

stitch

project 1 | ai wearable

ai garment for
managing eczema

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Design & Prototype, Fall 2022

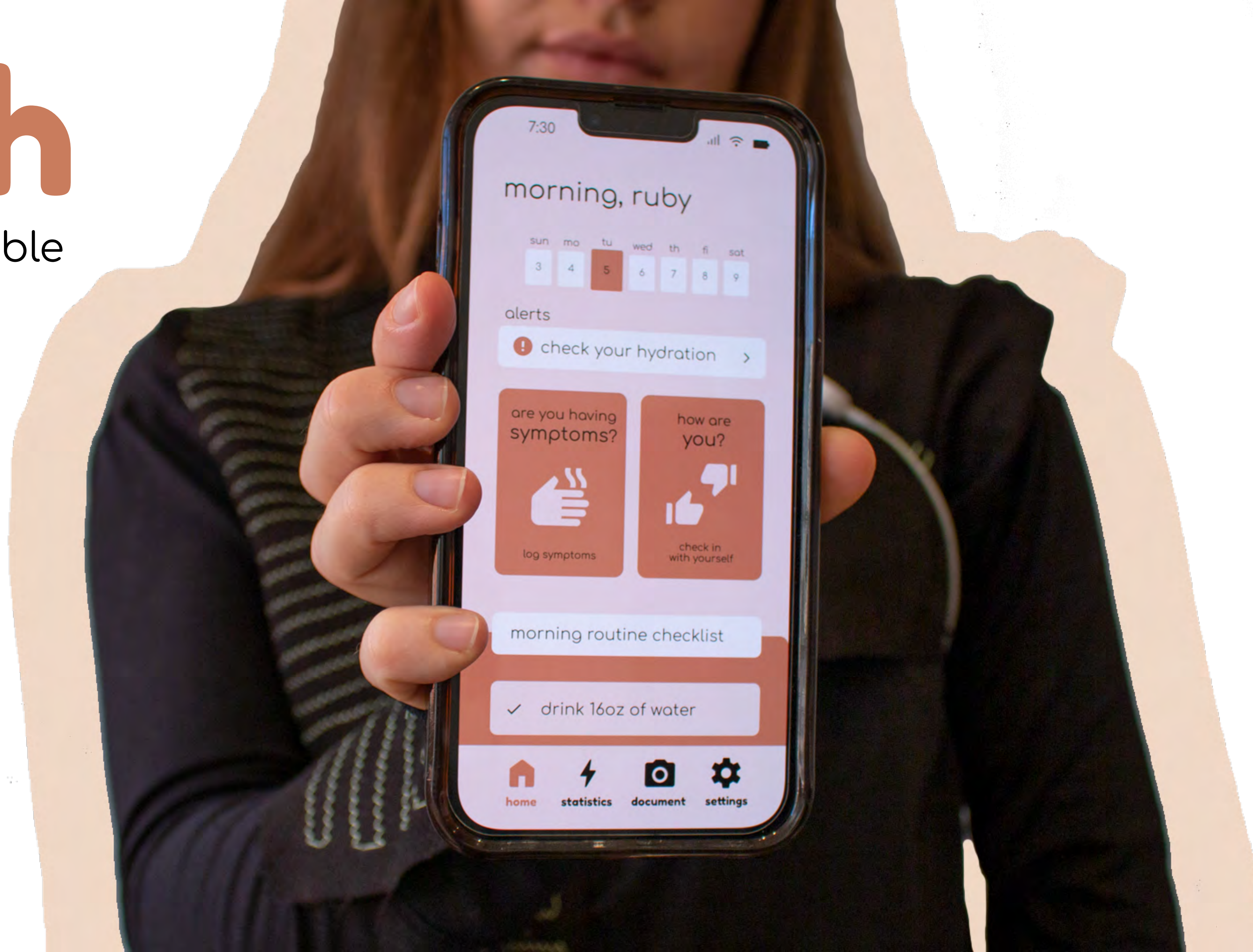


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problem statement

How might we help people with atopic dermatitis (eczema) identify environmental allergy triggers and track symptoms to reduce itching by utilizing smart clothing?

research insight summary

the what

Atopic Dermatitis (AD), or eczema can be described as the allergic response to an over reactive immune system to contact and inhaled allergens. There are several subsets of this disease such as childhood or adulthood onset eczema and intrinsic or extrinsic eczema (Chan, Shi, 2022).

technology

Skin hydration can be measured by a device called a Corneometer and a Tewameter. These two technologies measure trans epidermal water loss of the skin and epidermal capacitance (Almeida et al., 2019). The stratum corneum is the outer layer of the skin that provides a barrier (Menon et al., 2012). This layer is where the skin hydration readings are done.

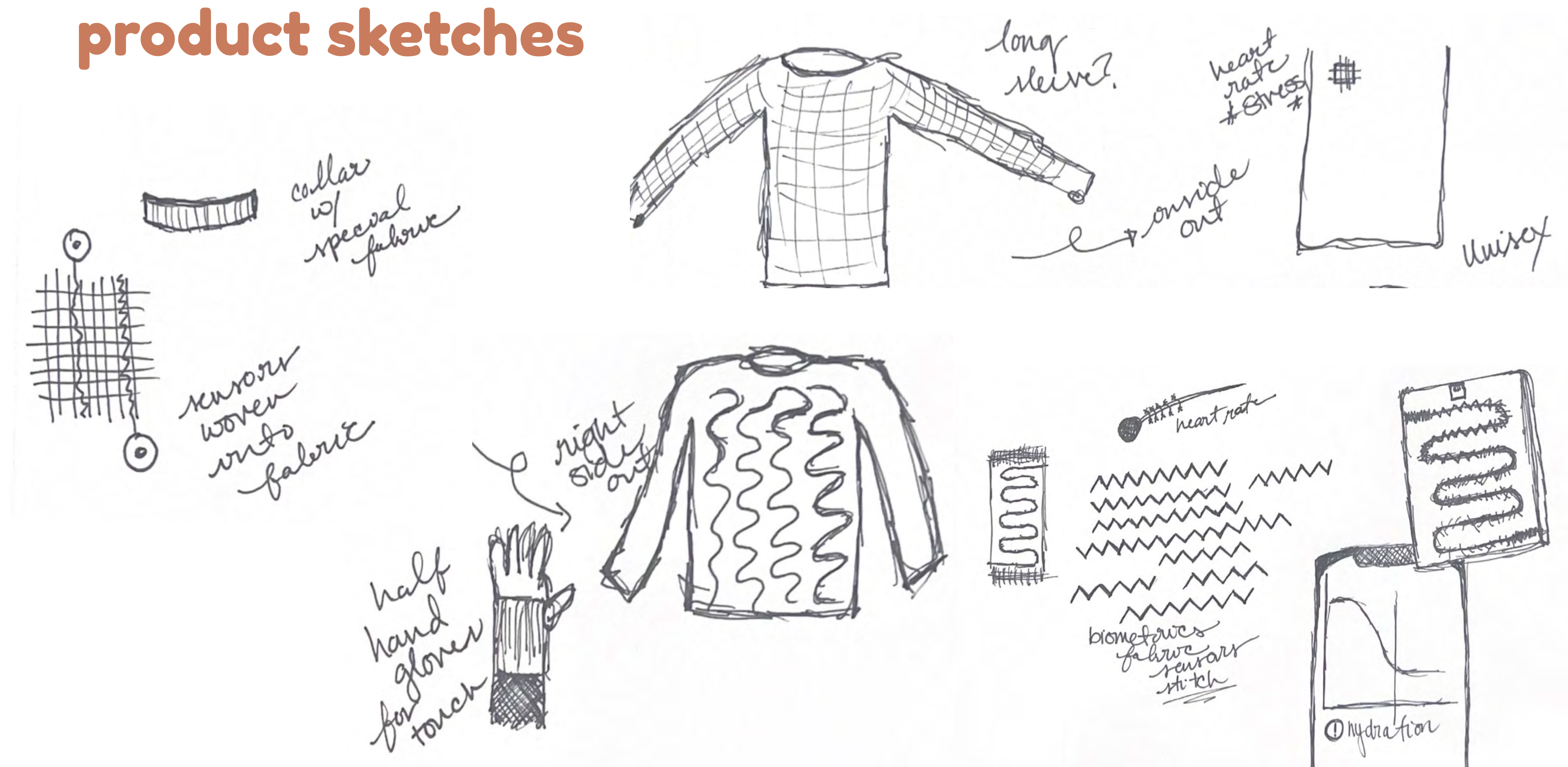
science

When the skin barrier is broken it is more susceptible to environmental triggers to enter. These can range from fragrances, pollution, pollen, and animal contact. The skin barrier also has its own microbiome that is connected to the gut and overall immune system. When the gut is imbalanced this leads to dysbiosis and inflammation (Chan, Shi, 2022).

ai garments

Smart garments are created by integrating sensors to measure a range of biometrics. Clothing is already worn in everyday life and provides a wider plane of the body to gather data from. The types of biometrics that can be gathered are; heart rate, body temperature, skin perspiration, blood pressure, respiration, and motion (Fernández-Caramés, 2018).

product sketches



user empathy map

pains

- costly to maintain
- physical health impacted
- mental health impacted

gains

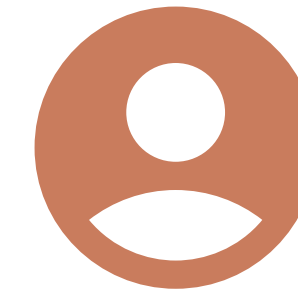
- healing skin barrier
- overall better health
- knowledge gained to get under control

think & feel

thoughts may be negative
may feel isolated
may feel frustrated
may feel unheard
think there is no progress made

hear

the sound of the shower a lot
the sound of itching
others asking why their skin looks a certain way



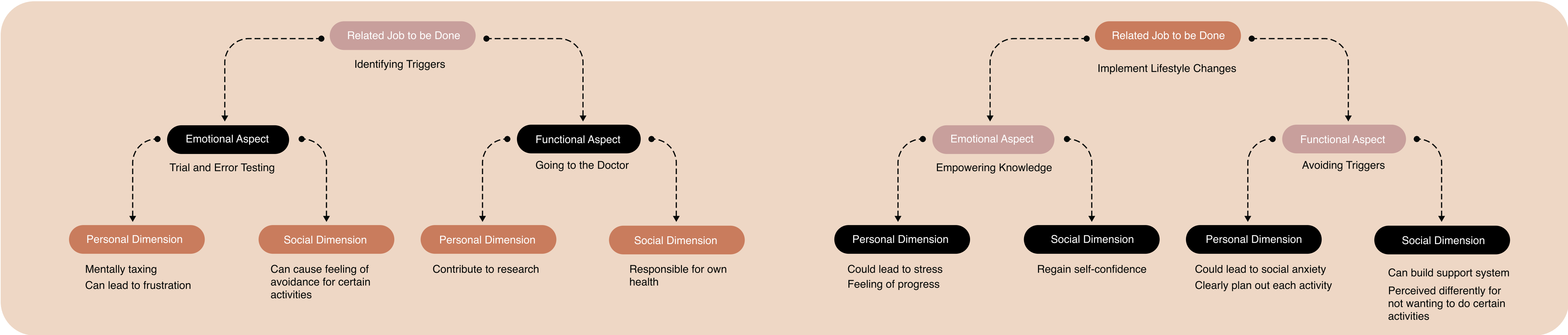
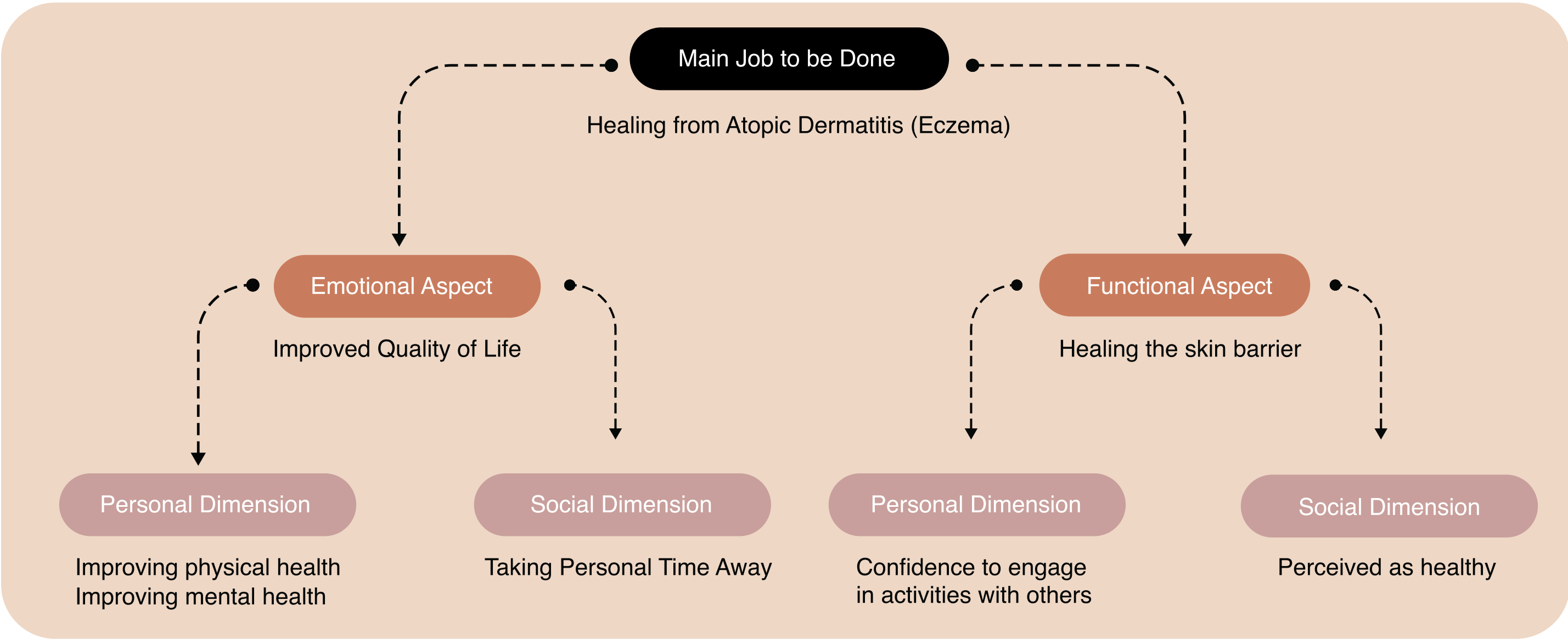
say & do

will physically experience eczema
say how they feel
will do different regimens to see what will help
visit the doctor a lot

see

their reflection in the mirror
areas of skin that are irritated
the amount of money it costs to maintain this disease

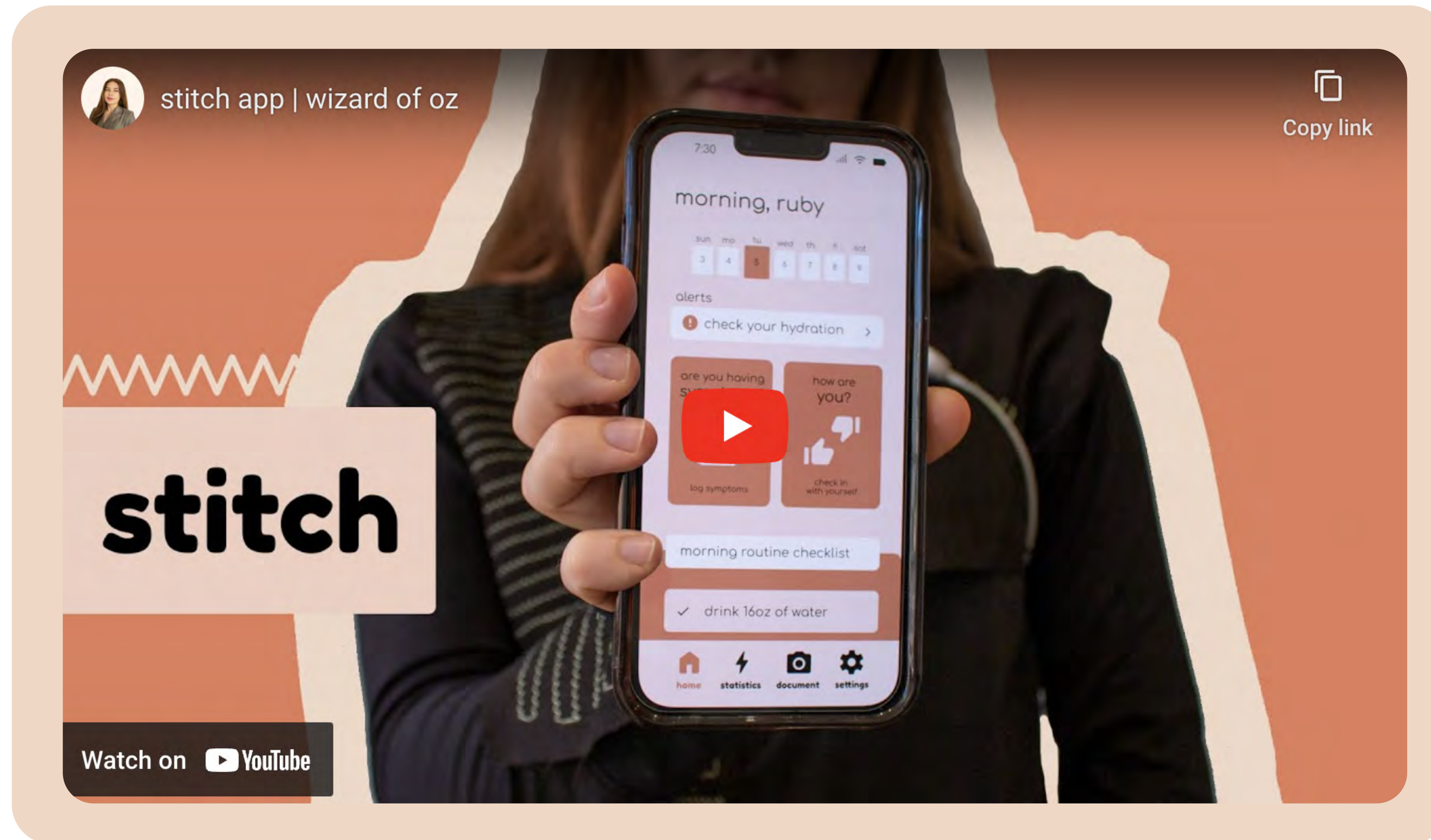
jobs to be done



rough & ready prototype



wizard of oz video



ui screens

colors

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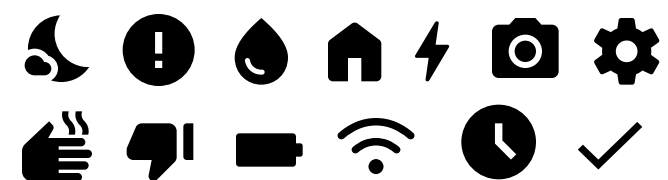
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fonts

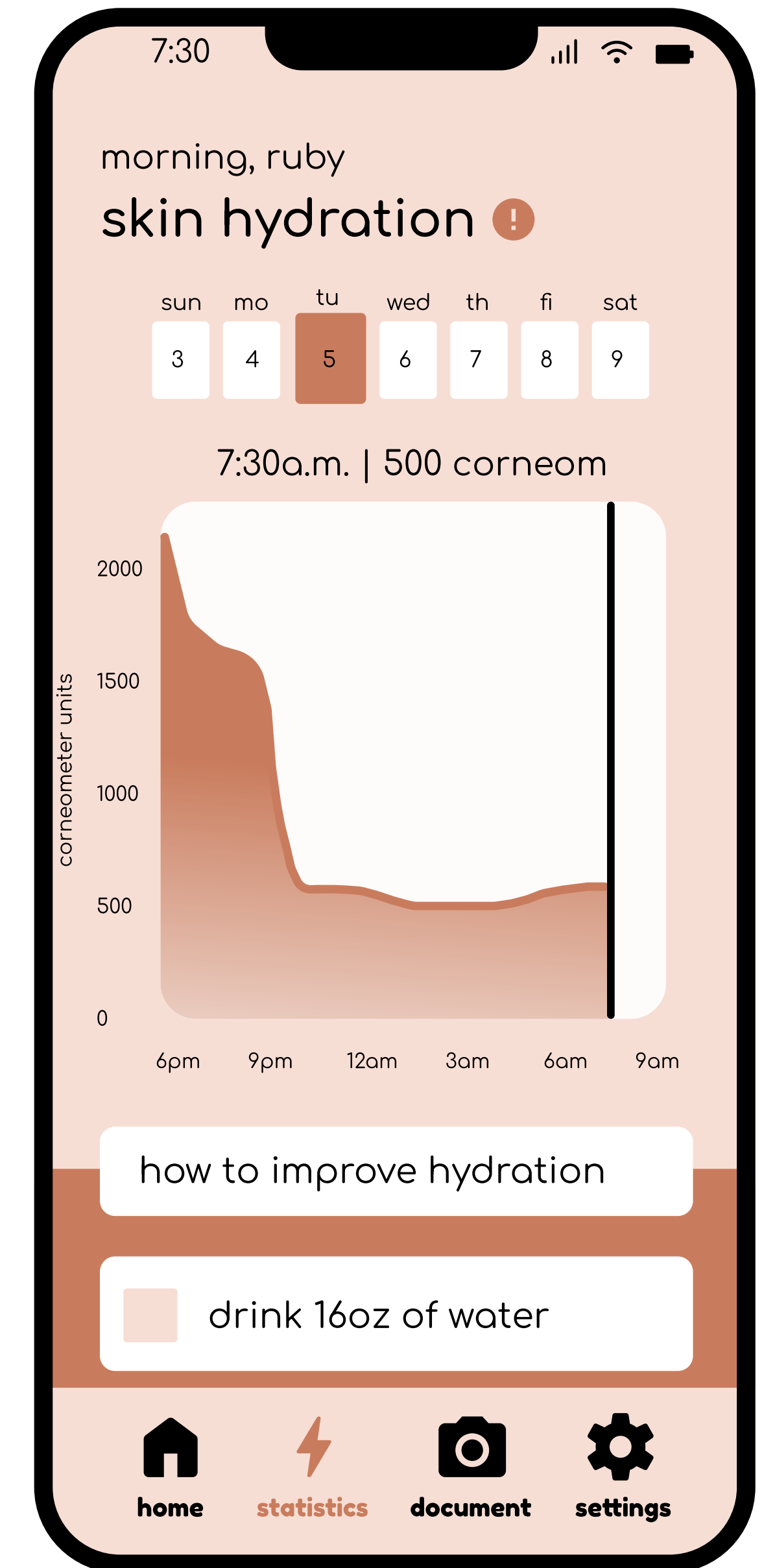
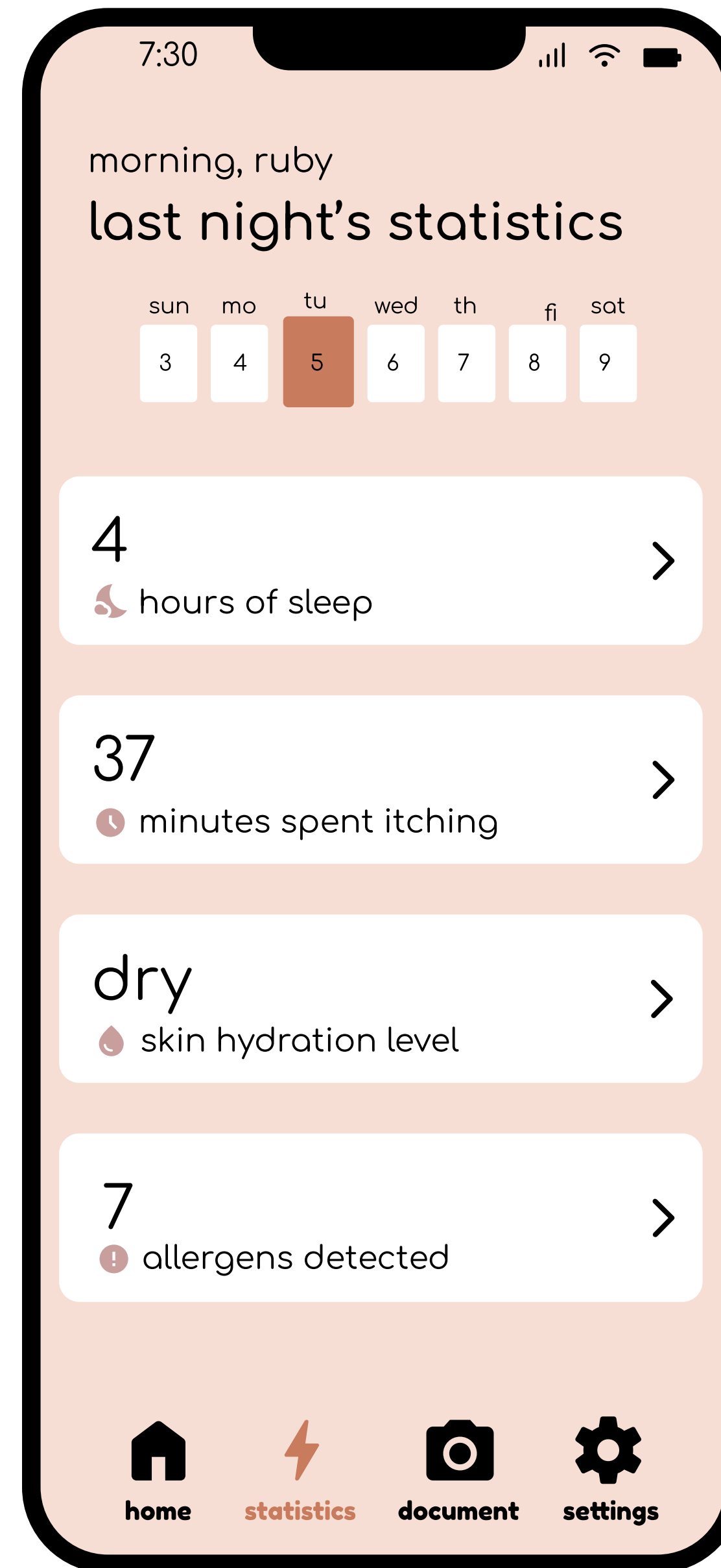
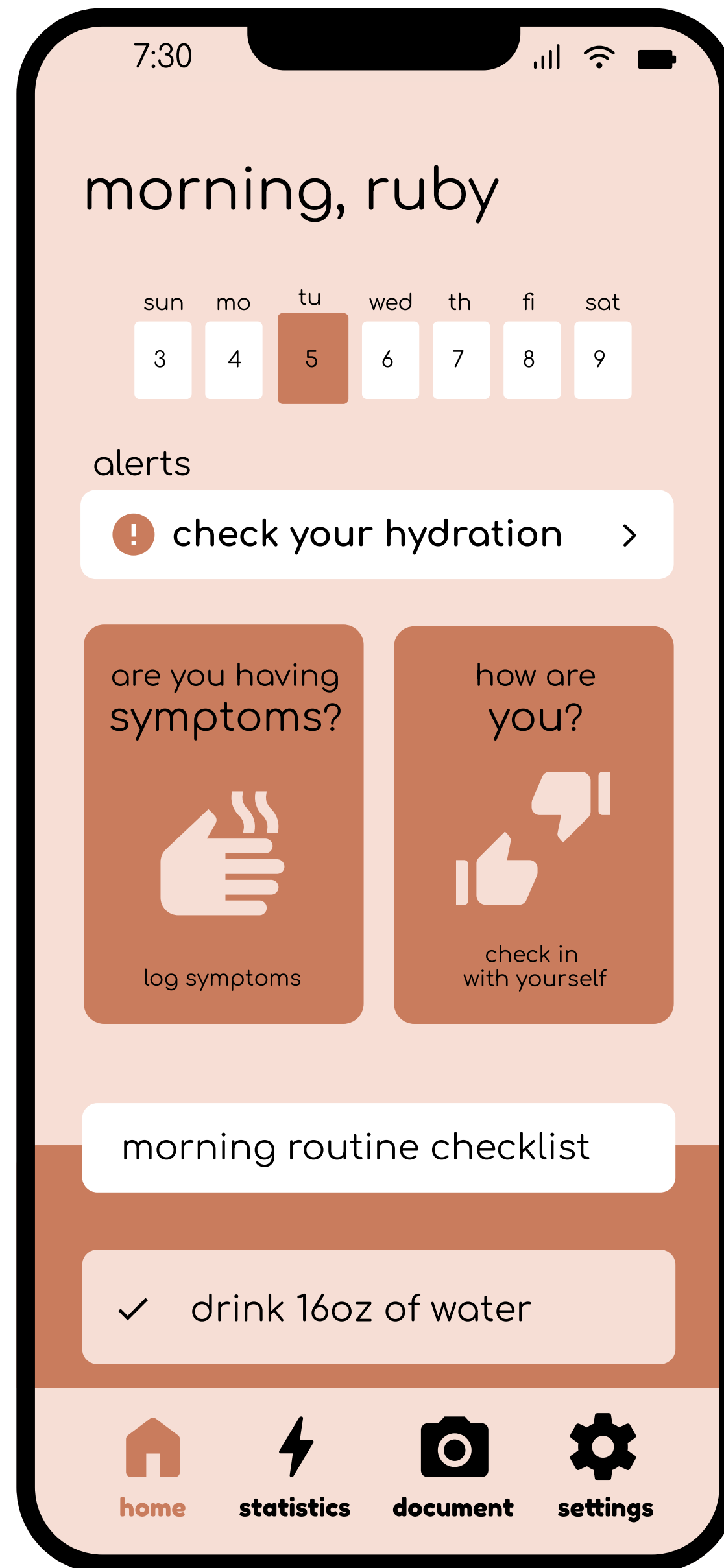
Fredoka One
Comfortaa

icons

Google
Material Icons



stitch WWWW



develop phase 10

bibliography

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