

The A.S. Watson Group is the world's largest health and beauty retail group with over 15,000 stores across the globe.



Challenge

The client needed a low-cost hardware/software solution to track how much time and where employees spend time in the store, how customers are walking through the store and where they spend the most time. This solution gives them a great source of analytic data that can be used to improve customer experience, optimize employees' routine, etc.

The solution had to be as cheap as possible, yet easy to install (no wiring or extra steps required for ordinary employees) due to the large number of stores (15,000) where the solution had to be installed.

Solution

We went with ESP32 firmware that tracks WiFi/Bluetooth devices and sends data to the server for post-processing. Then, we developed a system that stores and processes data about customers from the ESP32 devices and displays the information to the end user.

We also created an inexpensive device that anyone can simply plug into the socket, and it will automatically start collecting and sending data to the server.

Tools and technologies

- ASP.NET
- SQL
- HTML
- CSS
- C (embedded development)

Scope of work

- Architecture engineering
- Decisions on the technical stack
- Front-end development
- Back-end development
- Firmware development

Results

- MVP (Minimum Viable Product) version developed in a month by a team of 2 engineers
- A low-cost solution for tracking store visitors
- The system allows viewing the most popular sections of a store, check how many people are standing at the checkout, track where the employees spend most of the time in the store