarno Raid from the moment of creating them.

Contacts

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