

Pillock

Prescription Dispensing Device

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PROBLEM STATEMENT

Prescription nonadherence is very common and occurs when a patient fails to take medications as prescribed; this can be due to a multitude of different factors.



Figure 1. This is the deployable prototype of our pill dispensing device. The touchscreen display is seen at the top, with the fingerprint scanner attached to the left of it, and the dispensing station on the bottom left where the pills come out. Our brand logo can be seen on the left and right panels of the device.

BACKGROUND

There are many factors that may lead to higher rates of medication nonadherence. The cause can stem from the patients themselves, the medical care system, or outside factors. Our project is a fingerprint activated medication dispenser that will ensure proper use and management of prescription medication using an alert system for both care takers and patients. Our design will aim to address many of the issues that lead to nonadherence.

SUMMARY OF WORK

Our device features a functioning fingerprint scanner, pill dispenser, embedded software for a touchscreen, a web app and secure locking mechanism. Our device dispenses pills one at a time until the prescription defined by the user on the website is filled. The touchscreen ensures that our product is user friendly. The area where the pills are stored and refilled can only be accessed by authorized users with a master pin. The pills are dispensed into a removable cup on the bottom left of the dispenser.

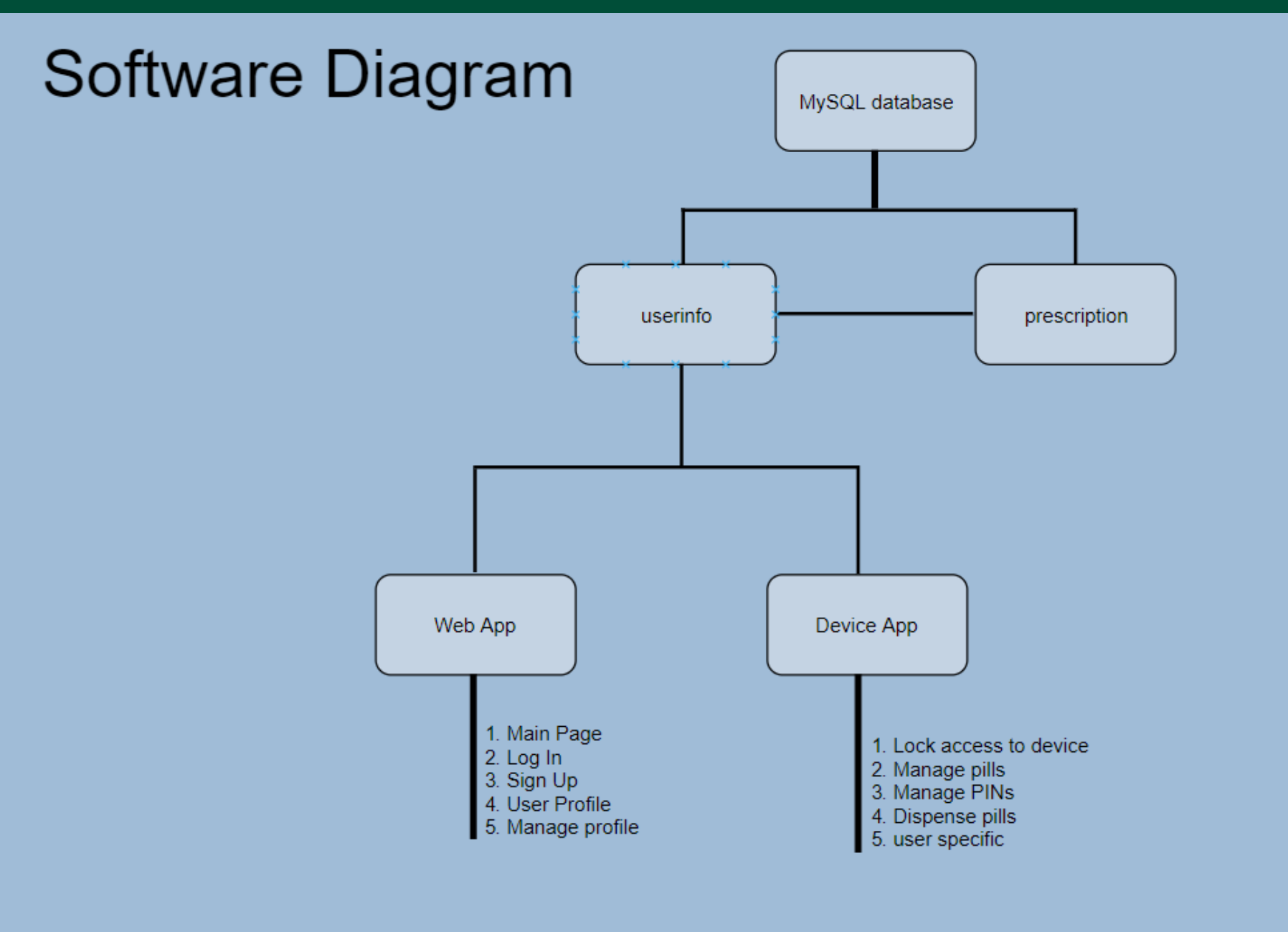


Figure 2. The information that is used

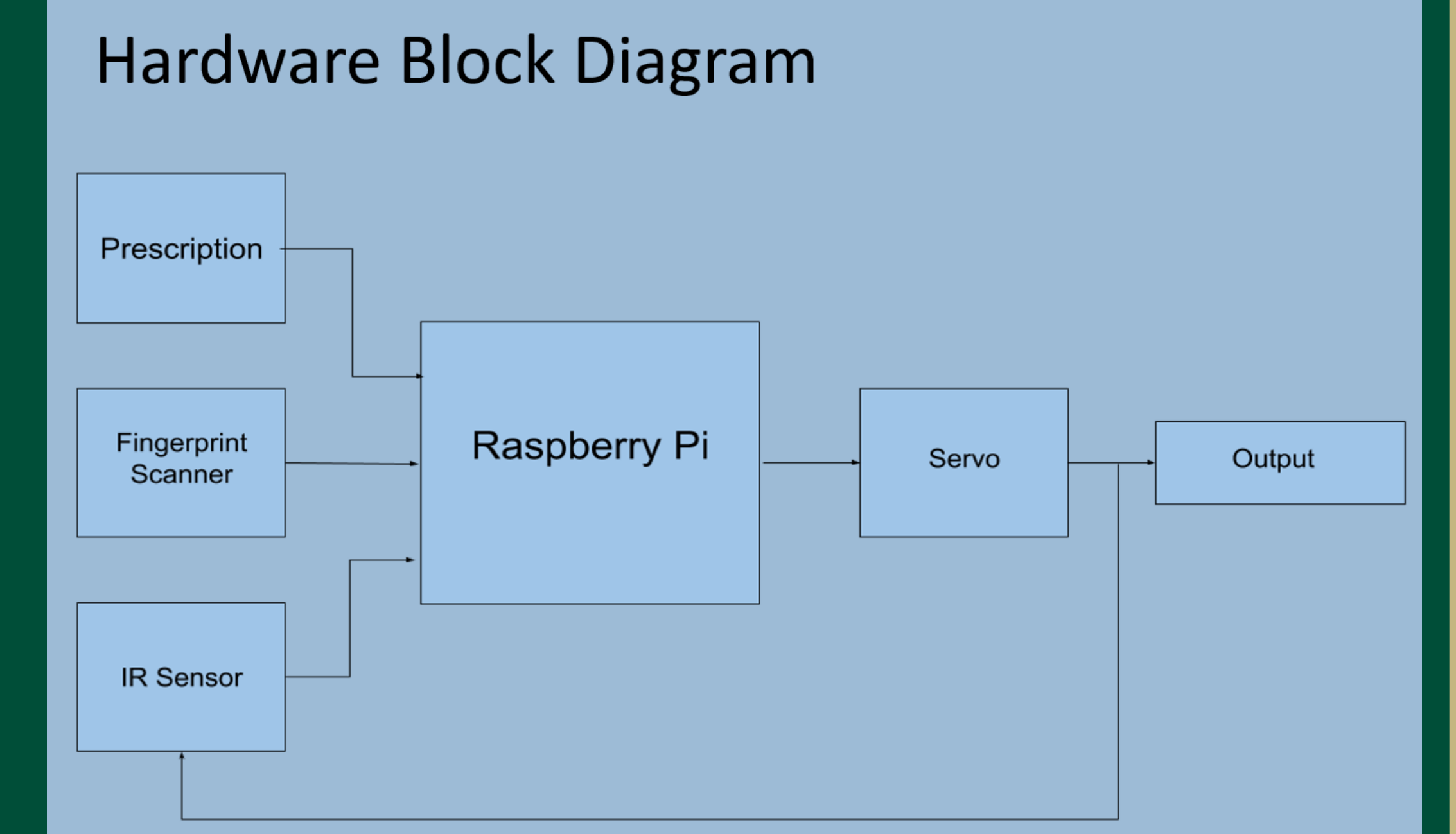


Figure 3. The hardware components will be driven by the Raspberry Pi.

IMPACT ON COMMUNITY

This device will have a positive impact on the community and it can be useful for people in many different circumstances. Forty-eight percent of all Americans take at least 1 prescription medication, and seventeen percent take 3 or more medications. Our product will be able to help many people manage their medications and can help reduce some of the cases where nonadherence was a cause of:

- Physical/mental impairments
- Complex prescription regimens
- Drug abuse
- Forgetfulness