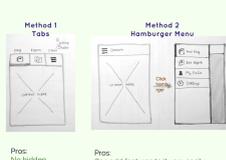


I. Navigation

Main Application Navigation



Pros: No hidden navigation. It's clear what the main features are.

Cons: Hard to change. If you want to add new features.

Pros: Can add features to it very easily. Intuitive, most apps have it.

Cons: Hidden navigation. One more tap needed to change screen.

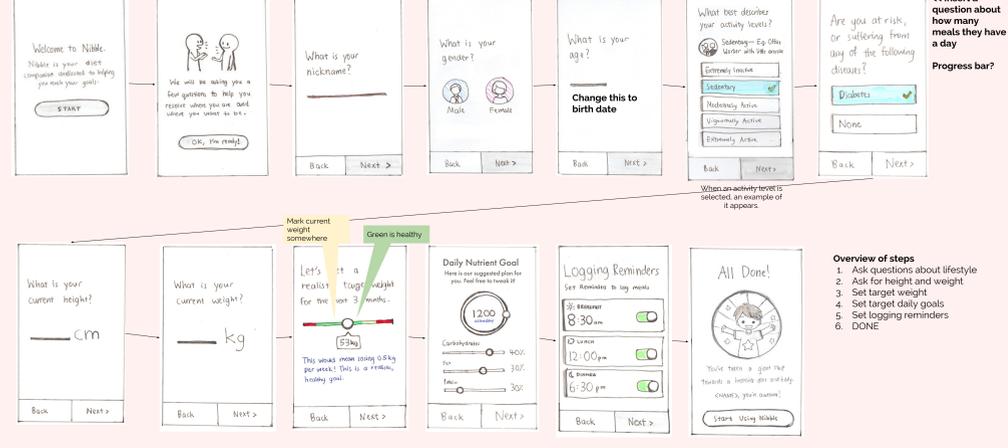


Final design

1. Food diary
2. Diet Reports
3. My Meals
4. Weight log
5. My Log
6. Profile
7. Settings

II. Onboarding

Setting up profile and goal



Constant Variables

Calories (calorie) = 7700
 (value taken from base)

minCarbPercentage = 10%
 maxCarbPercentage = 60%
 minFatPercentage = 10%
 maxFatPercentage = 40%
 minProteinPercentage = 20%
 maxProteinPercentage = 50%
 (values taken from base)

caloriesPerCarb = 4
 caloriesPerFat = 9
 caloriesPerProtein = 4

minUnderweightBMI = 18
 minHealthyBMI = 18.5
 minOverweightBMI = 25

minHealthyWeightChangePerWeek = 0.5kg
 maxHealthyWeightChangePerWeek = 1kg

Setting of target weight

1. Calculate BMI
 $BMI = \text{Current weight} / \text{Current height}^2$ in cm

2. Determine weight status and possible goal
 < 18.5 - underweight - gain or lose or maintain
 $18.5 < < 25$ - healthy weight - gain or lose or maintain
 $25 < < 30$ - overweight - lose
 > 30 - heavily overweight - lose

3. Set the slider's minimum and maximum weight
 Right click the minimum value the user should target to a healthy weight, but we do not want to take away too much control, so we set the minimum value to an underweight weight, but still moderate if above the severely underweight weight.

minTargetWeight = min UserCurrentWeight, minHealthyWeight
 where minHealthyWeight = $18.5 \times \text{height}^2$
 User target weights that are at least in the healthy range

For underweight and healthy weight users:
 $\text{maxTargetWeight} = \text{max}(\text{healthyWeight}, \text{BMI} \times \text{height}^2 + 25 \times \text{height}^2)$
 (lose target weights that do not go into overweight range)

For overweight users:
 $\text{maxTargetWeight} = \text{userCurrentWeight}$

4. Set the minimum and maximum healthy target weights (Green Range)
 Calculate the weights that the user can achieve with a healthy change rate of 0.5-1kg per week
 $\text{minHealthyLossWeight} = \text{userCurrentWeight} - \text{maxHealthyWeightChangePerWeek} \times \text{durationInWeeks}$
 $\text{maxHealthyGainWeight} = \text{userCurrentWeight} + \text{minHealthyWeightChangePerWeek} \times \text{durationInWeeks}$
 $\text{minHealthyGainWeight} = \text{userCurrentWeight} - \text{minHealthyWeightChangePerWeek} \times \text{durationInWeeks}$
 $\text{maxHealthyLossWeight} = \text{userCurrentWeight} + \text{maxHealthyWeightChangePerWeek} \times \text{durationInWeeks}$

For underweight users:
 Mark green the range of $\text{min}(\text{maxHealthyGainWeight}, \text{maxHealthyWeight})$

For healthy users:
 Mark green the range of $\text{max}(\text{minHealthyLossWeight}, \text{minHealthyLossWeight})$ to $\text{min}(\text{maxHealthyGainWeight}, \text{maxHealthyGainWeight})$

For overweight users:
 Mark green the range of $\text{min}(\text{maxHealthyLossWeight}, \text{maxHealthyLossWeight})$

5. Set the slider's suggested target weight
 For underweight users:
 $\text{userCurrentWeight} + \text{avg}(\text{minHealthyWeightChangePerWeek}, \text{maxHealthyWeightChangePerWeek}) \times \text{durationInWeeks}$

For healthy users:
 userCurrentWeight

For overweight users:
 $\text{userCurrentWeight} - \text{avg}(\text{minHealthyWeightChangePerWeek}, \text{maxHealthyWeightChangePerWeek}) \times \text{durationInWeeks}$

Target Weight Guide Messages

For all users

- If the target weight is within healthy weight (green range, say < 25) this means you will be losing/gaining x kg per week. This is a realistic and healthy goal!
- If the target weight means losing or gaining weight too much, add > 25 . This means you will be losing/gaining x kg per week, more than the recommended maximum of 1kg a week. Losing/gaining weight too fast might lead to 3000000. We suggest increasing/decreasing your target weight.

Underweight and healthy weight users

- If the target weight is underweight and out of the green range, encourage the user to increase the target.
- If the target weight is overweight, encourage the user to decrease the target!

Healthy weight users

- If they choose to maintain the weight say "Wonderful! You're at a healthy weight, so you can aim to maintain your weight!"

Calculation of daily nutrition expenditure

Input: Weight, target weight, height, age, activity levels
Output: Target daily calorie and macronutrient expenditure

1. Calculate BMR using Mifflin-St. Jeor Equation
 For men: $BMR = 10 \times \text{weight (kg)} + 6.25 \times \text{height (cm)} - 5 \times \text{age (years)} + 5$
 For women: $BMR = 10 \times \text{weight (kg)} + 6.25 \times \text{height (cm)} - 5 \times \text{age (years)} - 161$

2. Calculate daily calorie expenditure
 Sedentary = $BMR \times 1.2$
 Lightly active = $BMR \times 1.375$
 Moderately active = $BMR \times 1.55$
 Very active = $BMR \times 1.725$
 Extra active = $BMR \times 1.9$

3. Calculate target calorie deficit
 To lose 1kg: 7700 calories must be lost
 Healthy, daily, 0.5kg weekly weight loss: 7700/2 = 3850 calories must be lost

4. Calculate target calorie intake
 Target calorie intake = Daily calorie expenditure - Daily calorie deficit

5. Calculate target carbs, fat and protein
 Currently for simplification, we use a 40% carb 30% fat 30% protein diet, known as low-carb, high-protein diet

Target carbs = $0.4 \times \text{calories} / 4$
 Target fat = $0.3 \times \text{calories} / 9$
 Target protein = $0.3 \times \text{calories} / 4$

III. Meal Logging

Photo logging

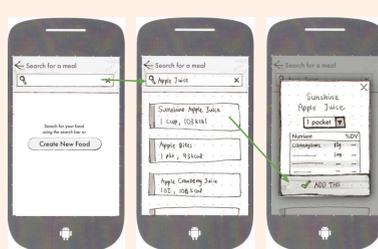
Combining Camfind recognition API and database search.

Support logging of multiple foods in one meal.



Search logging

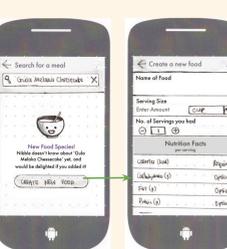
Add a single food from the database.



Create new food

If a food isn't present in the database during a search, user can create their own food.

This can occur during photo logging or search logging.



1. Food Diary

Food Diary

Main components:

1. Log Meal Menu
2. Daily Summary Cards (for diary entry)

Log Meal Menu

Daily Summary Card Contents:

- All meals summary
- All meals summary for each day

Old designs

2a) Nutrition summary (in daily summary card)

Main challenges:

- How to make meal logging easily accessible
- How to display the daily summary cards in one/food or one by one?
- How to navigate to a particular day's summary card?

For weight loss:

- Focus on calories

Have a slider carousel for calories slider, so that they can swipe to see how many calories they have left to consume.

For diabetes:

- Focus on carb counting
- To reduce clutter, hide fat and protein and calorie details under a 'More Stats' button

2b) Meals summary (in daily summary card)

Draw attention to the value...

1. **Carbs:** The food is 400% carbs, or if the carb content exceeds 1x number of meals user typically had 'carbs limit'
2. **Fat:** The food is 48% fat, or if the fat content exceeds 1x number of meals user typically had 'fat limit'
3. **Protein:** The food is 10% protein, or if the protein content exceeds 1x number of meals user typically had 'protein limit'
4. **Calories:** If calories exceeds 1x number of meals user typically had 'calories limit'

Meal has been processed

- **State:** Name of the dish or the names of the separate components are listed
- **Editing:** Click on the name to edit the name. Click on the values to edit the values.

1. Log a Meal Menu

Method 1: At the top of the diary screen

Method 2: A separate menu screen (C) on the title bar

Method 3: A radial/linear menu floating action button

These methods are not mutually exclusive, so we can have more than one at the same time.

Method 1 - straightforward, the first thing you see. However, once you scroll down, it will be out of view.

Method 2 - intuitive, as the (C) button is commonly placed in the title bar. However, requires a step to log and a step to go back to the main screen.

Method 3 - trendy, obvious. However, might be obtrusive. But it can be hidden as user scrolls down and appear as user scrolls up.

2. Daily summary cards

Display Method 1: Newest data by most recent

Jumping to an individual day's summary

2. Diet Reports

Diet Reports

Allows user to view the list of weekly, monthly and goal reports.

Navigation

List of Reports

- Filter by type of reports - all, weekly, monthly, goal reviews
- Click calendar icon to view by date

Reports by date

- Dates which reports were released on will be marked on the calendar
- User can pick a date and the reports released on that date will show

Weekly Report Design

This is all on one screen

Leading screen

- Average calorie
- Bar chart of the calories
- Bar chart of the goal
- Weekly and monthly projected rate of weight change

Calorie intake

- Current weight, goal weight
- Dates: Start, End, Days left
- Graphic visualization of progress

Nutrients

- Donut charts of weekly average % compared to limit of all other nutrients

Healthiest meals and Worst meals

- Photos of them with the food score
- Tap them to view meal details

What went well, what can be improved

- For what went well, tell them the health effects of doing the healthy thing. Congratulate and encourage.
- For what can be improved, talk about the harmful effects of having too much/ too little of the thing. Give them suggestions on how they can improve (action plan)

Food recommendations

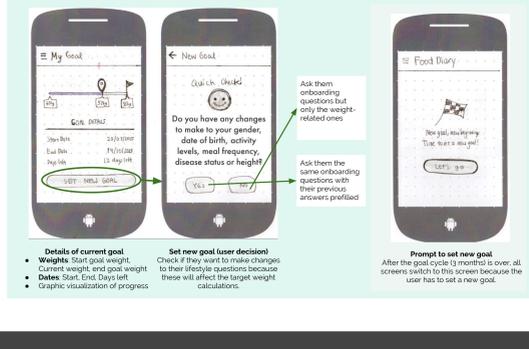
- Search the database for foods that is ranked by their macros in nutrients that the user did not consume enough

4. Weight log



Implement if there's time. Weekly reminder to log weight?

5. My Goal



Ask them the same onboarding questions with their previous answers prefilled.

Details of current goal

- **Weights:** Start goal weight, current weight, and goal weight
- **Dates:** Start, End, Days left
- Graphic visualization of progress

Set new goal (user decision)

Check if they want to make changes to their lifestyle questions because these will affect the target weight calculations.

Prompt to set new goal

After the goal cycle (3 months) is over, all screens switch to this screen because the user has to set a new goal.

6. Profile



Profile

As of yet, there is no option to edit user details. Because their goal is tied to those details. To edit, they have to set a new goal. Perhaps direct them to set a new one!

7. Settings



Settings page

Dashboard to set the app's options. Right now, only meal reminders need to be set, hence that lone entry.

Misc Modal Dialogs

Meal Detail Modal Dialog

In the

- Daily summary
- Diet Reports

We often show a summary of meal details.

The user should be able to tap on the meal to view its full details.

Food Detail dialog

- When adding foods: Before adding a food from the database, user should be able to view its full details and select how many servings to add.
- From meal details: More details for the foods inside the meal. User can tap its name to open a food detail dialog.