Smart Thermometer to Support New Normal - COVID-19

by Ankit Gupta

These are uncertain times as we continue to fight the pandemic. Social distancing and taking whatever steps we can to stay safe is the new normal.

Even so, there is a need to get the economy back to normal. Organizations are adopting the best security and employee safety standards they can, but there is always room for technical enhancement.

The pandemic has given every technocrat new opportunities to study and innovate simplified solutions for a socially distant world. Technologies that have been around a long time such as RFID, Bluetooth, NFC, and QR codes will be adapted for use in new contactless IT solutions.

One of the great challenges in IT today is providing a secure environment to access spaces without making physical contact. For example, you may see restaurants operating in a self-servicing mode to facilitate order pickup or contactless delivery. Riders may want to know whether their cab driver has any health issues before entering the cab. Employees need safeguards to ensure the office spaces they're entering are free of COVID-infected coworkers.

In this post, we'll explore how to develop automated (without any need for a robot), COVID-safe thermal access controls for various use cases.

COVID-Safe Thermal Access Control Concept

We have all seen technologies that help us manage hands-free physical access for office readers from a mobile application, remote unlocking using location sensing, or authenticating a visitor using QR code. I will be referring to an access provider mobile app that handles access management, a service a major management provider can fulfill.

We have also seen gadgets that help track vital signs and provide real-time health data. These health bands have temperature sensors that regularly monitor the wearer's temperature. This technology is simple and already familiar to many people.

Tough times give an opportunity to think through, connect the dots, and prepare new solutions without completely reinventing the wheel.

In offices, thermal screening of body temperature is already being done manually, or with robots.

Automated COVID-safe thermal access controls can help ensure a safe environment while reducing the manual labor involved — and without the need for robots.

Use Case: COVID-Safe Physical Access to Buildings or Township

Nowadays, offices are doing thermal scanning to ensure the person is not COVID-infected.

Consider a cloud-to-cloud connection. Your access provider mobile app can be connected to the health band cloud to fetch each employee's health vital statistics. If there is any deviation from any health vital parameter (such as their temperature not meeting the threshold limit), access is prohibited. Further, the technology could ensure that the person denied entry receives appropriate health advice.

Have a look at this possible architecture. Is this simple enough?
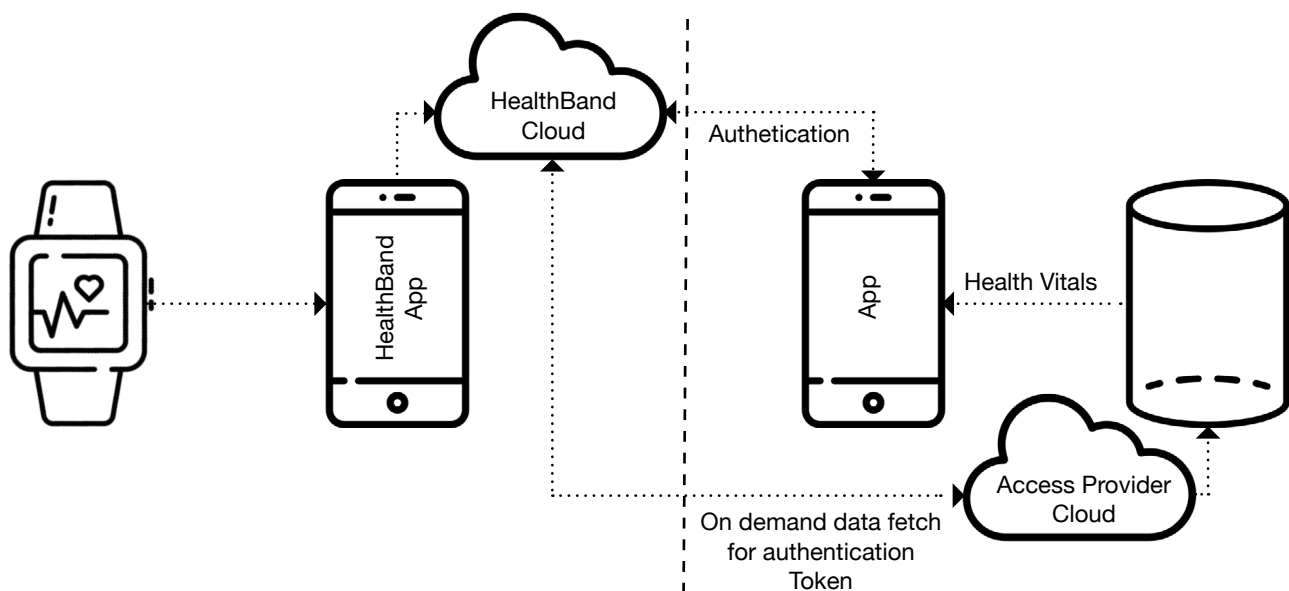
We will not get into the details of how the cloud-to-cloud API connection would be made as there are proven industry solutions in the market already, such as:

- Credential-based access management with access tokens.
- IP whitelisting.
- Certificate-based authentication.
- Basic authentication.

This is something that can be quickly deployed as it uses the existing infrastructure solution with an additional ask for cloud-to-cloud connections between two service providers for data exchange.

We can extend the existing technologies to ensure that we will not allow an employee suffering from fever that might be COVID-related to impact the office as a whole.

Any access management mobile app that can be used in office or residential spaces can be used to integrate with this solution.

However, not all of us may have seen such an app. Let me simplify!

## Use Case: COVID-Safe Cab Booking

Many of us have booked an on-demand cab by using popular services in India like OLA, Uber, etc.

A cab booking process has many steps. For an immediate booking, the app finds available cabs with minimal time to reach the customer and also shares the driver details with the rider. You can also book a cab in advance and on the ride date you can use the pre-booked cab number.

Although all cab companies are taking every safety measure they can, a customer might want to verify that the driver of the cab they are using has not been suffering from fever.

This technology can provide a COVID-safe way to board a cab.

Here is a basic integration we may see in the future. Of course, there may be changes or upgrades in design, but I have kept it simple to explain.
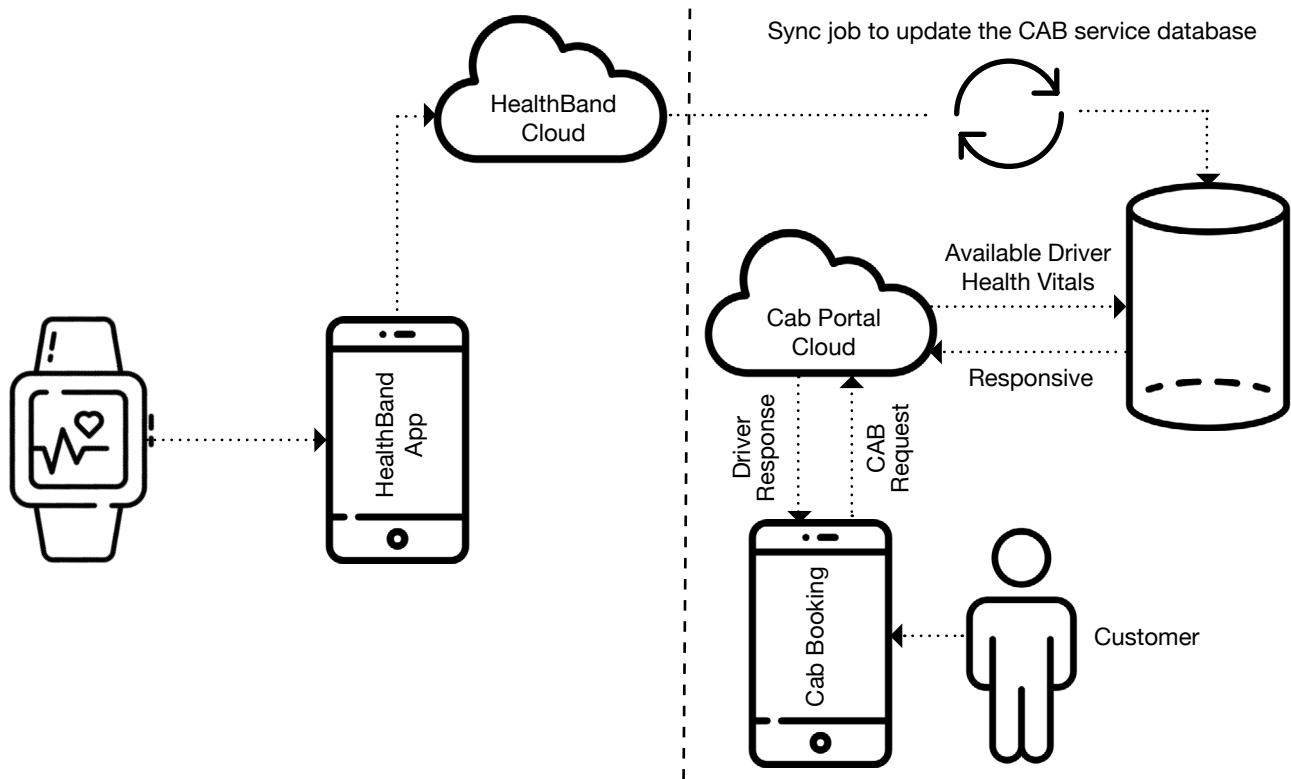
Think of it as a mandate from a cab company that every cab driver must have health bands that will capture body temperatures and health vitals.

Now, following the proposed architecture that we have drawn above, before any cab requests approval from a driver, his health vitals will be checked. These vitals should be made available to customers, as well.

If there are COVID symptoms such as high body temperature, the booking will be denied.

Any use case can be extended as needed. For example, the cab companies could provide a weekly temperature chart to give customers extra assurance.

This simple concept can be implemented across almost every service industry. It can provide assurance to their customers that the company and its employees are following and abiding by all safety measures.

In the near future, we may see restaurant chains keeping tabs on their staff using this technology, or even the aviation industry may use this in the future.

We look forward to seeing many industries deploy such solutions, to ensure we are safe and secure in this new normal post-COVID-19.

About the Author

Ankit Gupta is Specialist Technology with GlobalLogic. He has hands-on experience in application architecture and development. Over the past 16 years, he has developed and designed various large scale projects across different domains on Microsoft and cloud technology.

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