Weight +
An intelligent food support system for underweight adult

Introduction to underweight

What is underweight?

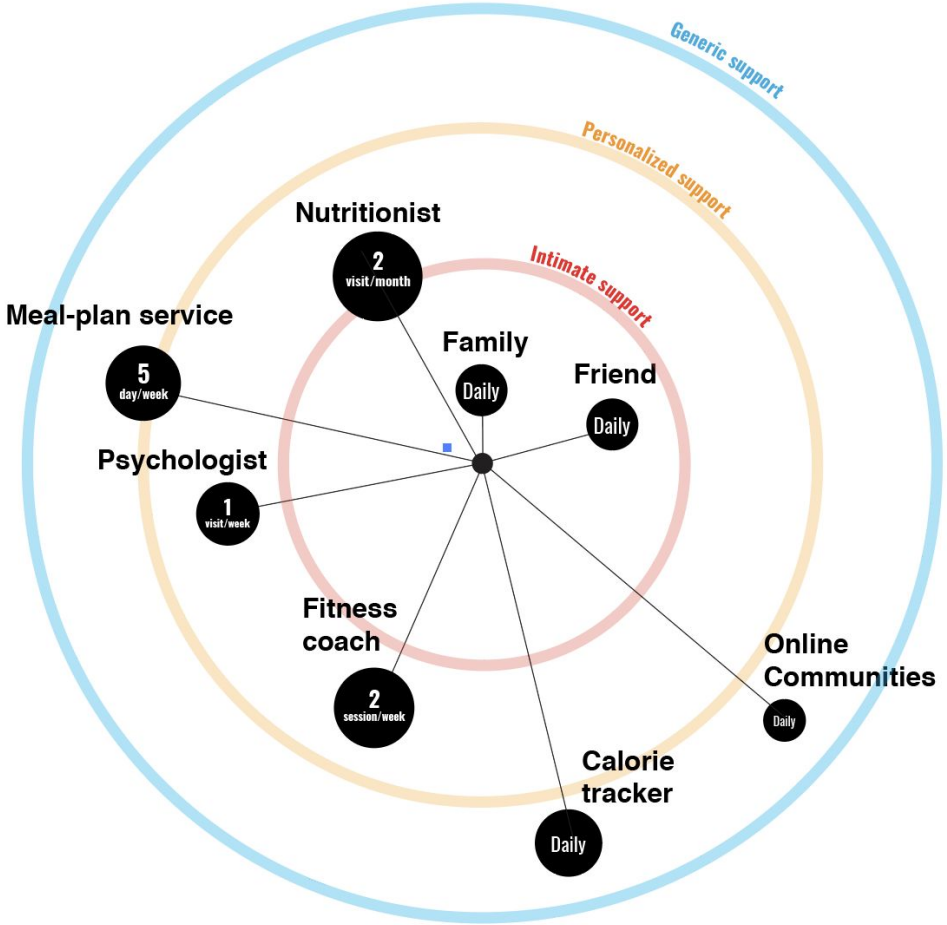
- BMI<18

What is the problem of underweight?

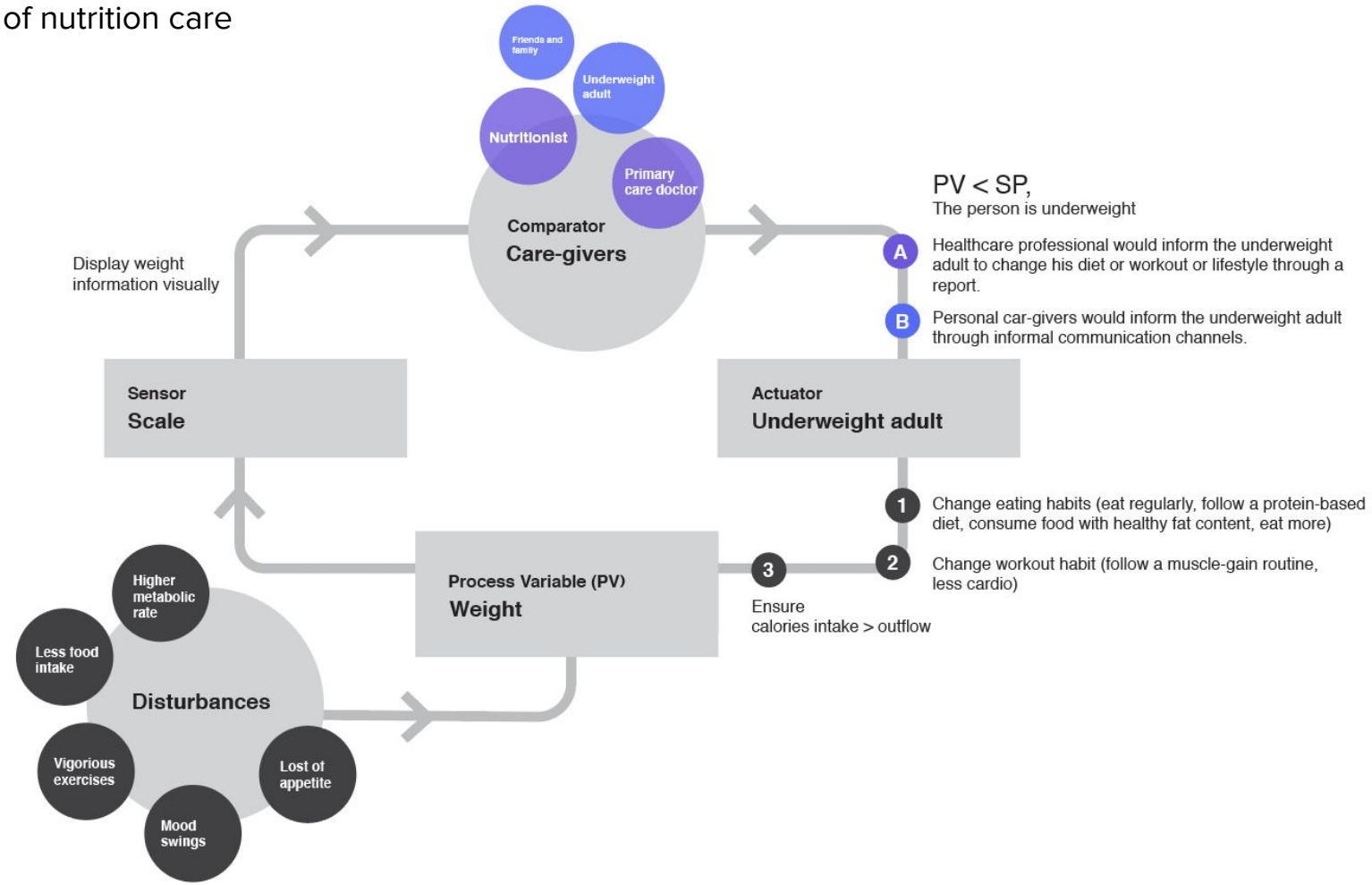
- Malnutrition
- Weak immune system
- Difficulty to recover from diseases

Who are the most susceptible?

- Patient recovered from surgery
- Patient recovered from eating disorder



Current model of nutrition care



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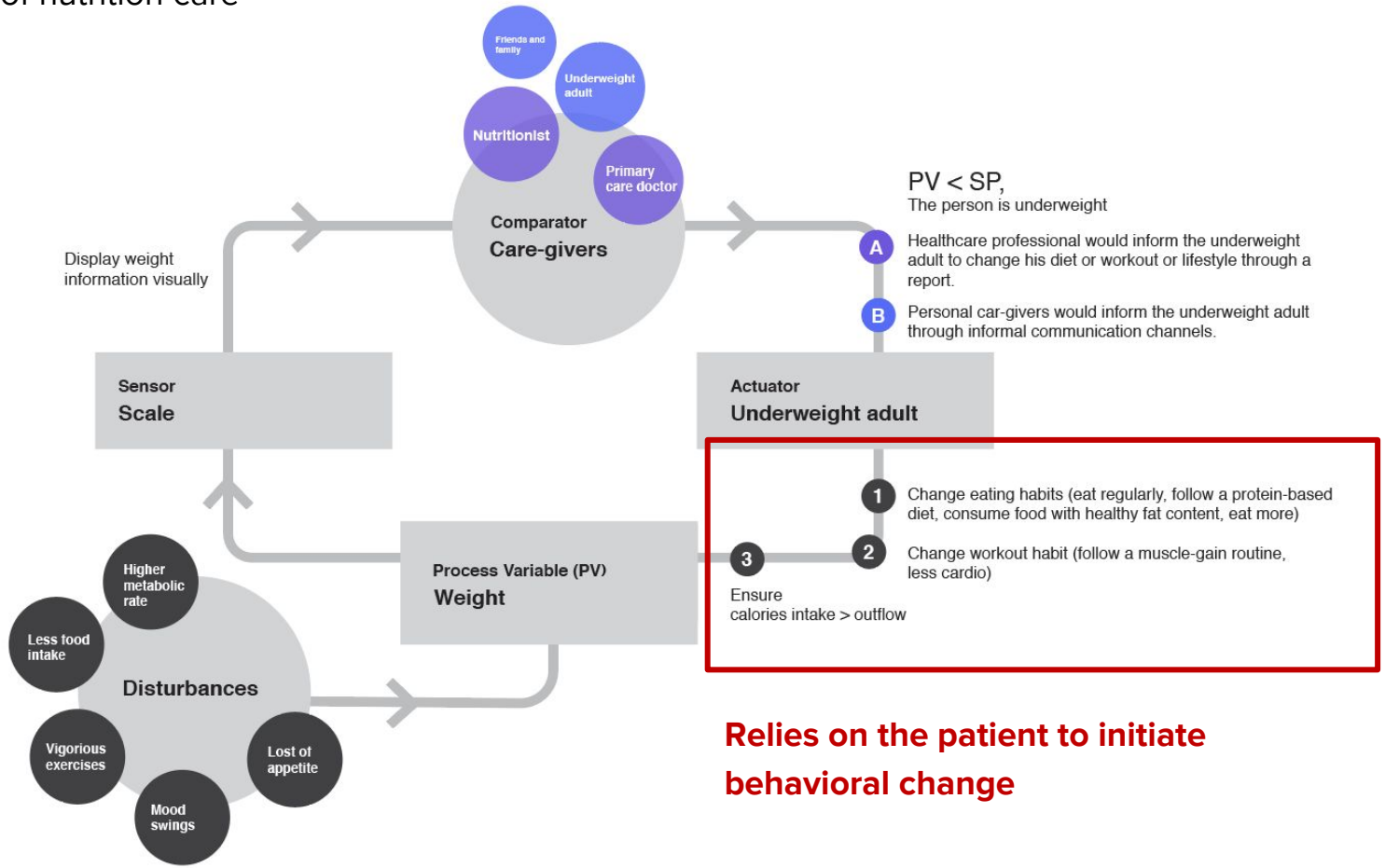
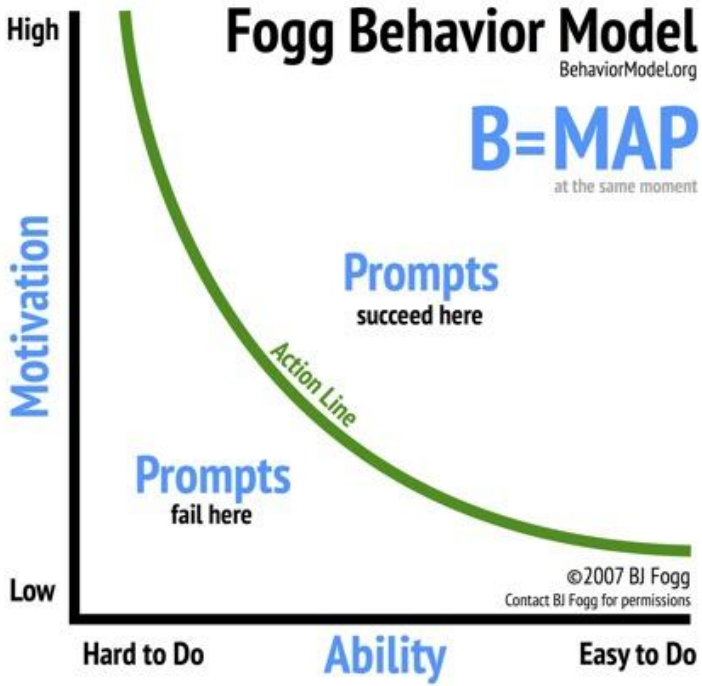


Relies on the patient to initiate behavioral change

Problem with behavioral change



Why aren't they motivated?

What's currently hard to do for them?

Persona

Jim, 48 years old

- History teacher at a local high school
- Fully recovered from nasal cancer 7 years ago
- During treatment, his weight significantly reduced due to difficulty in eating
- He brings his own lunch, and mostly have dinner at home with his family (wife and a daughter)

The current behavior

Pre-contemplation

Not concerned about their weight condition

Contemplation

Got sick

Realize there's a problem

Seek help from care givers

Preparation

Plan meals according to nutritionist advice

Grocery shopping

Cook his own meal

His wife continues to cook for the kids

Action

Follow meal plan

Drink milk formula

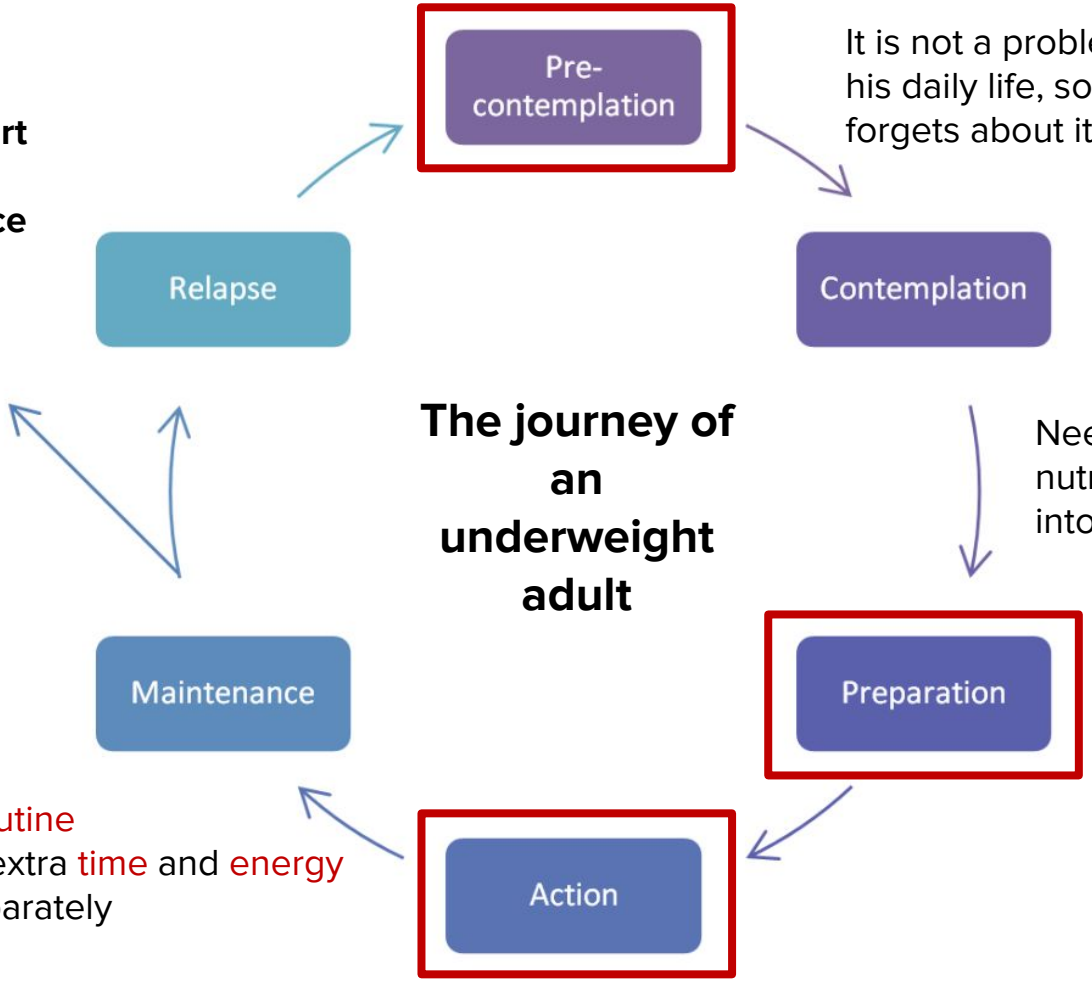
Monitor weight

Maintenance

Relapse

Pain points

- **Cognitive effort**
- **Non-routine**
- **Social deviance**
- **Demotivated**



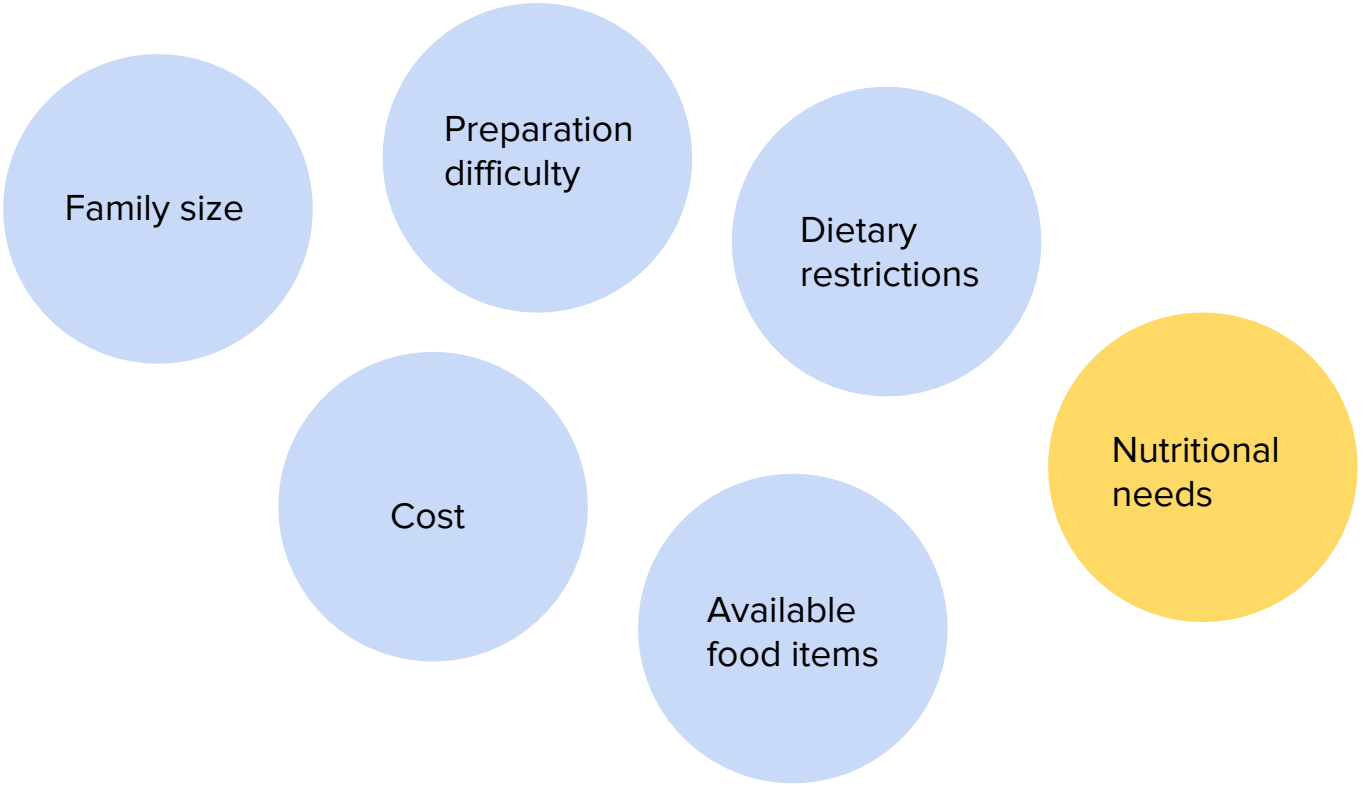
The journey of an underweight adult

It is not a problem that affects his daily life, so he eventually forgets about it

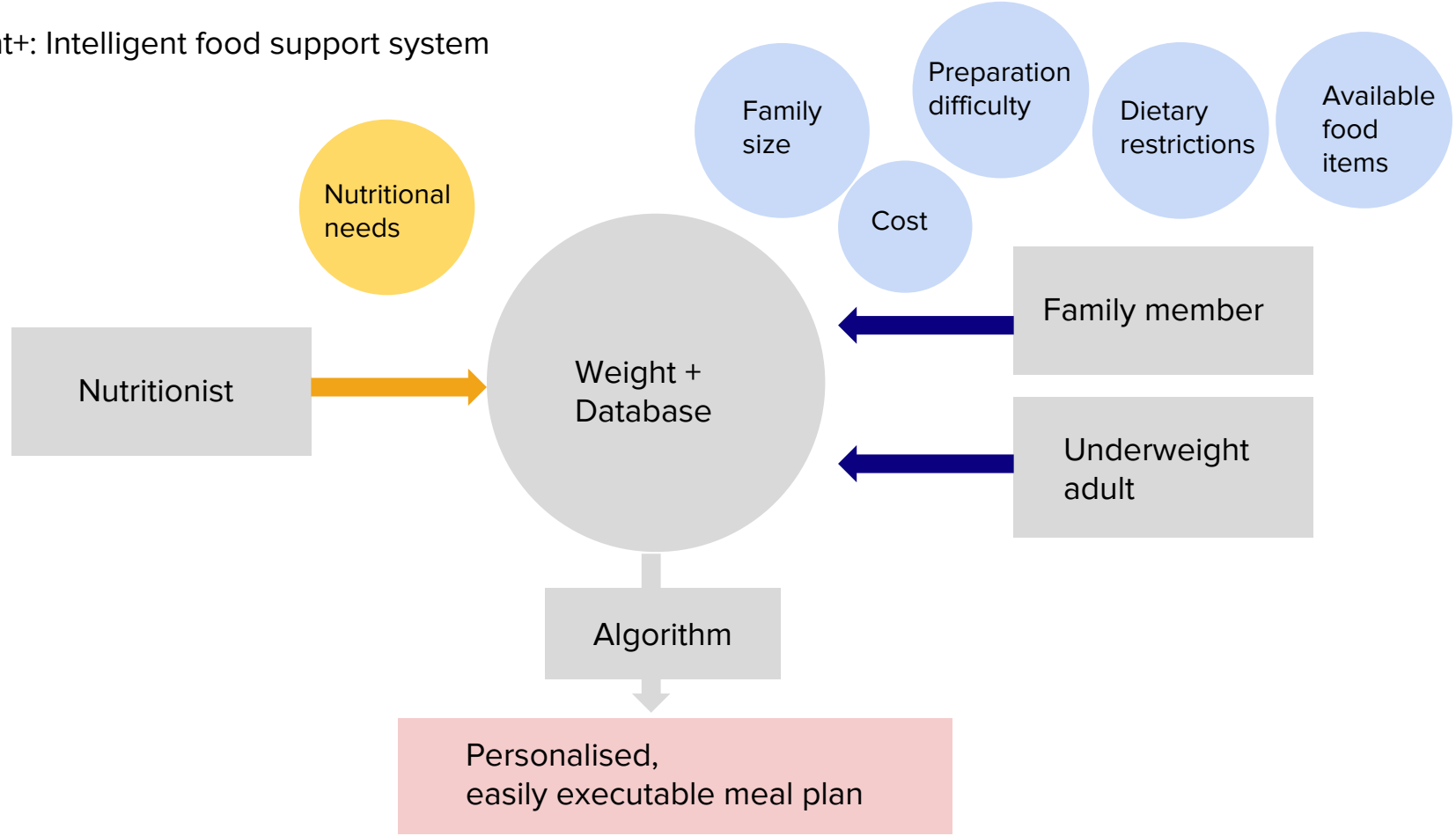
Need to transform nutritionist advice into actionable plan

Non-routine
Spent extra time and energy
Eat separately

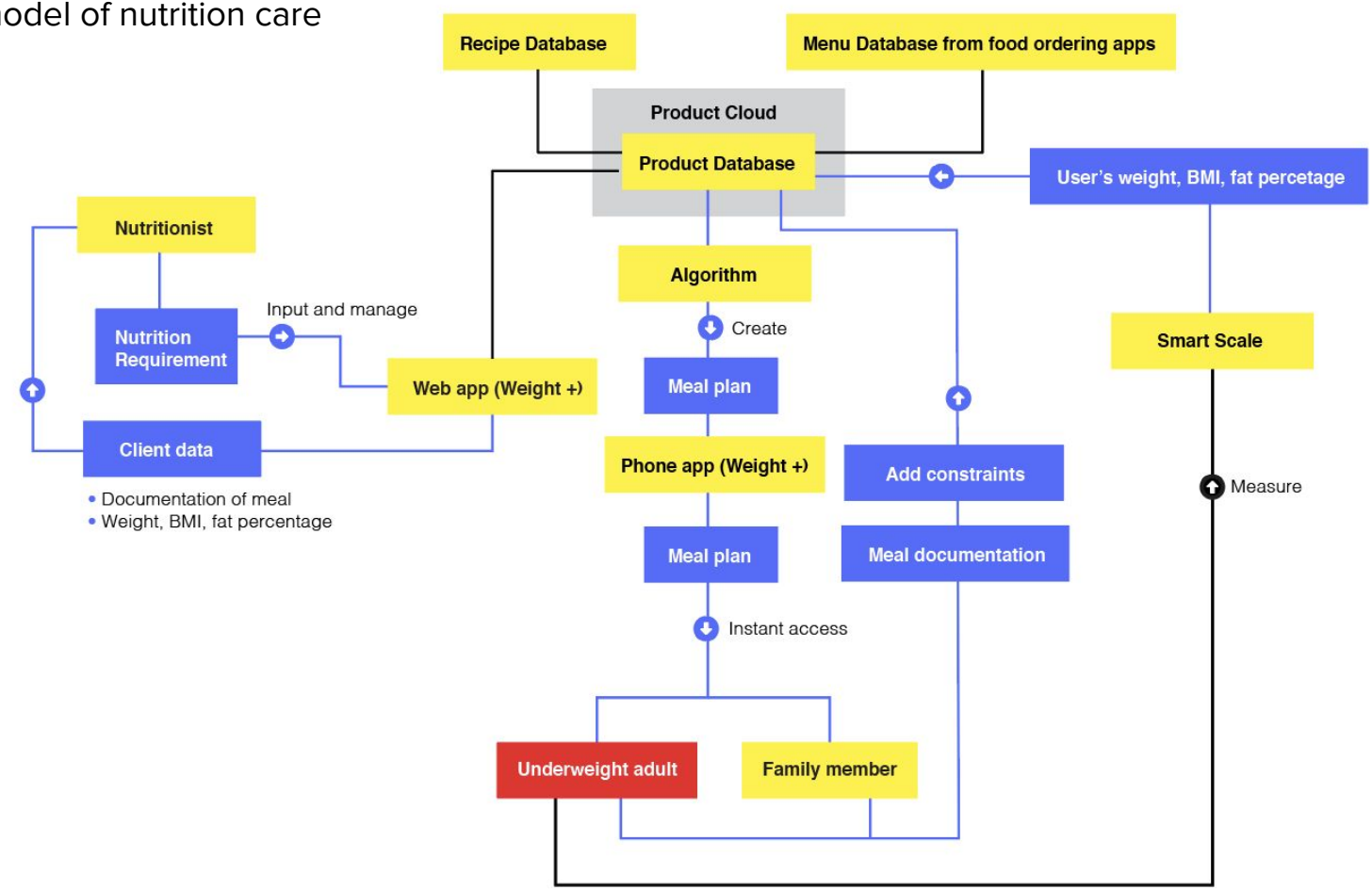
Cognitive effort and disconnection with family routine



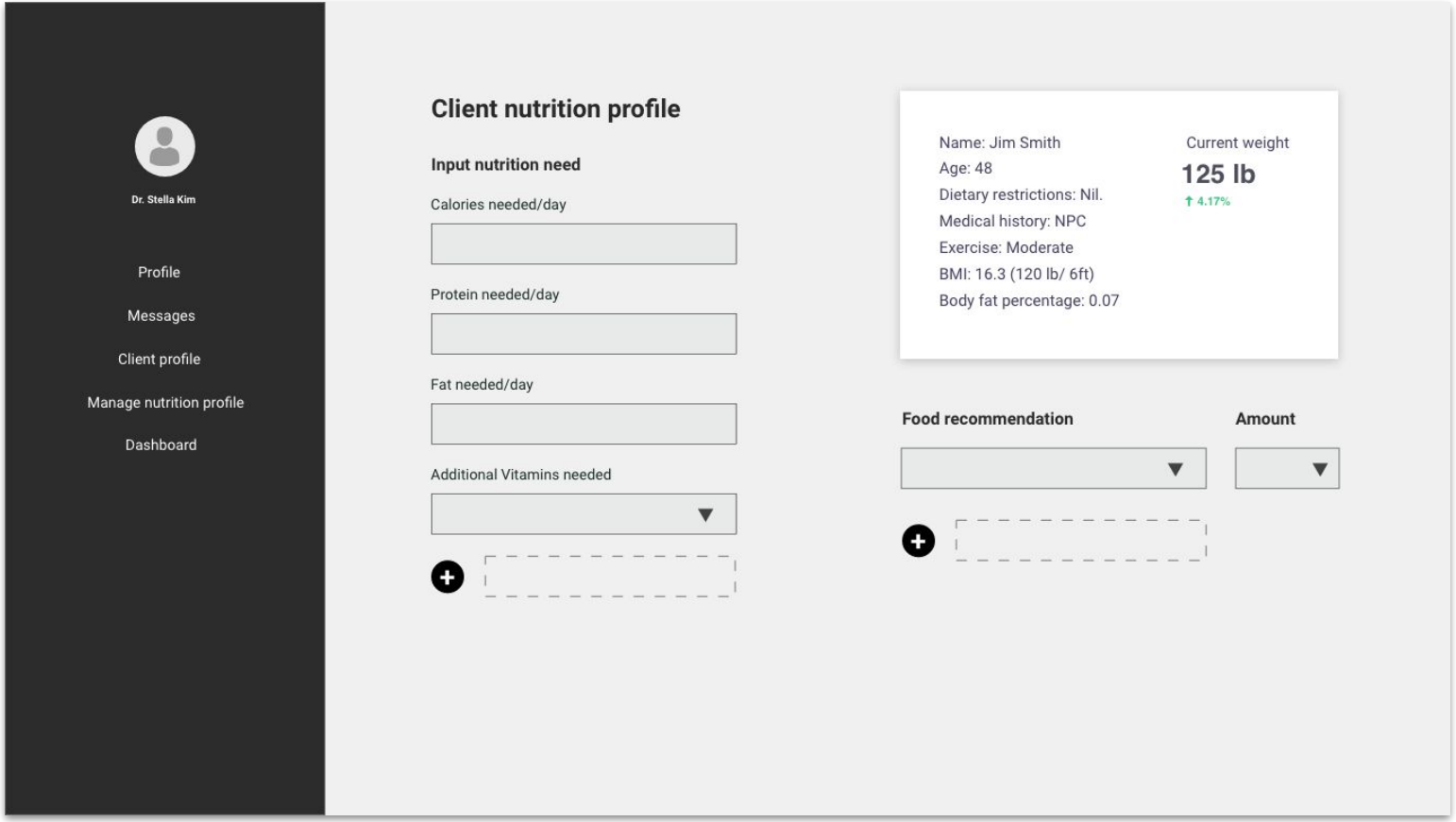
Weight+: Intelligent food support system



New model of nutrition care



System component: Web application



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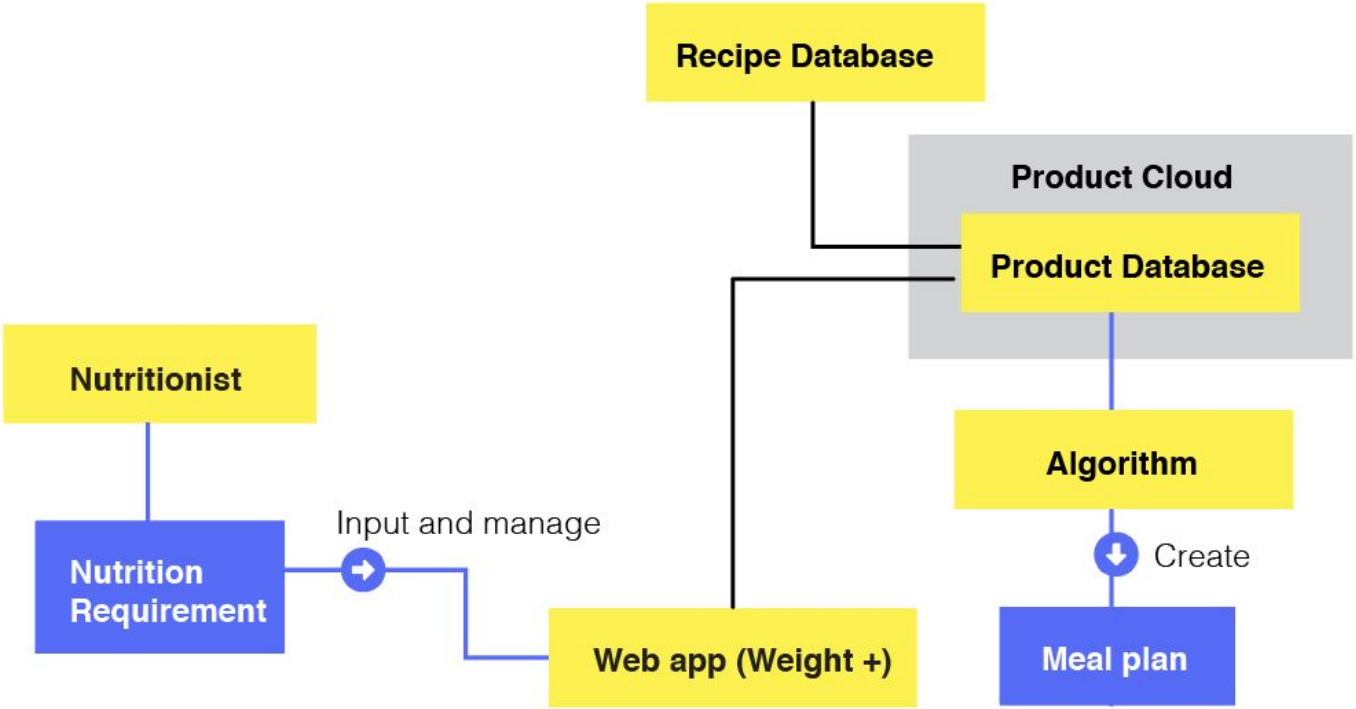
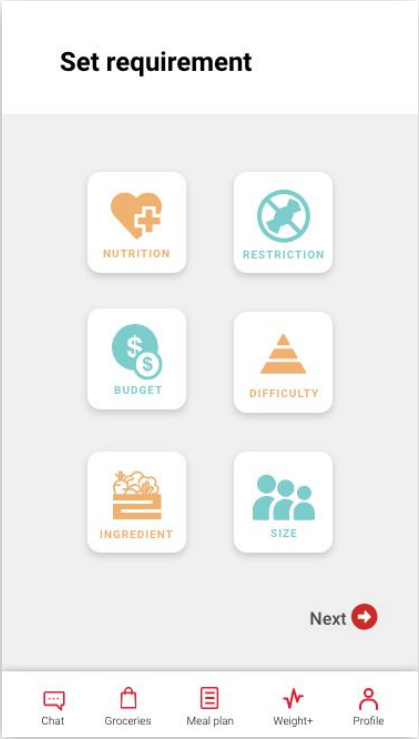
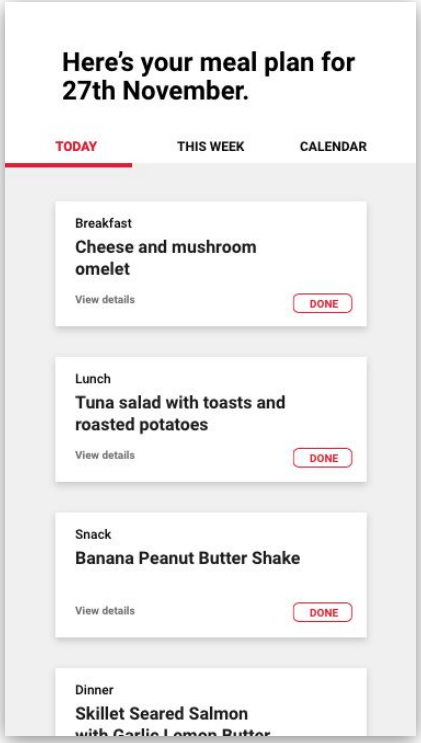


System component: Mobile application





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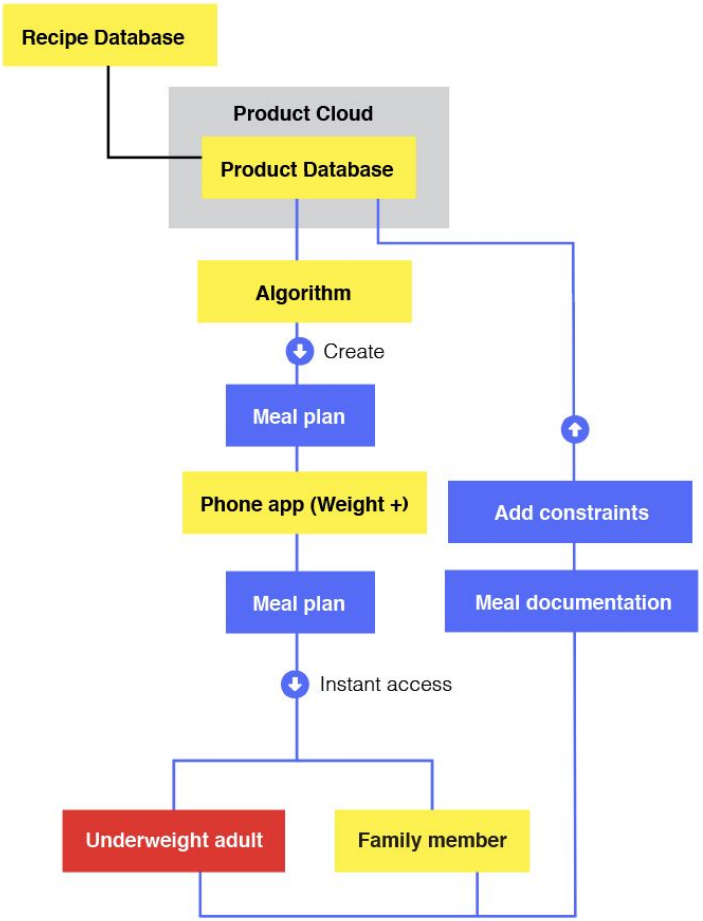

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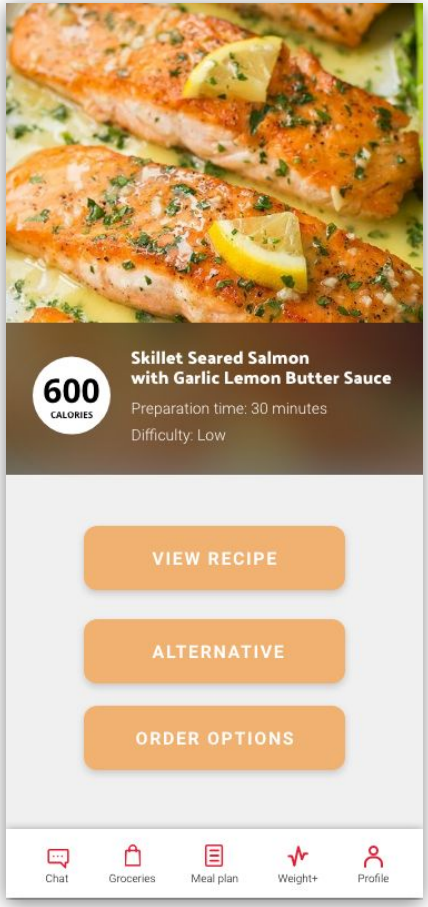

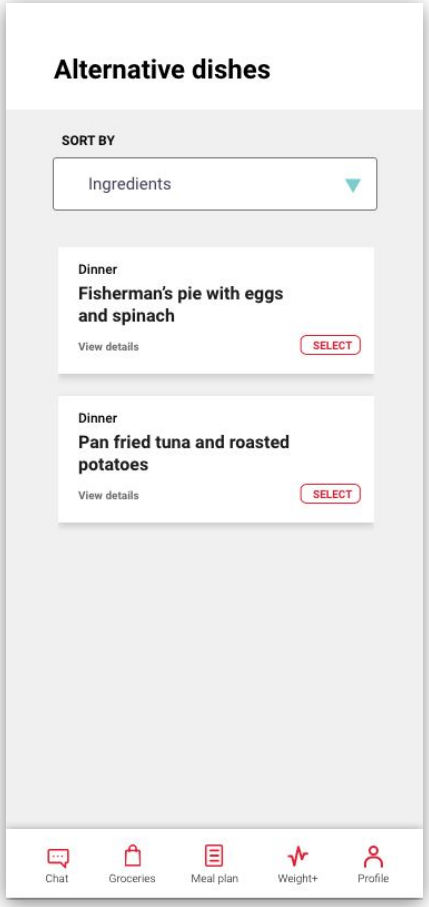

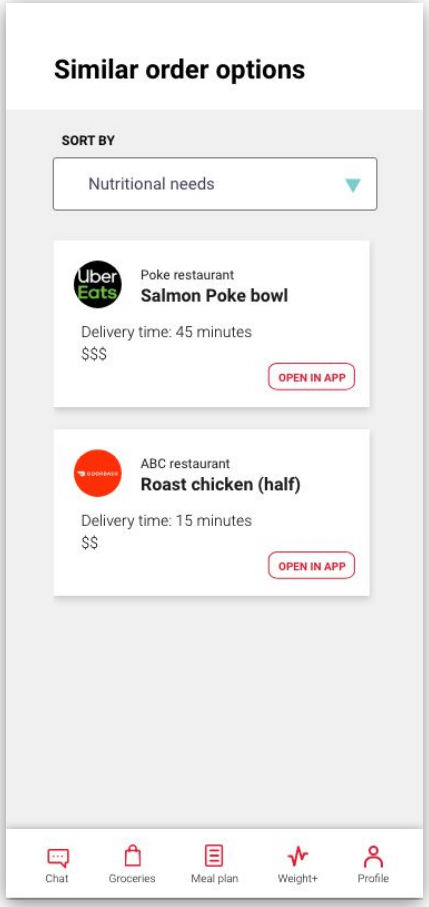

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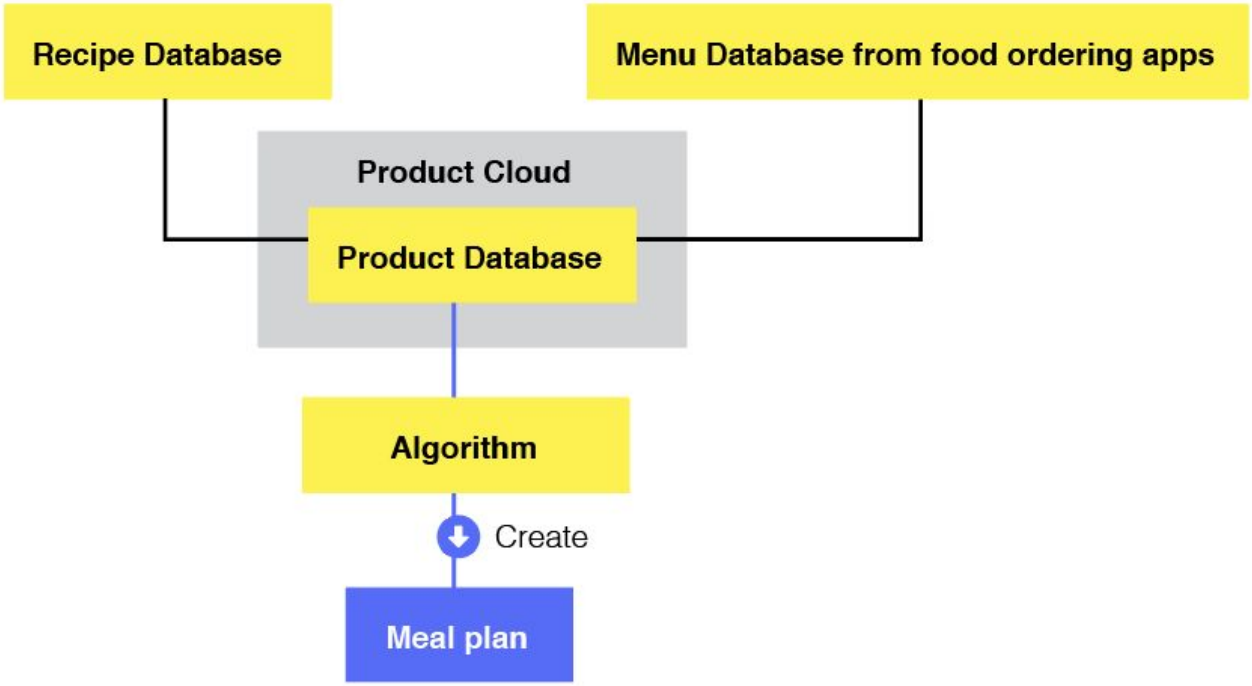

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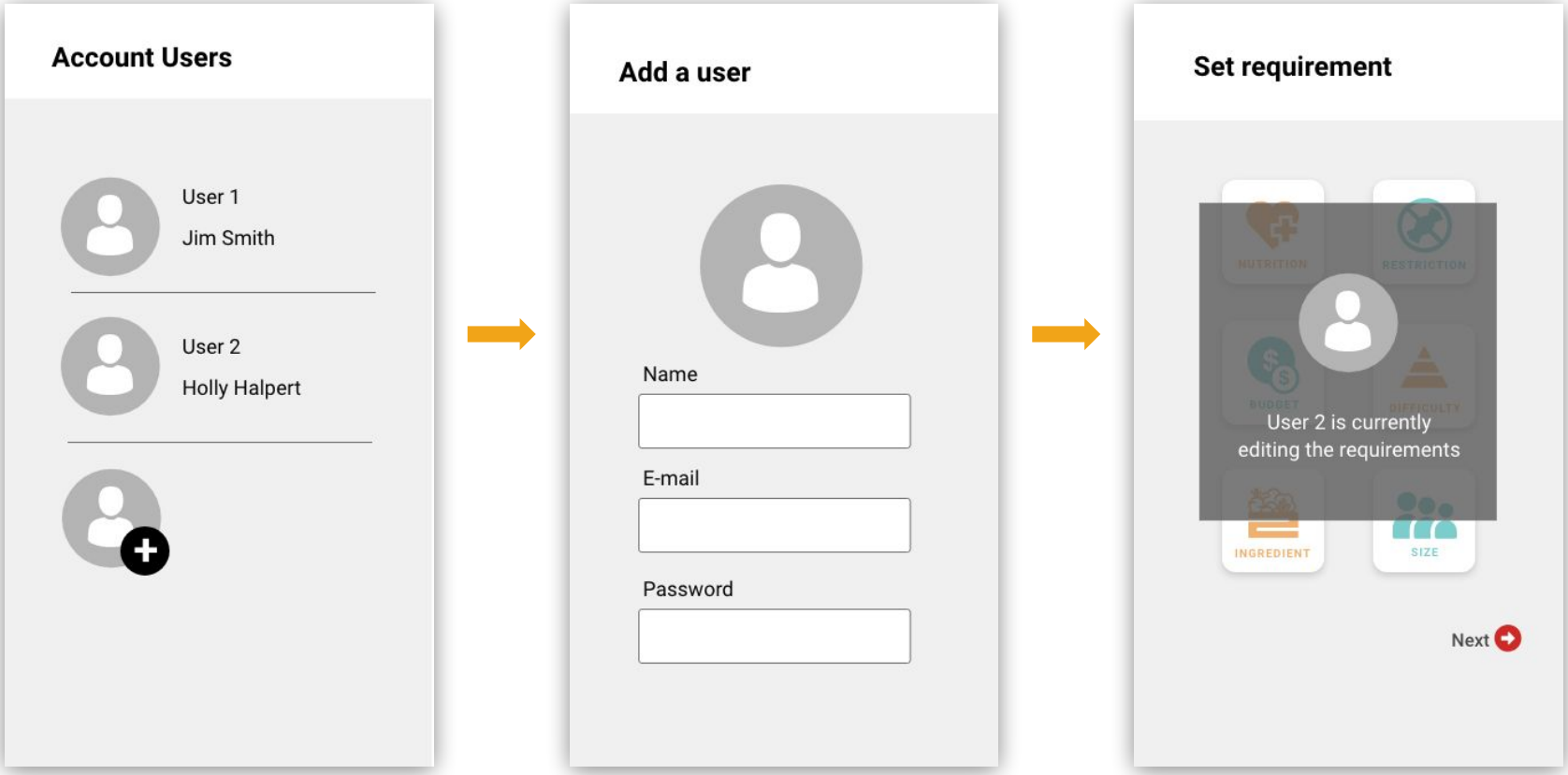
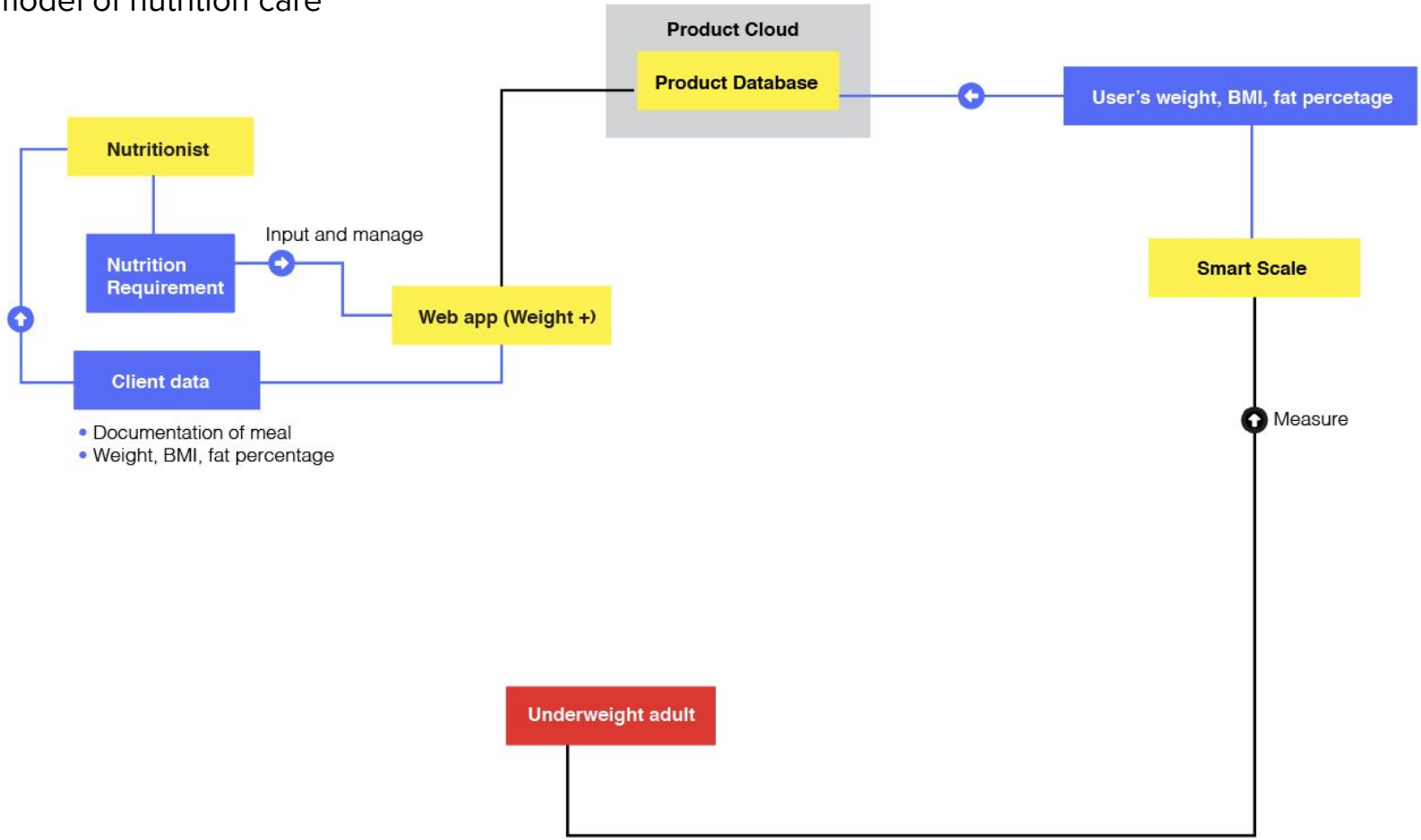


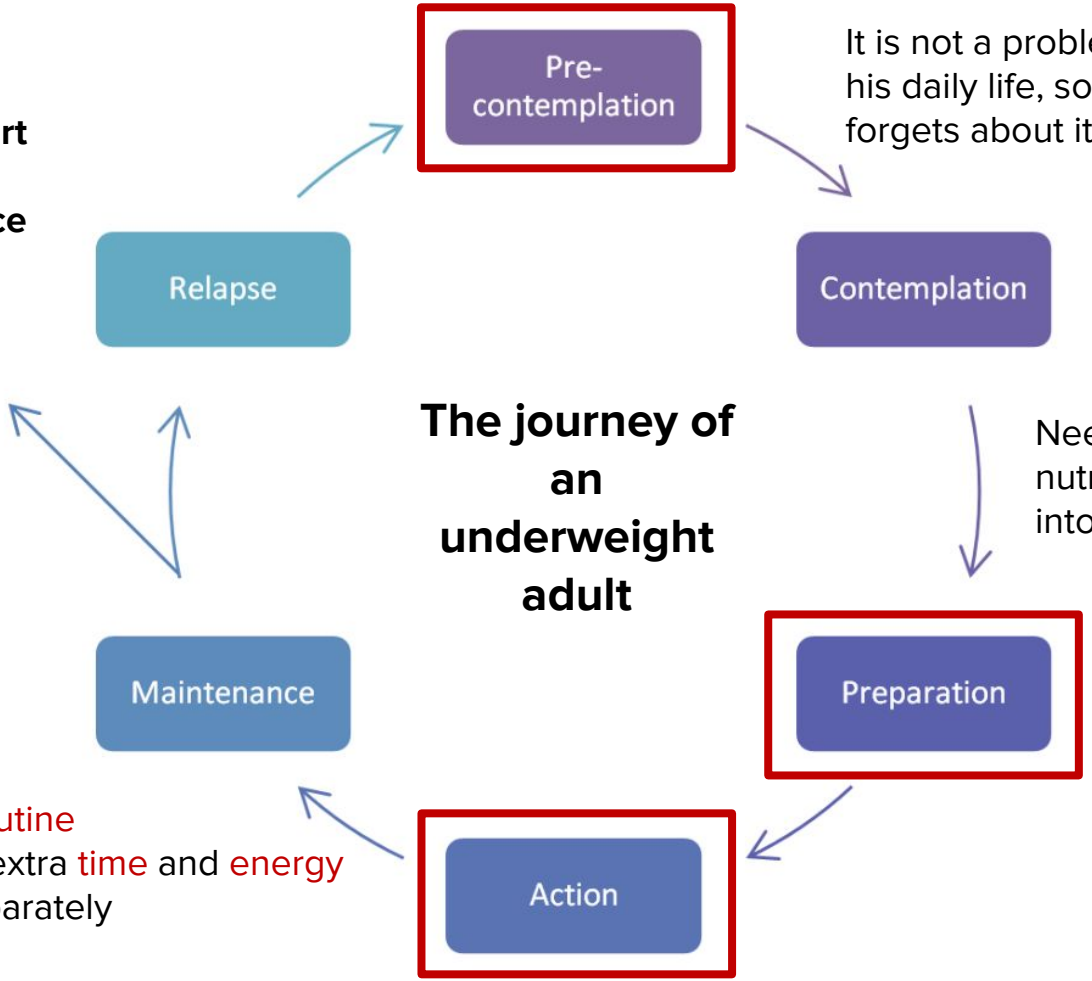
System component: Smart scale

New model of nutrition care



Pain points

- **Cognitive effort**
- **Non-routine**
- **Social deviance**



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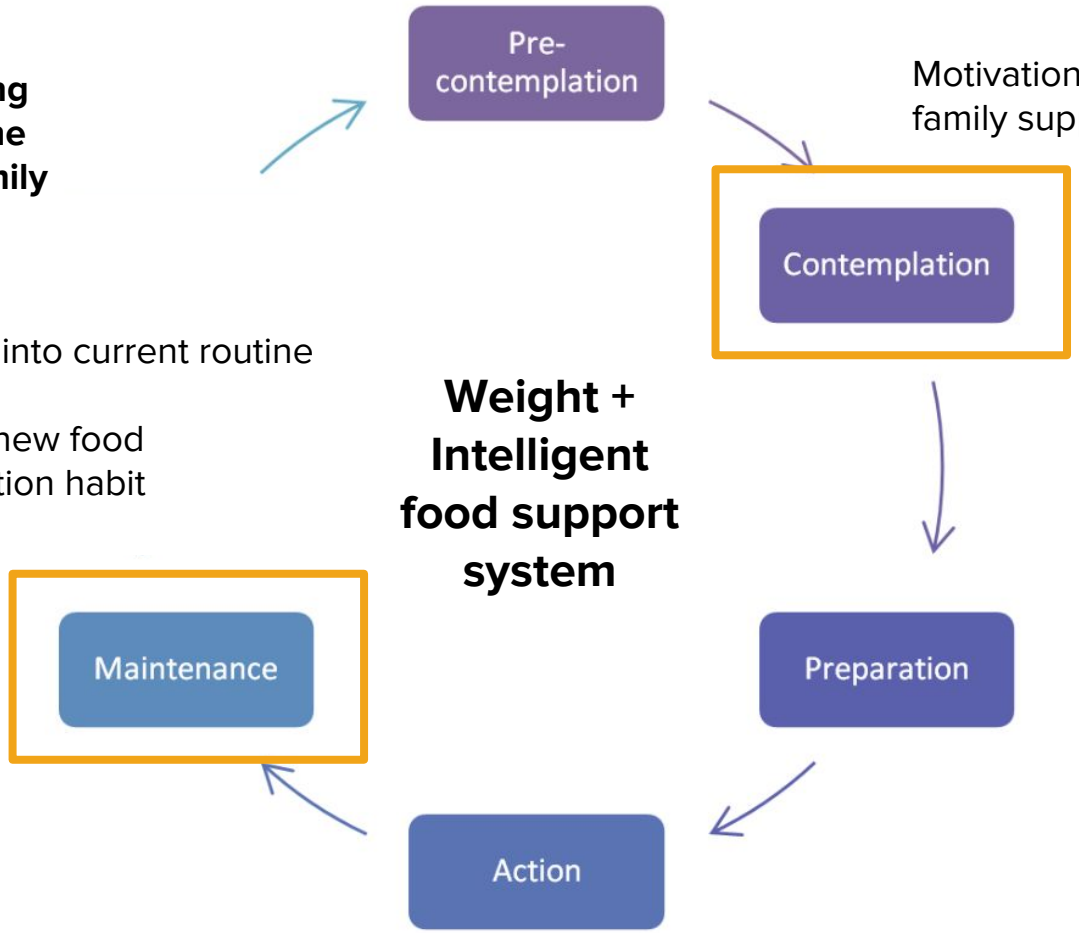
The new behavior

- **Effortless planning**
- **Merge into routine**
- **Support from family**



Thank you!

Q&A

- *Time*: The user has the time to perform the target behavior or the time taken is very low.
- *Money*: The user has enough financial resources for pursuing the behavior. In some cases money can buy time.
- *Physical effort*: Target behaviors that require of physical effort may not be simple enough to be performed.
- *Brain cycles:* Target behaviors that require of high cognitive resources may not be simple hence undesirable for behavior change.
- *Social deviance*: These comprehend behaviors that make the user socially deviant. These kind of behaviors are not simple
- *Non-routine:* Any behavior that incurs disrupting a routine is considered not simple. Simple behaviors are usually part of routines and hence easy to follow.

Changing habits of food consumption is known to be difficult, and may require continual supervision and education

Thus, as an aid to changing food-consumption behaviour we propose an intelligent food support system, to be used by the elderly person in his or her home, capable of providing informed and individualised suggestions about what to eat. The system takes several important variables into account in the suggestions, such as **taste, cost, preparation difficulty, dietary diversity, dietary restrictions, nutritional needs and properties, and available food items.**