

# Watchtower

Security that sees all

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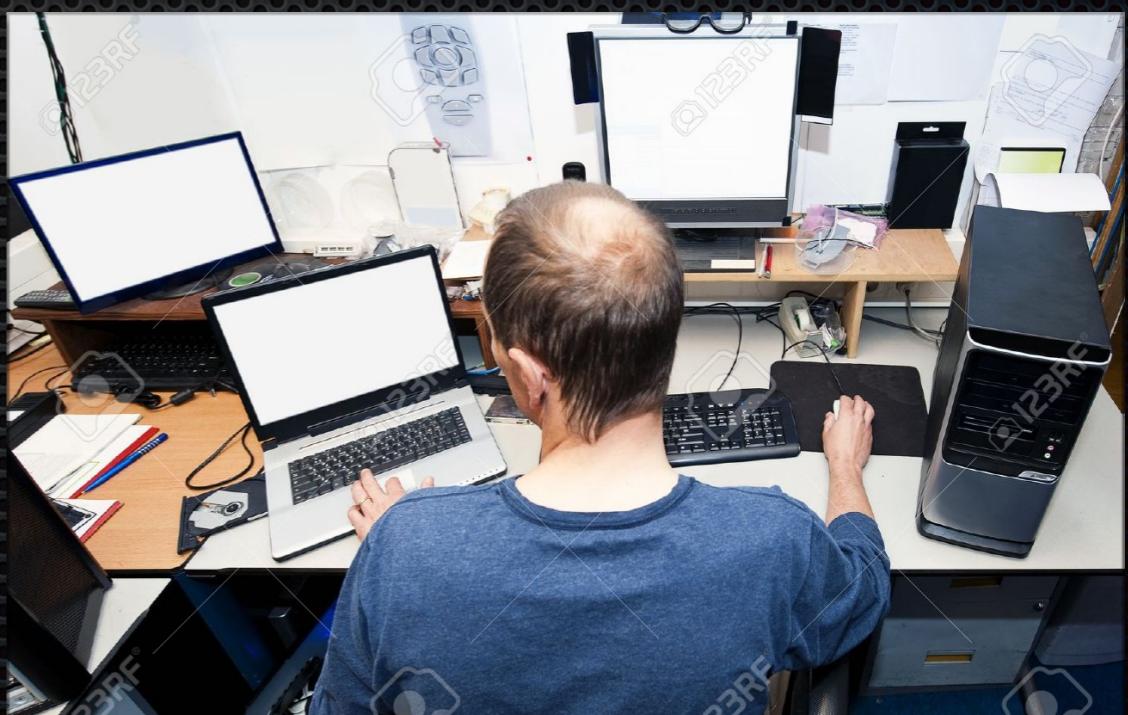
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# Problem

- There is less than ideal manpower in a work environment, particularly in data centers and server rooms.
- Workers are relied on more than ever to do multiple jobs.
- Workers cannot maintain their attention on multiple things at once.



“According to scientists, the age of smartphones has left humans with such a short attention span even a goldfish can hold a thought for longer.”

*—Leon Watson, The Telegraph*

“The results showed the average human attention span has fallen from 12 seconds in 2000, or around the time the mobile revolution began, to eight seconds.”

*—Leon Watson, The Telegraph*



Solution?

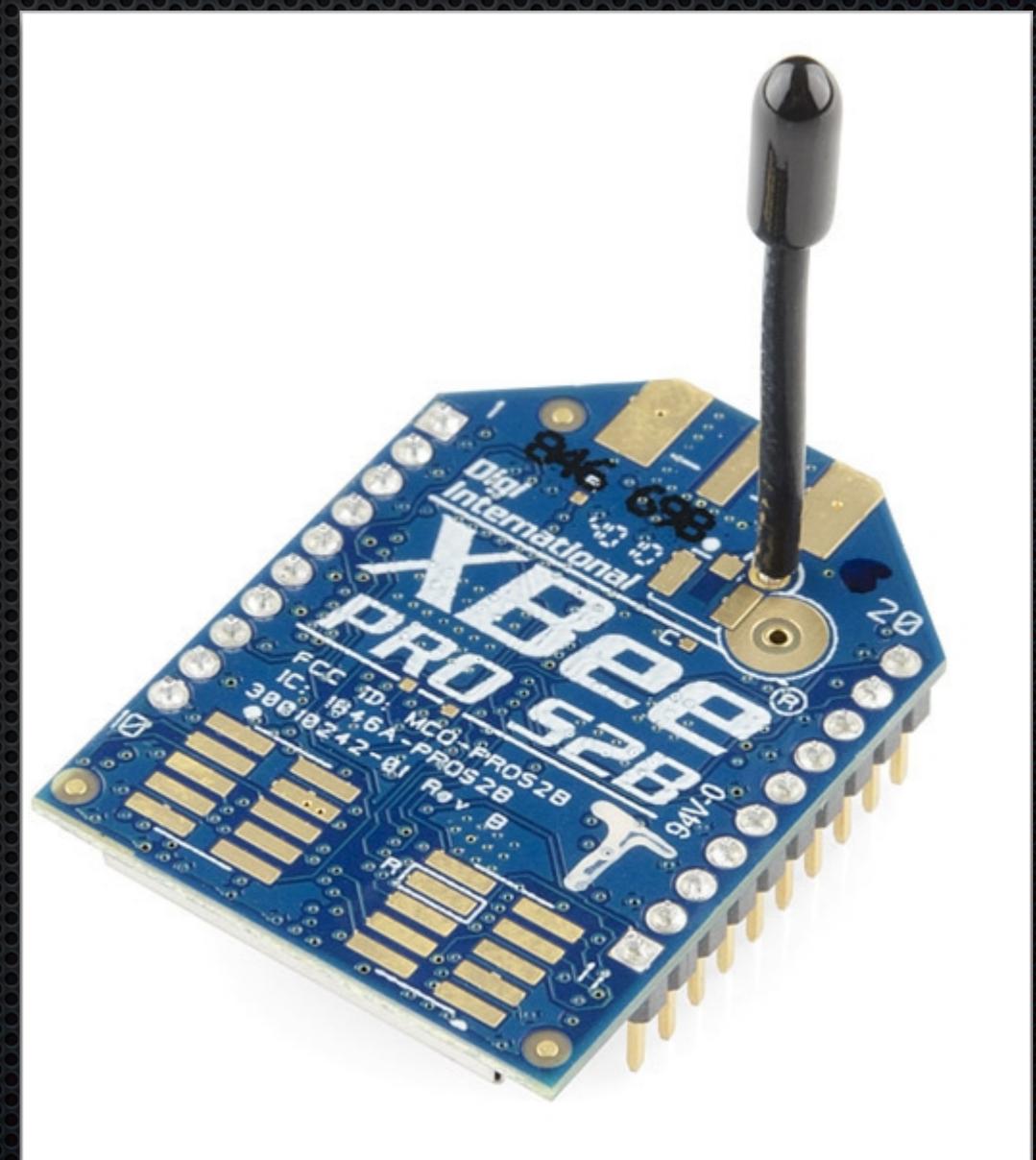
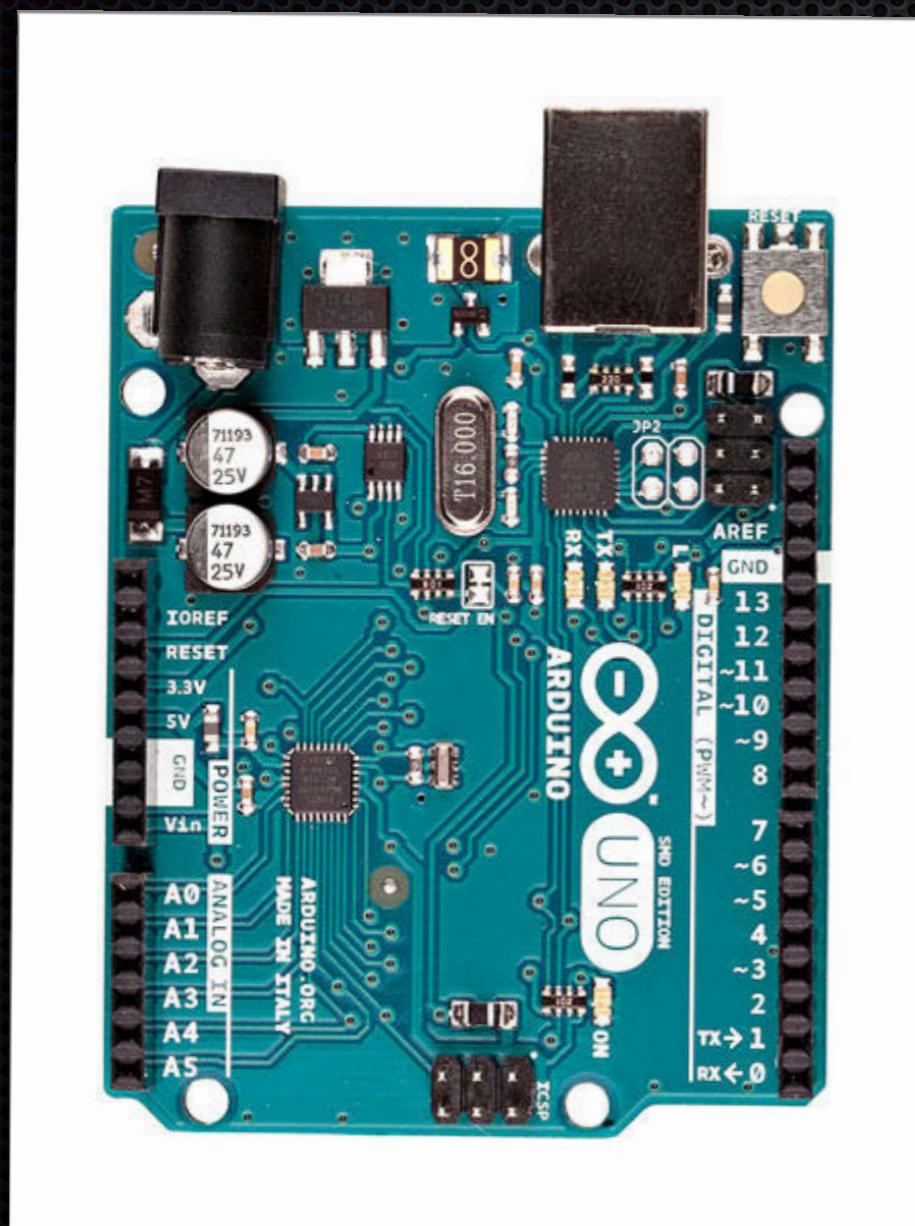
# The Real Solution

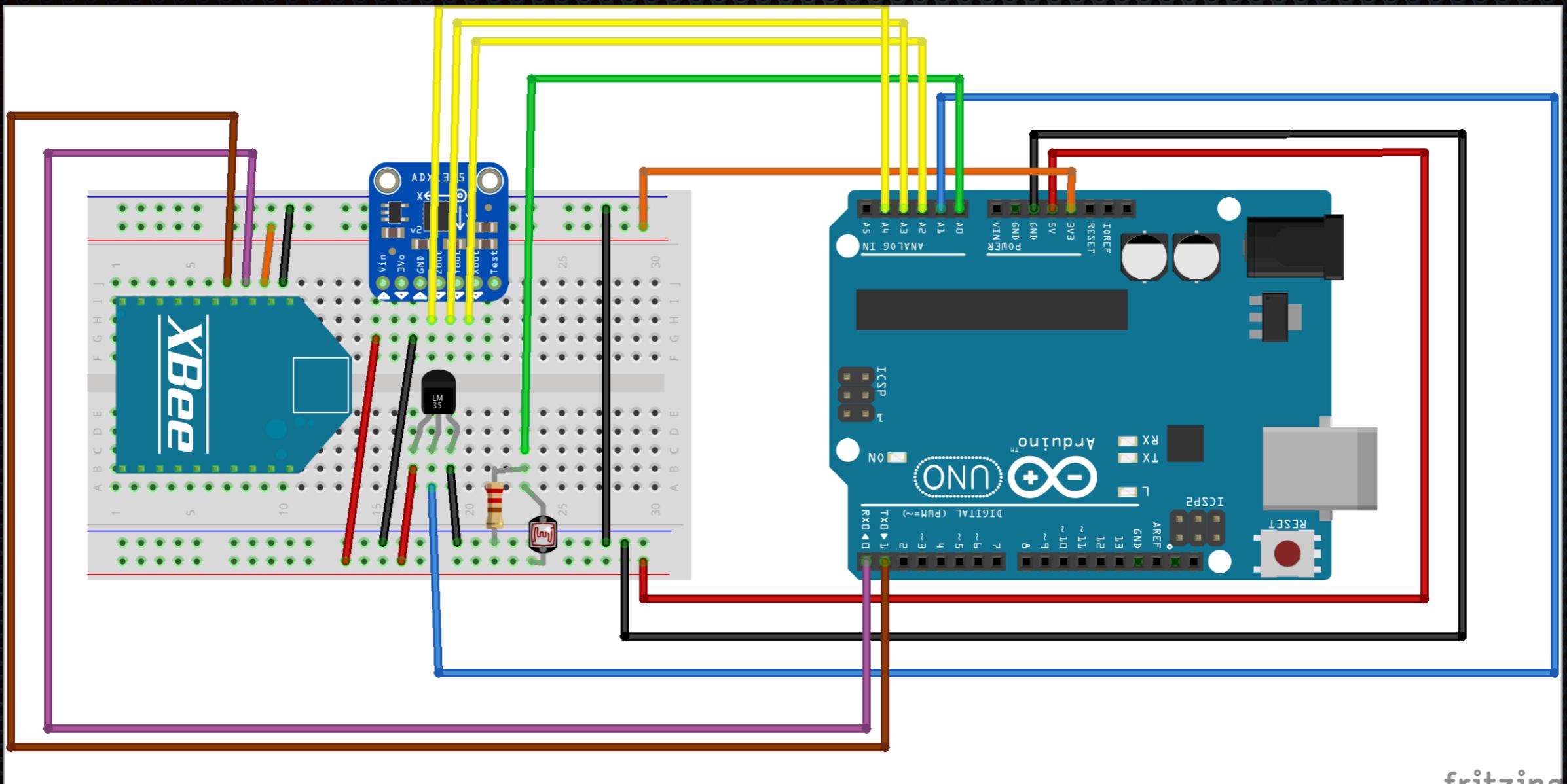
- Design a mobile-friendly piece of hardware that will let workers have peace of mind while doing other jobs.
- Design software that will notify us when security issues arise in a space such as a server room or datacenter.

# What is needed?

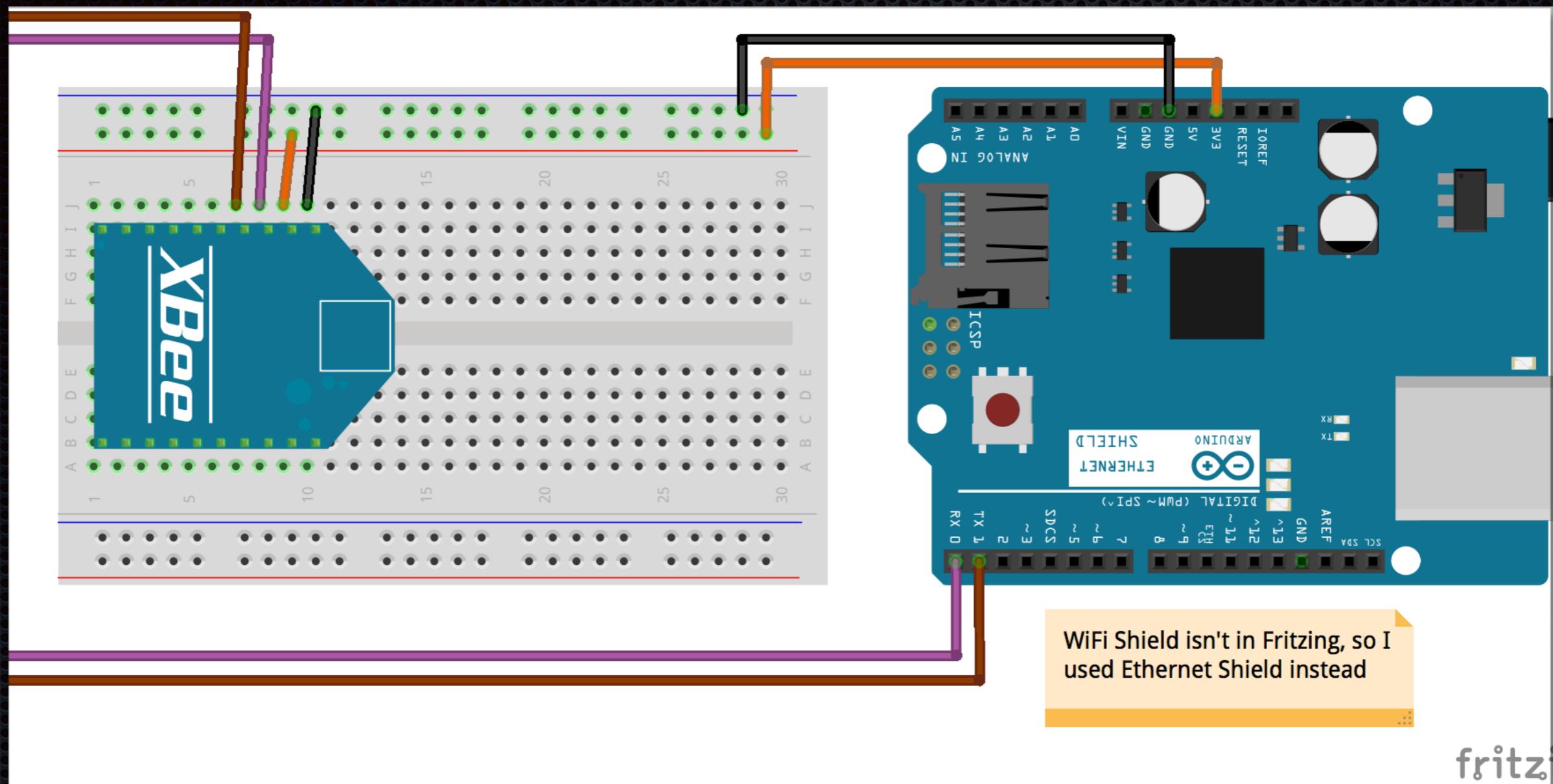
- Arduino Uno
- A webserver
- A applicable & mobile platform that can show real-time data and push notifications.

# Arduino





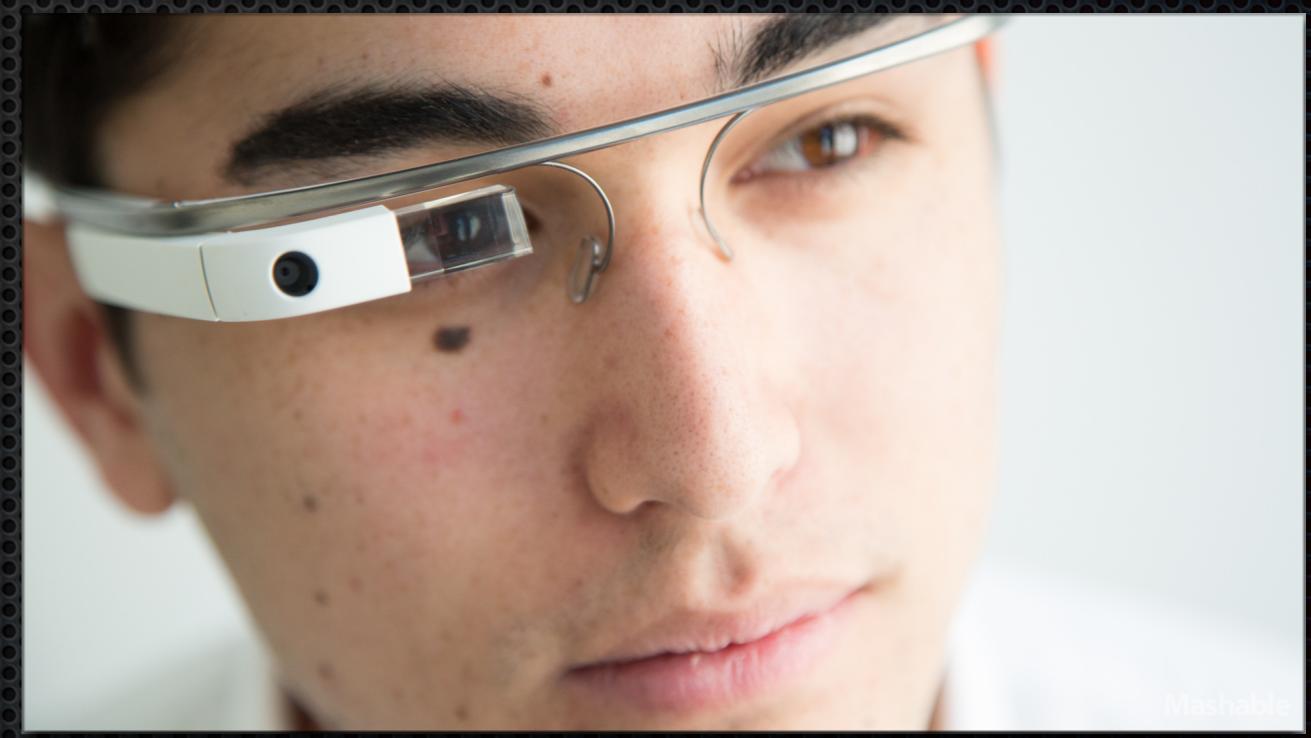
Sensor board with sensors that sends data to our main Arduino, using an XBee radio transmitter.



Main Arduino which receives the data, and then transmits it to the MySQL server to be pulled from a device using an application.

Where is this information going to be seen?

# Our choice as a platform: Google Glass

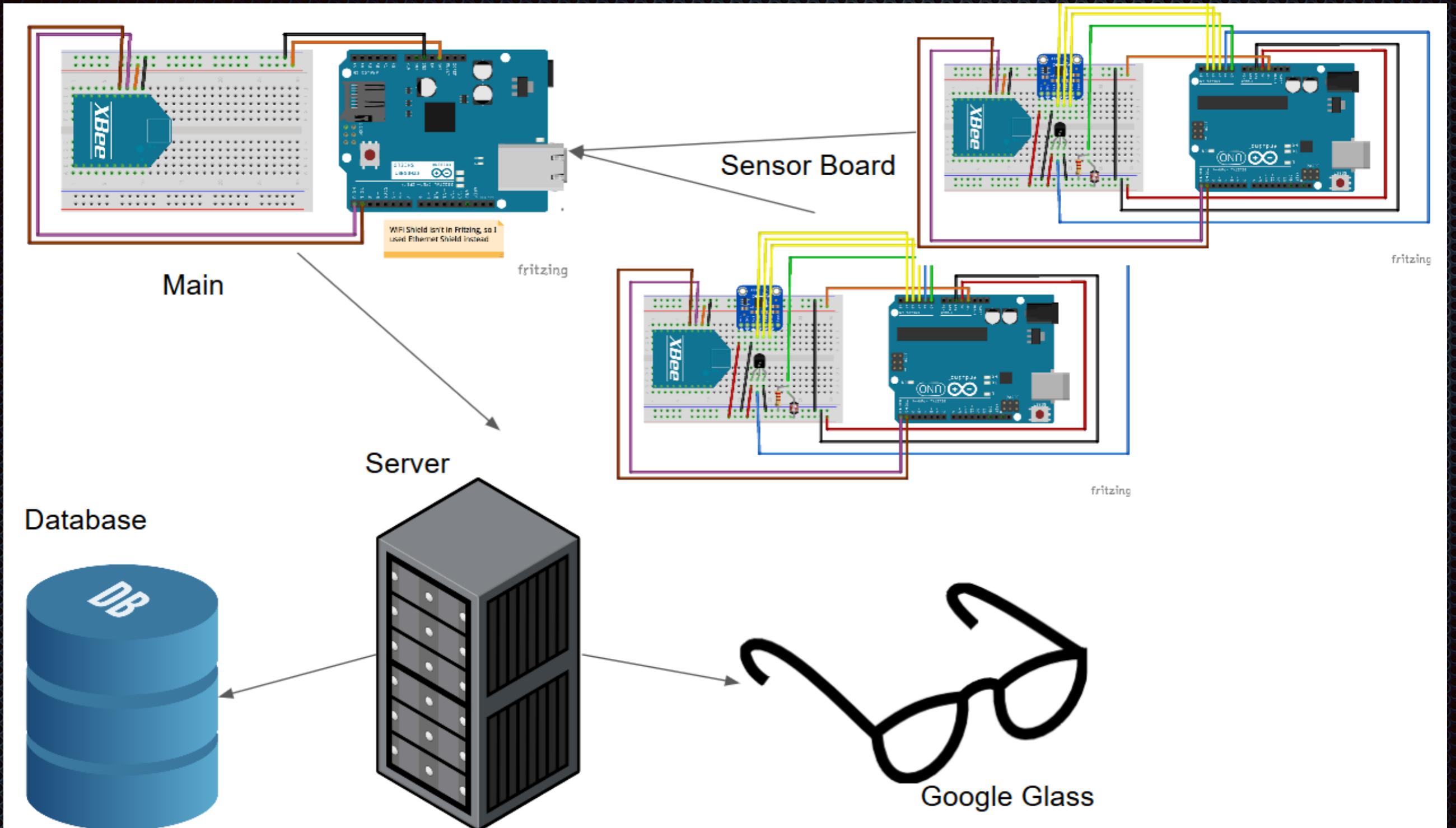


# What is Google Glass?

- Google Glass is a wearable that was originally made as a beta program in 2013.
- It is a hands-free, lightweight heads-up display that can be used to monitor, send, and receive data.
- Although rare and very limited support, it is a glimpse what can be done in the very near future.

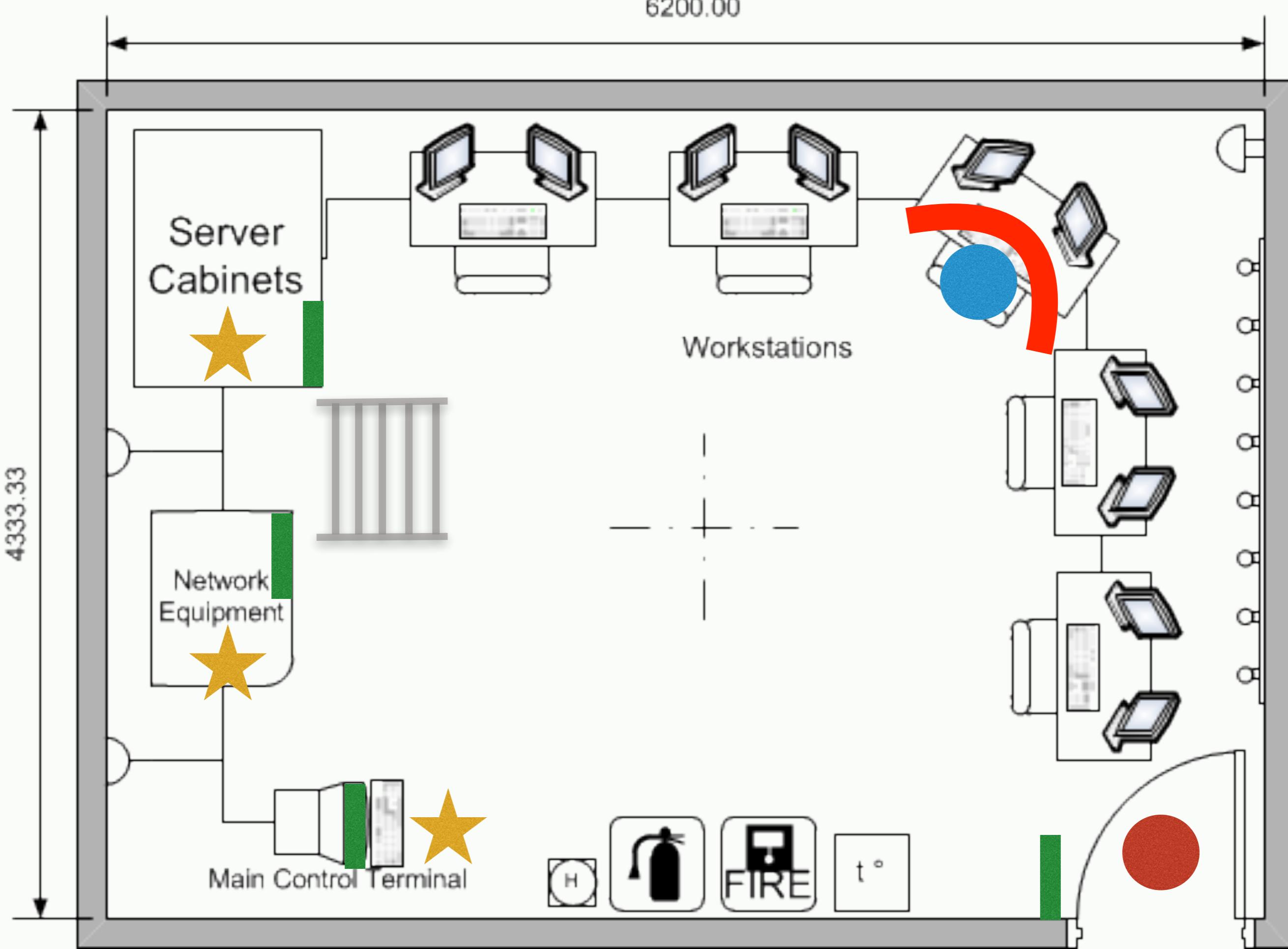
# Receiving data from the Arduino

- The Glass receives data from an application that is connected to the same server that the Arduino is connected to.
- Using a database generated with Amazon Web Services (AWS), the Arduino stores the data.
- The Glass then receives that data in the form of push notifications.



# Network Diagram

6200.00



Video



In the future, other platforms and wearables can be used.

Many companies have began developing for wearables such as Microsoft, Google (again), Samsung, Apple.

Snapchat has recently released its “Spectacles” which feature a camera, but no HUD (yet).

# Future designs?

Microsoft has recently released its “Hololens” which features an augmented reality lens that can give you real time information and data and it can even form polygonal images right in front of you.



Microsoft  
HoloLens

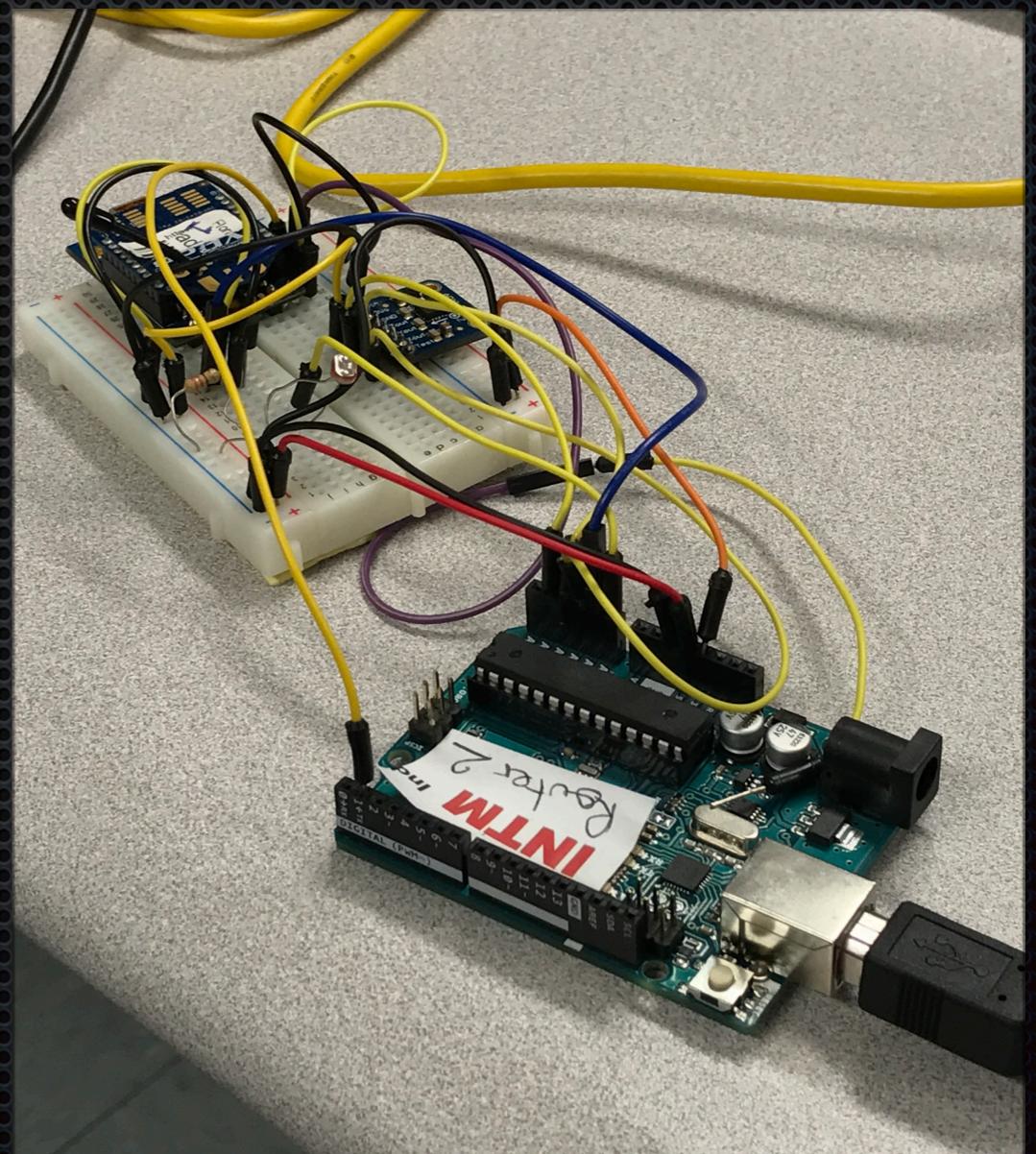
Windows 10

# Design Difficulties

- Limited support when researching communication between Arduino and Google Glass
- Google Glass is technically a finished beta, and at the moment is not supported.
- Designing and securing enclosures to mount our circuit boards remotely across a room.

# Recap

- Our goal is to make a mobile-friendly product that can effectively monitor the conditions of a room, and be able to tell you at a moments notice.
- The use of Arduino with radio communication, wifi networking, a database, and a web server pushing data to a endpoint are extremely important.



Thank you