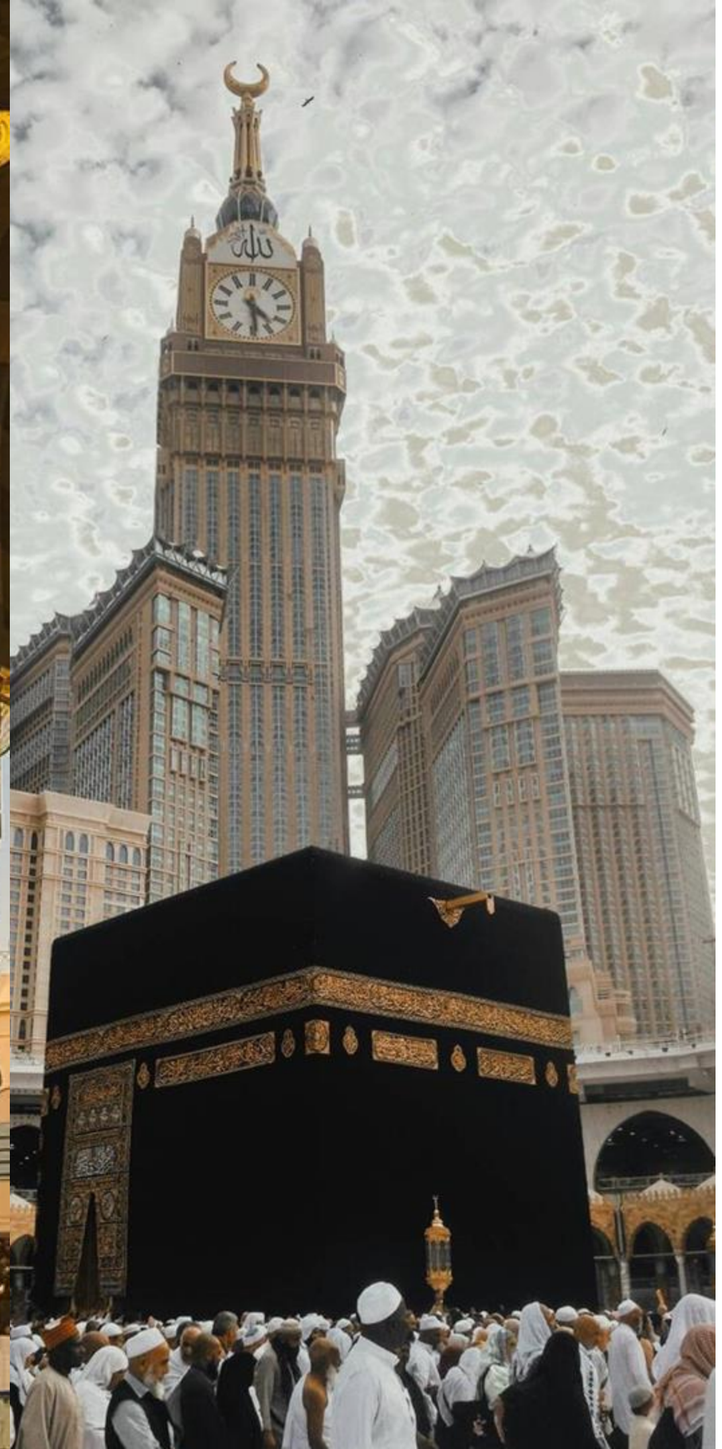

ZAMZAM DISPENSER MONITORING

Course Project – Semester I (Fall 2023 - 2024)

CS487 - Internet of Things

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PROBLEM STATEMENT

The **problems** that we **aim to address** are the **manual checking** and **hourly tours** required to **monitor** and **replace Zamzam dispensers**. **This** process **consumes time** and **manpower** that could be utilized more efficiently.

OUR SOLUTION

This project aims to establish a **comprehensive monitoring system for** water levels in containers situated at Al Haramain, Al-Masajid Haram, and Al-Masajid a Nabawi, with a specific focus on **Zamzam water.**

Our solution utilizes **ultrasonic sensors** and **ESP8266 devices** attached to each container to accurately measure water levels. Then, the data is transmitted to a gateway and stored in a **cloud-based database** using ESP8266 devices. Each container also has an **LED indicator** that illuminates when the water level reaches a pre-set threshold, providing a visual alert. We have developed a **web page dashboard** for easy access to real-time water level updates, ensuring efficient and uninterrupted water supply management.

PROJECT BENEFITS

- Implement a **24/7 automated monitoring** system for Zamzam dispensers.
- Enable **real-time actions based** on r**eal-time data updates.**
- Provide a **comprehensive visual representation** of the water levels in **Zamzam dispensers** at Al-Masjid al-Haram and Al-Masjid an-Nabawi.

Project Requirements

Hardware Requirements

Ultrasonic Sensor

LEDs

ESP8266

Resistors

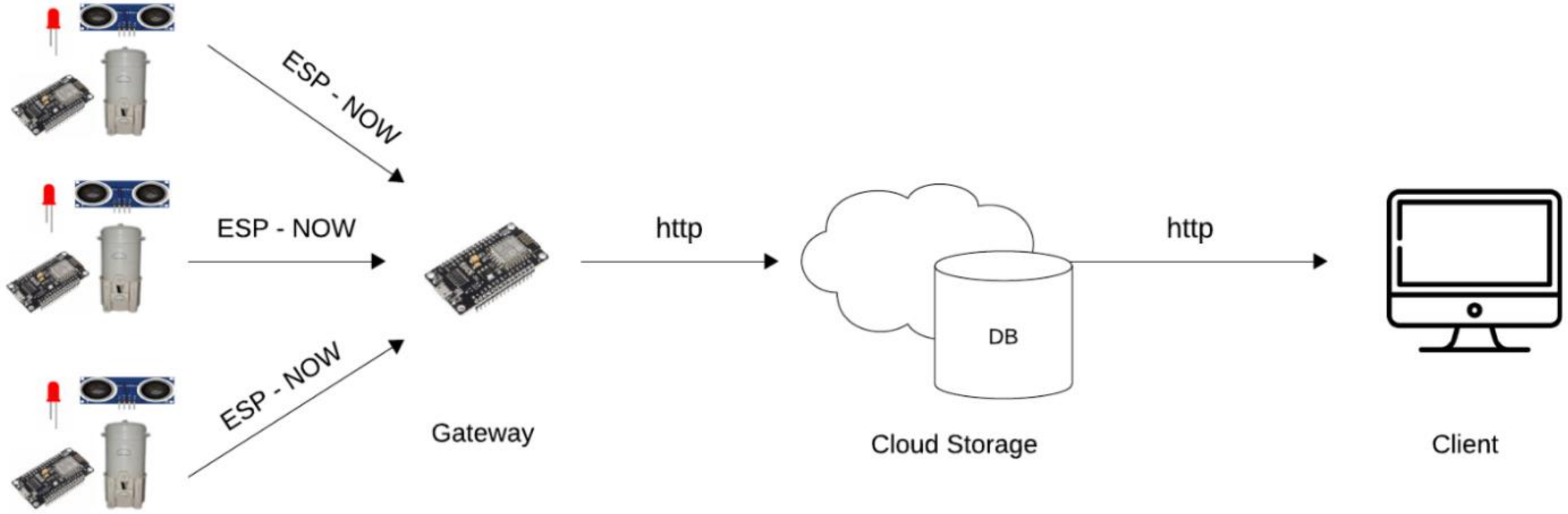
Software Requirements

Firebase

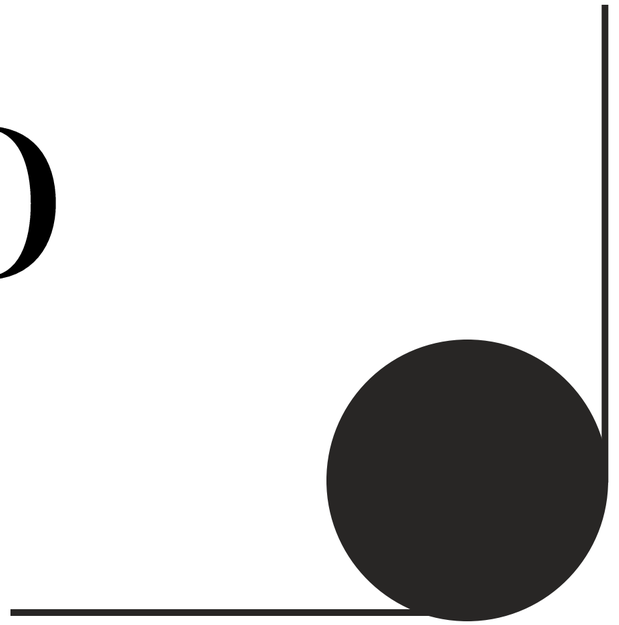
Arduino

Web Technolgies

System Architecture



DEMO



THANK YOU !