



SmartSync Homes

Presented by Celina Belleville, Mathias Pacheco
Lemina, and Zeeshan Rahman

Meet the Team



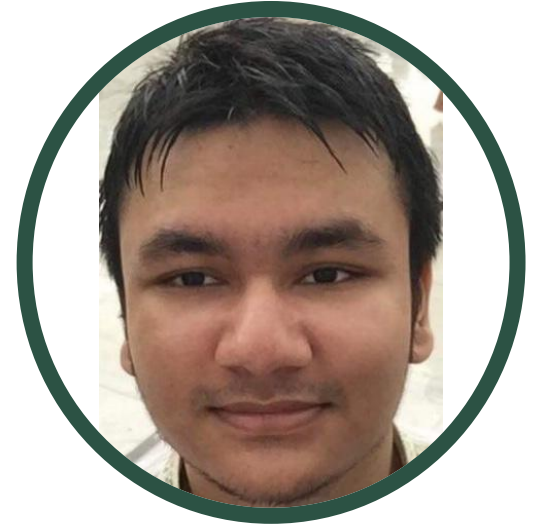
Celina Belleville

U1 Mechanical Engineering



Mathias Pacheco Lemina

U2 Computer Engineering



Zeeshan Rahman

U2 Electrical Engineering

SDG 3: Good Health and Well-Being



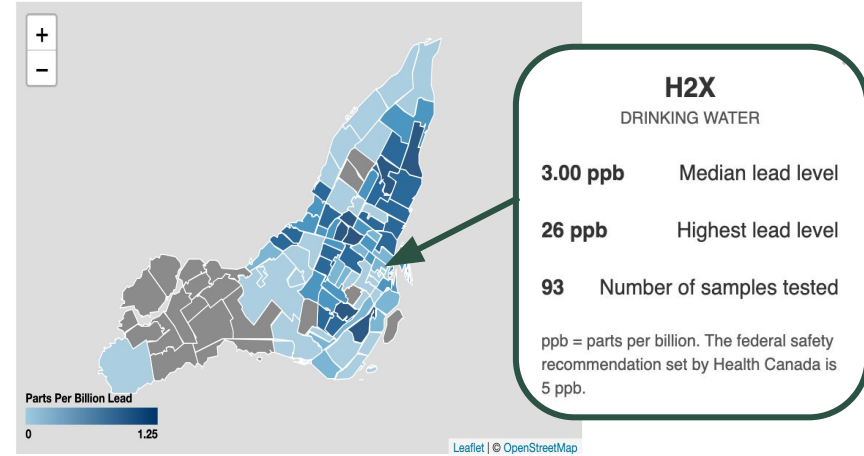
“the World Health Organization estimates 3.8 million people worldwide die every year from illnesses attributable to indoor conditions”

Our Research



Air quality

There has been an increase in air pollution in homes over the past few years



Water contaminants such as nitrates, bacteria and viruses, arsenic, fluoride, and lead are common in households

Our Research



**In extreme temperatures your house
is at risk**

(ex. Below 0°C your plumbing system could burst)

**If humidity levels
are too high you
run the risk of:**



Growing mold
and bacteria



Stuffy
conditions



Overall
discomfort

**If humidity levels
are too low you
run the risk of:**



Catching a cold
or infection



Dry and
itchy skin



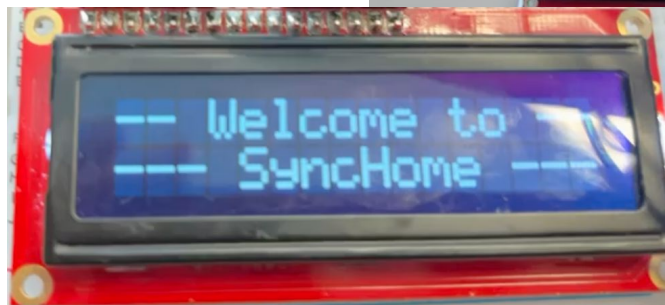
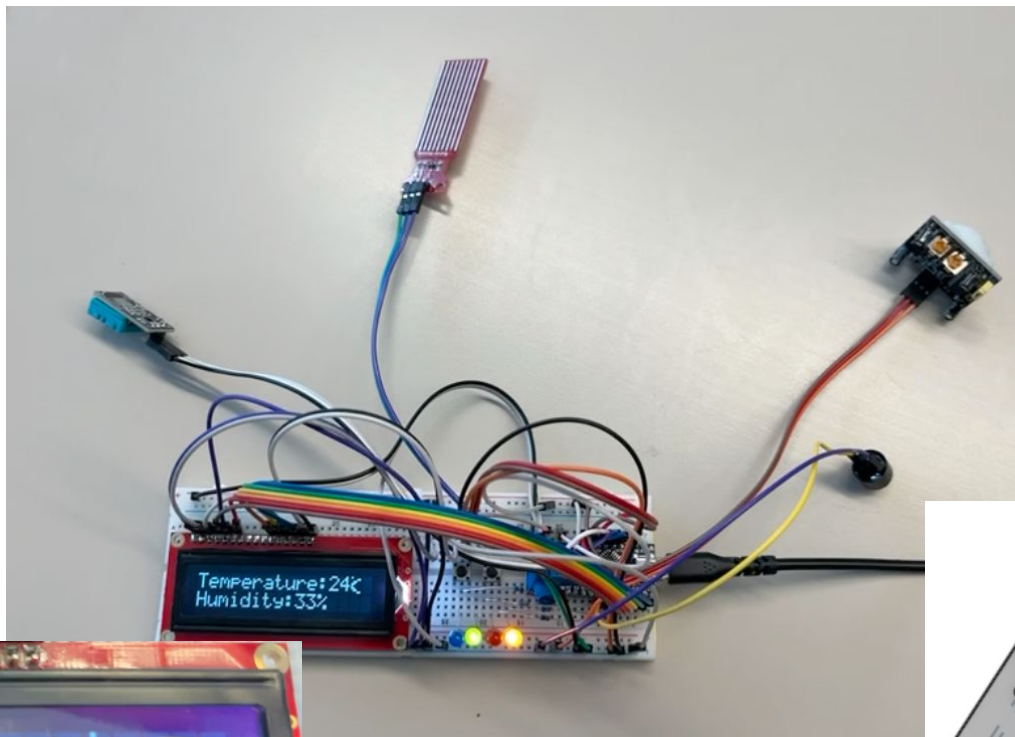
Damaging your
house's wood,
siding, or paint

**Humidity levels affect your comfort
and wellbeing**

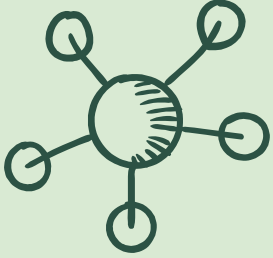


**Smart system to detect
unhealthy conditions in homes**

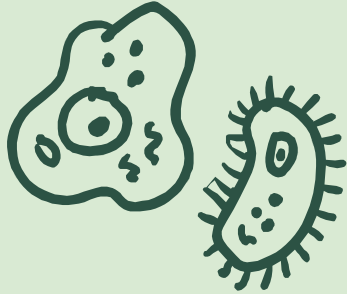
Introducing SmartSync...



What is SmartSync?



Air Contaminants



Water Contaminants



Temperature



Humidity

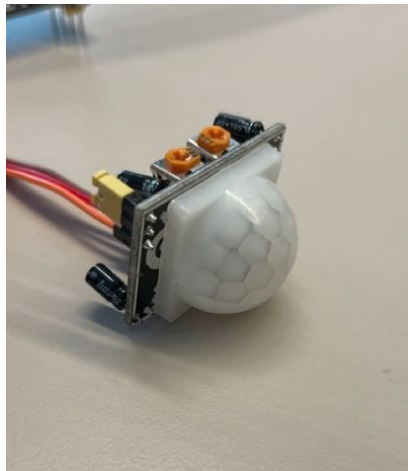
Imbedded health security system



Air Contaminants

Representation in our prototype:

- PIR motion detector (lack of proper sensor for the prototype)
- A green light will turn on if any harmful particles are detected above a given threshold
- A buzzer will emit a sound



SmartSync will detect:

- Carbon monoxide
- Nitrogen oxides
- Ground-level ozone
- Particle pollution (often referred to as particulate matter)
- Sulfur oxides





Water Contaminants

Representation in our prototype:

- Water level sensor
- A blue light will turn on if the level of harmful particles is too high
- A buzzer will emit a sound



SmartSync will detect

- Mercury
- Lead
- Arsenic
- Copper
- Zinc
- Nickel
- Cadmium

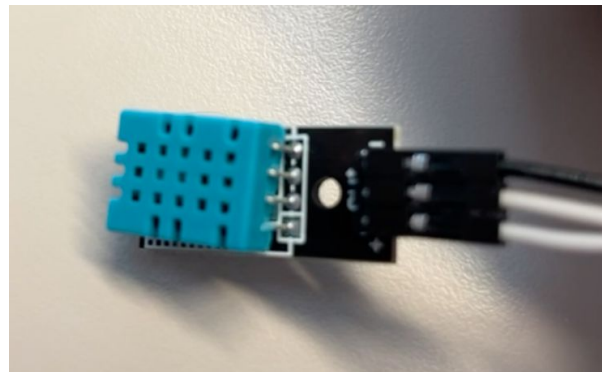




Temperature

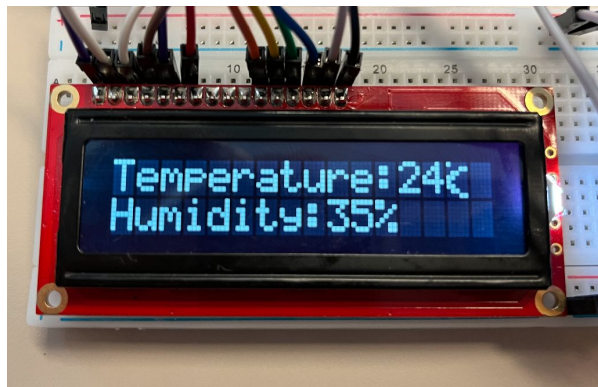
Representation in our prototype:

- DHT11 - Temperature and humidity sensor
- A red light will turn on if there's any unusual temperature
- A buzzer will emit a sound



SmartSync will detect

- Extreme heat
- Extreme cold

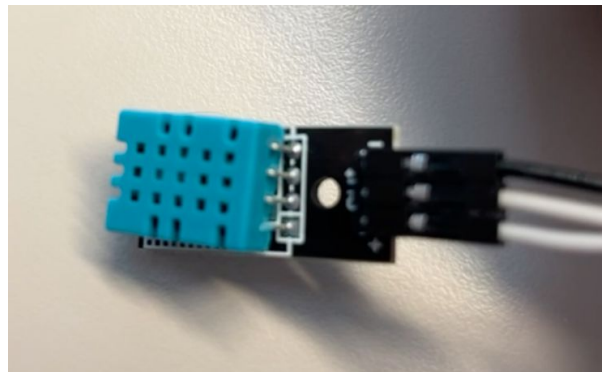




Humidity

Representation in our prototype

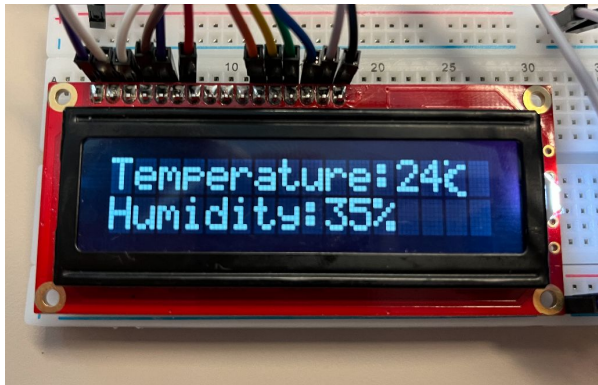
- DHT11 - Temperature and humidity sensor
- A red light will turn on if there's any problem with humidity
- A buzzer will emit a sound



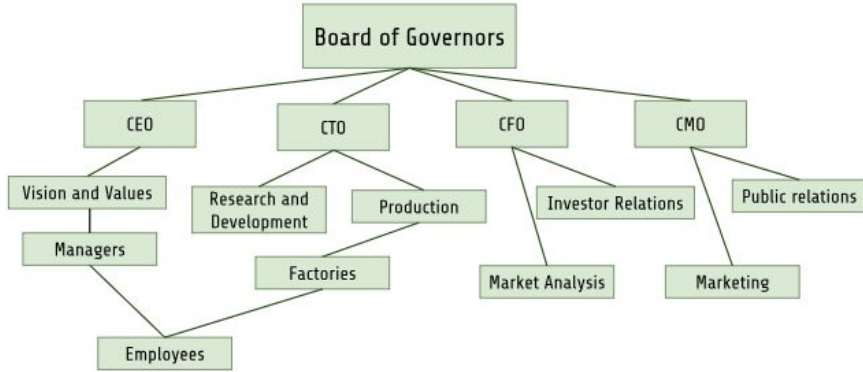
SmartSync will detect

- Unnaturally high humidity
- Dangerously low humidity

(When outside of a 30%-50% range)



Business



- Marketed to homeowners ages 25 and up
 - Advertised through television, magazine as well as through social media like Facebook, TikTok, etc
-
- There is no product in the current market that can match SmartSync's capabilities
 - Most water kits are one time use and wasteful, ours is reusable and **sustainable**

Budgeting

Table 1: Material Cost Sheet

Material	Quantity	Cost
Breadboard	1	\$10
Arduino Nano	1	\$35
Wires	15	\$1.64
LEDs	4	\$0.32
Display	1	\$20
Resistors	4	\$0.50
Buttons	2	\$0.30
DHT11 Sensor	1	\$3.60
PIR Sensor	1	\$5
Servo Motor	1	\$2
Water Sensor	1	\$4
Potentiometer	1	\$1
Other materials	-	\$17

**Table 2: Costs related to Manufacturing
One SmartSync System**

Item	Cost
Material Cost	\$100.36
Manufacturing (<i>labor included</i>)	\$150.40
Packaging/Shipping	\$40.00



Unit Price \$626

Budgeting (cont.)

Table 3: Monthly Operation Cost of SmartSync Homes

Item	Cost
Rent	\$1000.00
Employee salary*	\$2160.00
Bills (<i>electricity, wifi...</i>)	\$500.00
Marketing	\$1000.00
Research and Development	\$500.00

Table 4: Monthly Costs/Profit Assuming 30 Sales

Item	Calculation	Budget
Material Cost	100.36×30	-3,010.80
Manufacturing Cost	290.76×30	-8,722.80
Monthly Operations Cost	–	-5,160.00
Sales Profit	626×30	+18,780.00
Net Profit:		+1,795.40

**We are asking for \$100,000
in return of 6.2% of profits**

**Be Smart, Sync with us at
SmartSync Homes.**

Thank you for your time!

