SMART HOME SYSTEM

Purpose → control over the entire house with all of it's appliances at the user's fingertips

functionality:

- control temperature → Web interface
  - turn on/off heater → Button
  - control temperature → pop-up text bar in which the user will have to enter the temperature they want
- control lighting → Web interface
  - switch on/off lights → Button in site
  - control light level → Fine tune lighting using a pop-up text bar in which the user will have to enter the percentage of light they want
  - measuring avg current consumption monthly → will be displayed in the site
- control over house plugs → Web interface
  - check exiting current → text on site
- control house security(cameras and locks) → Web interface
  - camera vision → a subpage of the main site
  - lock/unlock doors → the user will have button to do said action
  - (maybe) face recognition to unlock doors → in the backend using Python //not decided on whether or not this function will be implemented; will decided on a later stage

- use relay board and a microcomputer(RPi) to control on user level
- have a server that will host the site/application code
- use mqtt for RPi<->SERVER communication

We are going to use a website(maybe an application too/not decided yet/)to do all of this things.

The website will have a login/sign-up page. The site needs to be intuitive and easy to use so that even people who aren't "good with computers"(a.k.a everyone's grandparents) will be able to control their entire house.

Backend → Python + Libraries for rpi controll, computer visoin

Frontend → HTML, CSS,JS, Bootstrap

DB → MySQL

Frontend<->Backend comms → MQTT

Controller → RaspberryPi