

# Baba: An Internet of Things Based Neonatal Monitoring System

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## Introduction

The #1 concern of every parent is the welfare of their children. For years, baby monitors have been available on the market to enhance the safety of children, but they only offered basic features. In recent times, baby monitors with modern features have arrived on the market, but incur excessive expense on parents. The goal of this project was to develop a baby monitor with an extensive array of features that give parents peace of mind without the hefty price attached.

## Overview

In the research phase of this project I conducted surveys in order to define a more purposeful goal. My decided goal was to develop a monitor of equal (or greater) quality to those on the market which matched or was less than €77. The Monitor contains the following features (See Feature List):

### Feature List

- Smoke Detection
- Carbon Monoxide Detection
- Temperature Monitor
- Sound Detection
- Video Feed
- Humidity Monitor
- Companion Website/App

**FACT: A concern for majority of the 100 parents surveyed was the security and privacy of their children.**



GitHub Project



Thesis

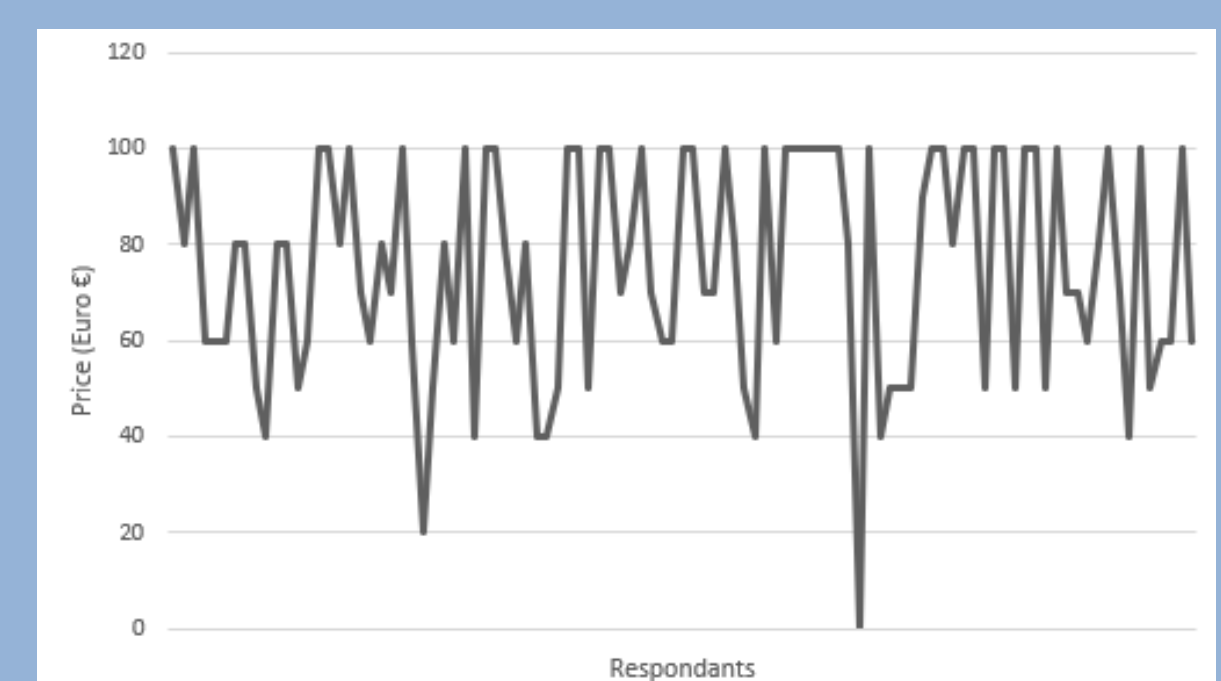


Fig 1. Survey Results – Payment (€77 Avg.)

Each monitor in this project (in Fig 2. there are 3) will be built using Raspberry Pi 3's. Sensors will be attached and will programmatically transmit data to and from the database. Data stored by the Raspberry Pi is then retrieved by the applications and is processed.

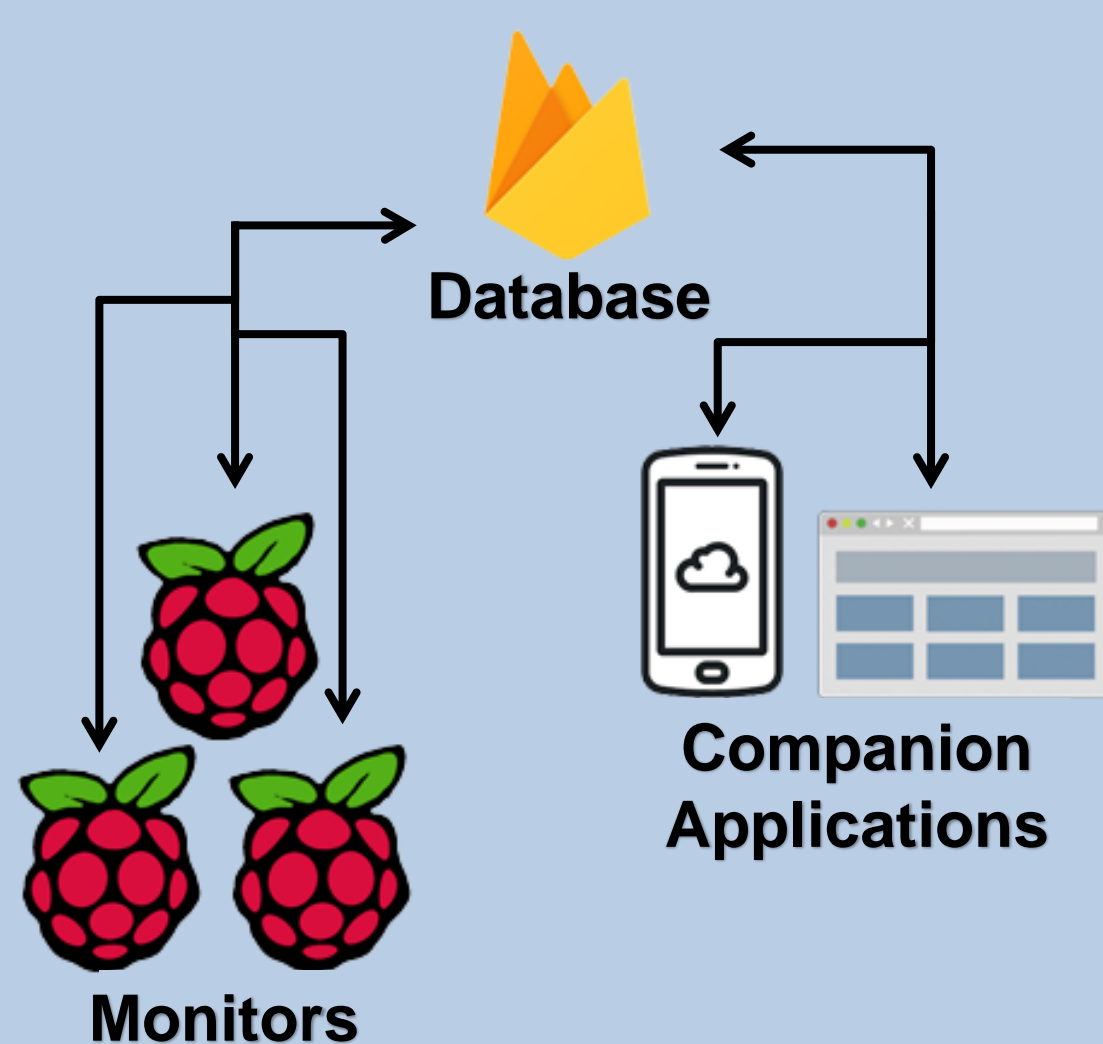


Fig 2. Project Architectural Layout

Once processed the applications interface will dynamically change to enable user interaction. Data from the applications is also transmitted to the database programmatically.

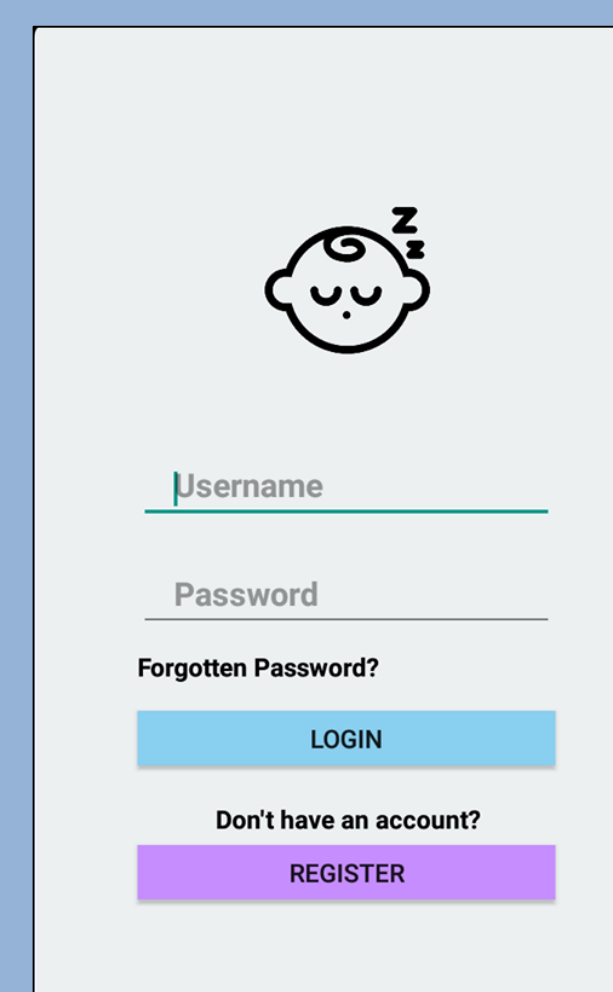


Fig 4. Mobile App Screenshot

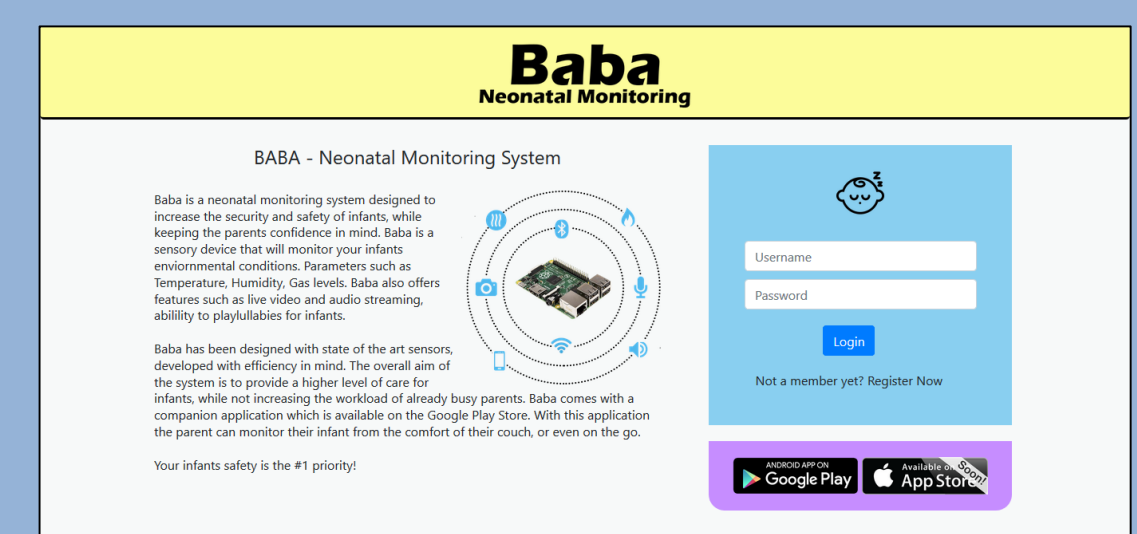
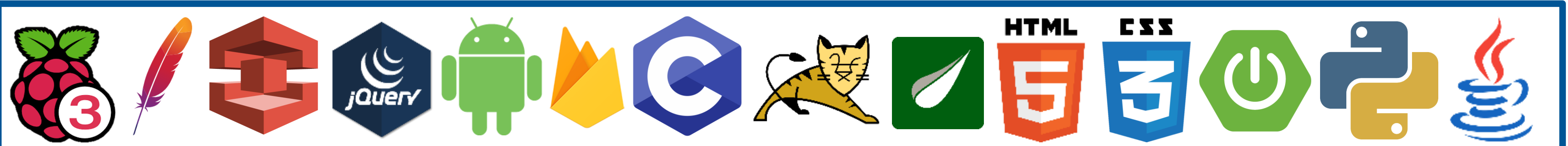


Fig 3. Web Application Screenshot

## Conclusion

Although, this project was feasible, and achievable. There were many challenges along the way. Mainly these challenges revolved around hosting and streaming services. Streaming the video securely, was a struggle. Many of the services available require payment.



## References

1. Survey of Kinsale Parents, Survey Monkey, January 2018

## Acknowledgments

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