

COSIMA '21

Cozy wash

Project report

Origin of the idea

How did the idea come about?

Whenever we wash our hands in the toilets in University, train station, restaurants etc., we felt twinge and prick in our hands as the water temperature is not set as desired. The discomforts in hands are usually minor frostnip due to cold water or minor scalds due to hot water. Even if the tap has a handle or faucet lever to control the temperature, it is not safe to touch them as it might have lots of germs accumulated from other users. So we came up with our idea of “Cozy wash”, a smart faucet.

How does it work?

Cozy wash will automatically set the temperature of water to the user’s desired temperature without any physical contact with it. It detects the nearest person to the faucet and reads their temperature preference using Bluetooth Low Energy (BLE) technology and delivers the water with their temperature preference.

Project description

The Cozy wash project consist of the following components,

- A Bluetooth Low Energy (BLE) chip to detect the nearest person.
- A mechanical actuator to actuate the hot and cold water valve in the faucet.
- A proximity sensor to trigger the water flow.
- Any Bluetooth device for the user to set his/her water temperature preference (e.g. smart band/ phone/ watch/ tag, etc).

The Smart Faucet detects the first nearest person to it with the help of the BLE technology. The nearest person would have the preferred temperature value stored in his Bluetooth device (for e.g. smartphone, band, tag etc.). The faucet reads the temperature value from that Bluetooth device and then adjusts the hot and cold valves in it to give the water with preferred temperature. The proximity sensor is to trigger the water flow.

Unique Selling point

Contactless temperature control of the water.

Less mechanical parts, therefore, extends the faucet's life.

User experience

Current status:

Currently, people use a handle or faucet lever to control the temperature.

For whom?

Public washrooms in restaurant, universities, railway station, supermarket etc.,

Smart homes

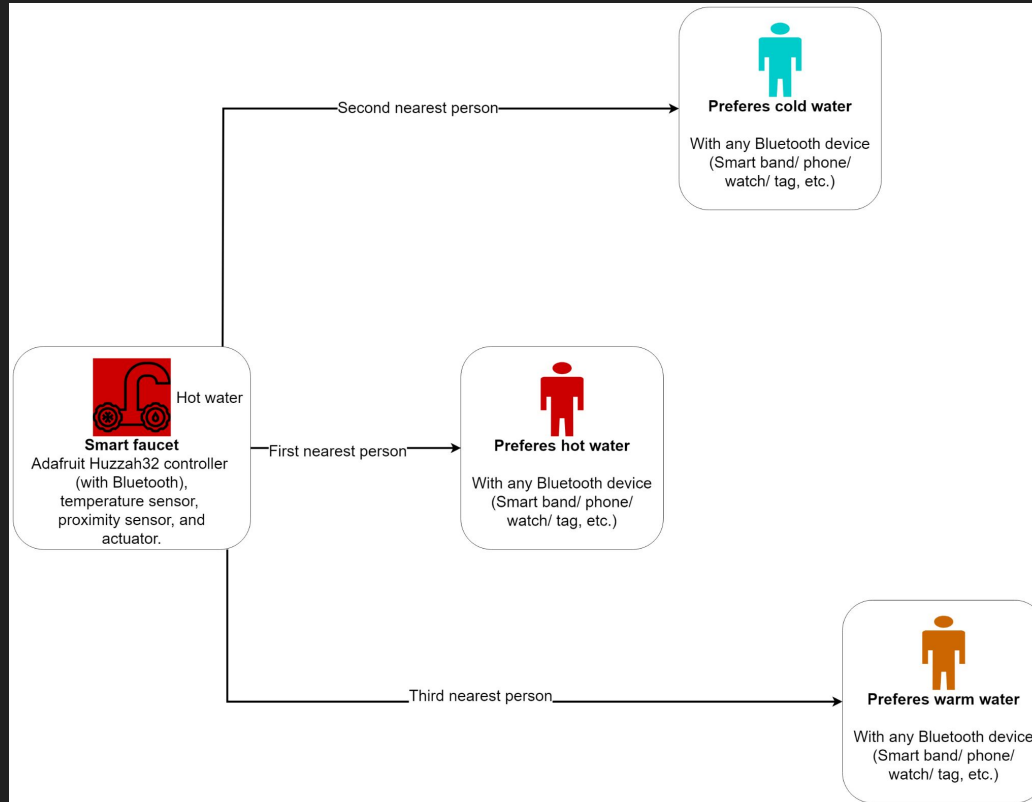
Benefit and value:

Protects your hand from minor frostnip or scalds.

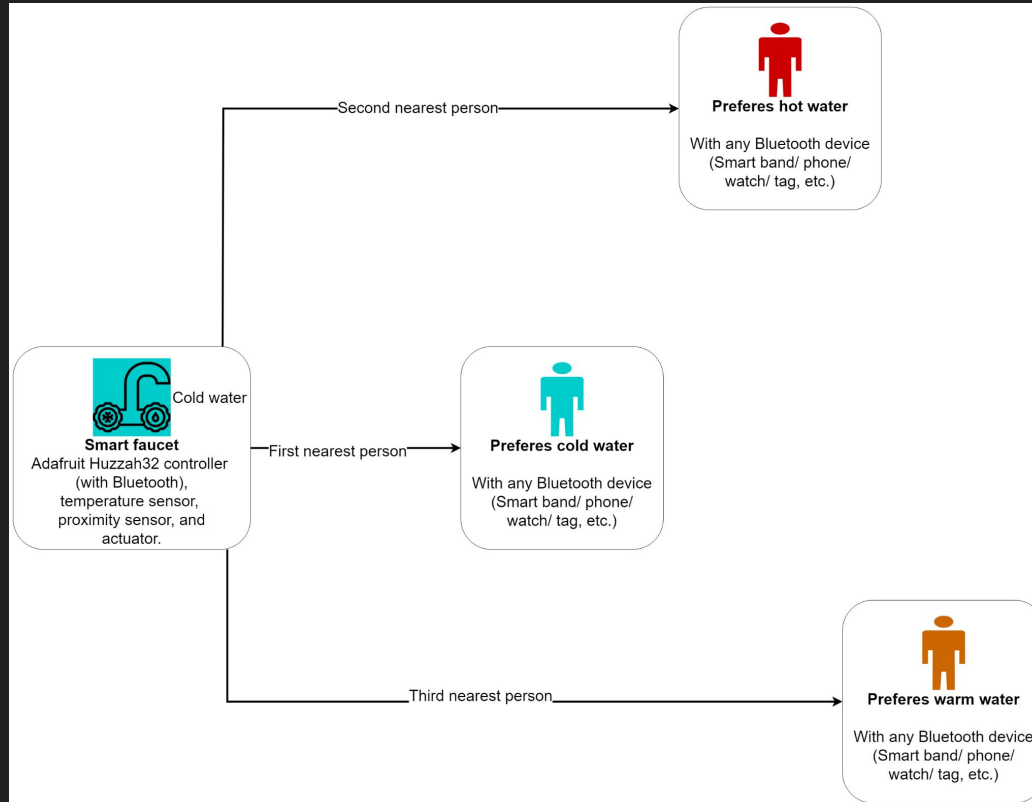
Reduced risk of contact with germs.

No more discomfort in handwashing.

Project block diagram 1



Project block diagram 2



Further improvements

Water temperature recommendation based on the,

- room temperature,
- Weather,
- Previous user data.

The Team



Mouliha Sree S. V.

M.Sc. Embedded Systems
Engineering Student,
University of Freiburg



Sabari Kannan M.

M.Sc. Embedded Systems
Engineering Student,
University of Freiburg