Assignments — Week 09 | Design | Design Patterns

Design patterns are general, reusable solutions to commonly occurring problems in design. As in city planning and architecture, design patterns in UX development involve a hierarchy of patterns, starting at the conceptual level down to the low-level implementation of a component. van Welie & van der Veer suggested six levels: *business purpose, posture level, experience level, task level*, and *action level*. These levels make up a framework that helps designers analyze patterns in existing designs and utilize pattern to *generate* designs, following a top-down design process. In this assignment, you will use this framework to do both in the context of mobile fitness/calorie-tracking applications. First, you will identify an existing system (see this link for an example list) and analyze the patterns used in its design. Second, you will use the framework to start designing your React Native 3 deliverable—a mobile fitness/calorie-tracking app. Below are the levels of the framework for reference.

Levels of Pattern Languages in Interaction Design

Business Purpose. Conceptual design that captures the role that the design plays in user's life, i.e., the mission of the application, e.g., "helping users achieve fitness goals."

Posture-Level Patterns. The structure that an application follows, i.e., what type of application it is, e.g., "a calorie tracking app," "a a step counter app," or "a life coaching app."

Experience-Level Patterns. The *user goals* that make up the *user experience* that the application supports, e.g., activity tracking, coaching, and reviewing.

Task-Level Patterns. Design solutions that help users accomplish sequences of actions that make up user *tasks*, e.g., logging a meal, capturing a run, or completing a workout.

Action-Level Patterns. Design solutions that support the *actions* taken to complete the steps(s) of the user's task, e.g., a "start" button to initiate activity tracking, a selectable list entry for a food item.
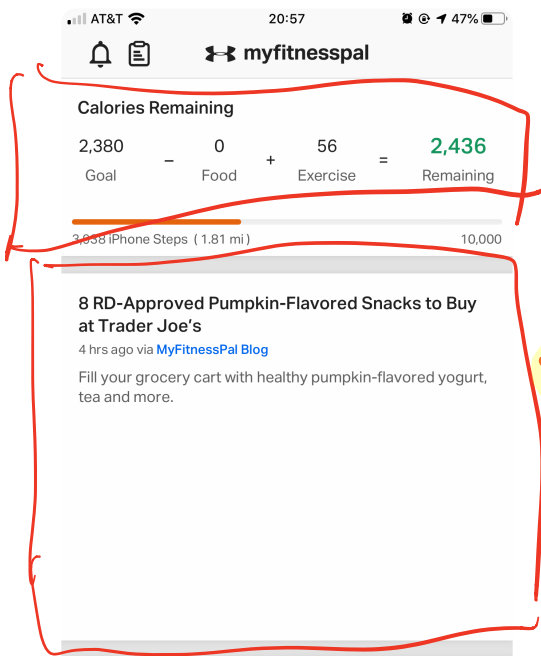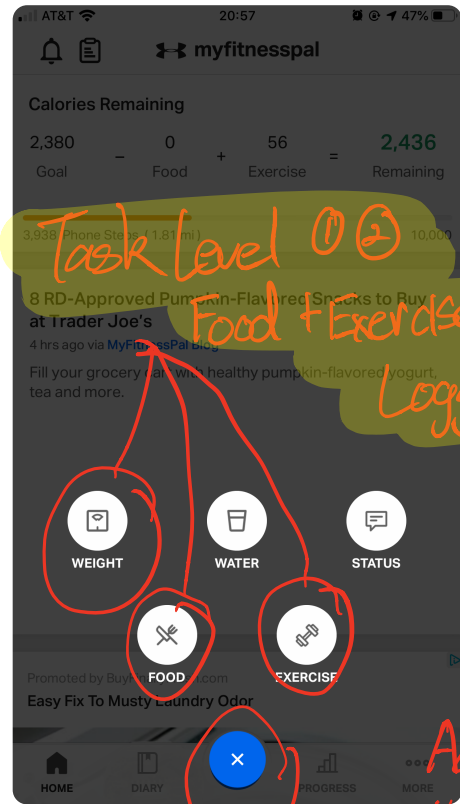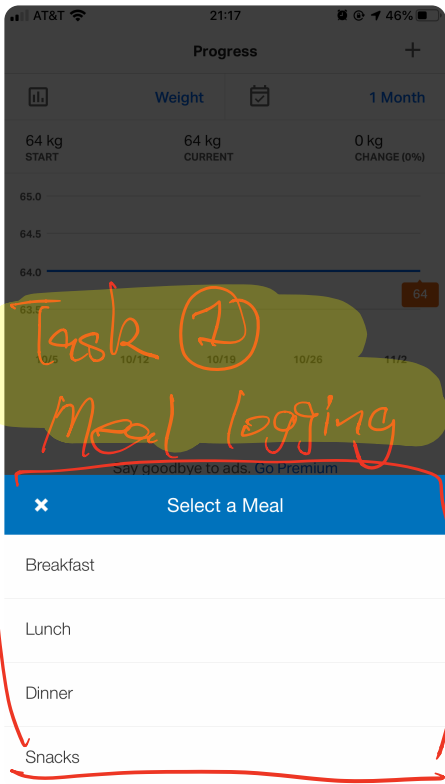

Step 1. Analyze an Existing Design. In this step, you will identify a mobile fitness/calorie-tracking application. Before you settle on an application, study the landscape of applications (e.g., search online) and choose an app that you think is well designed and clearly have patterns that you can analyze. For example, you should be able to easily identify the business purpose by looking at the developer's website for the app or on the App Store/Google Play. Find/capture 3–5 screenshots that illustrate the main features of the app. There are two deliverables in this step. First, provide below your analysis of the patterns at each level below in the same way we have done in class using the analysis template (download PDF, PPTX,
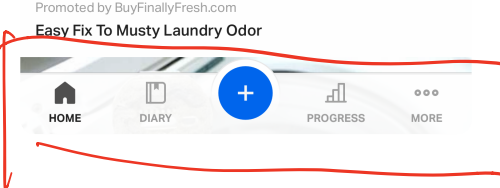
Keynote versions, or use the drawing below). Second, annotate the screenshots to highlight the *task-* and *action*-level patterns you can identify. You should be able to find at least 5 patterns for the Task Level and another 5 for the Action Level.

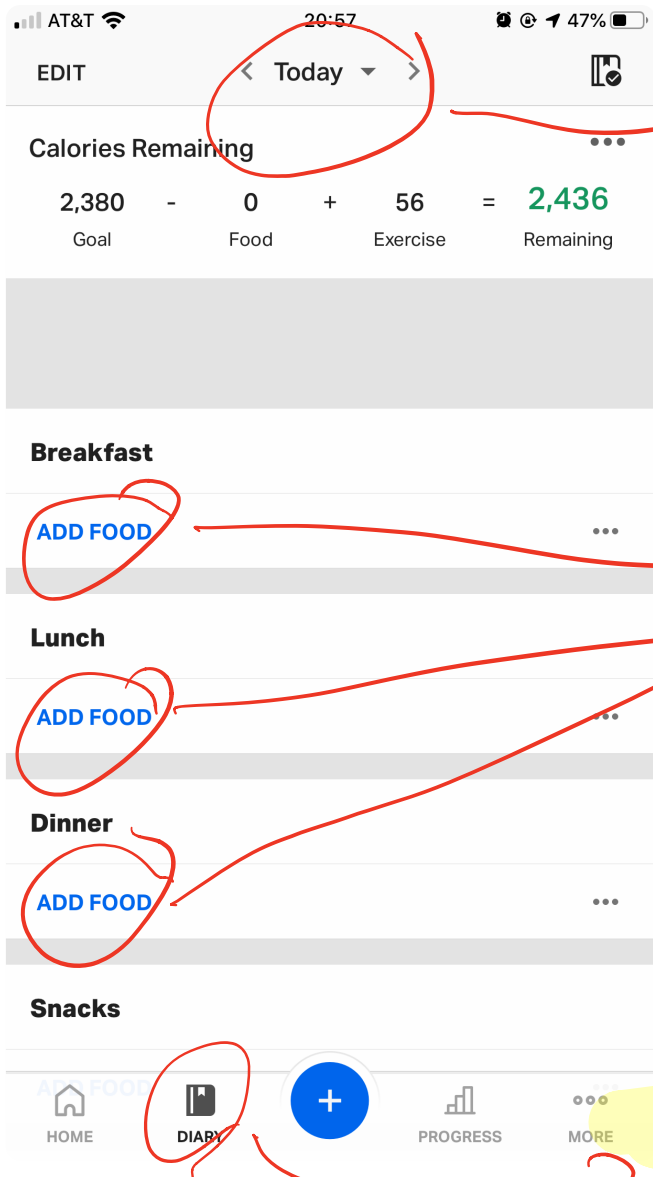| Business Goals Mission of the application	Help users track dietary and exercise Determine calories intake based on their goals
Posture Level 'Type' of application	An exercise tracking app, A calorie tracking app, A weight tracking app A lifestyle recorded diary app
Experience Level User goals	Progressively motivational guiding or informing to help user maintain a healthy weight
Task Level Task sequences	1. Logging meals 2. Logging exercises 3. Reviewing their lifestyle history 4. Checking the progress toward the body weight goal 5. Healthy Recommendation
Action Level User actions	1. "+" button to give user options to log num for different categories 2. An underneath tab that user could switch between different function area 3. A calendar that records the current day intake and exercise 4. A card that update with the latest dietary recommendation 5. A progress chart that user could drag to look at their weight at each point of the time

Annotated screenshots

Screen 1 (Progress):
AT&T 21:17 46%
Progress +
Weight | 1 Month
64 kg START | 64 kg CURRENT | 0 kg CHANGE (0%)
65.0
64.5
64.0
63.5
10/12 10/19 10/26 11/2
Say goodbye to ads. Go Premium

✕ Select a Meal
Breakfast
Lunch
Dinner
Snacks

Handwritten: Task ① Meal logging

Screen 2 (myfitnesspal):
AT&T 20:57 47%
🔔 📋 myfitnesspal
Calories Remaining
2,380 Goal − 0 Food + 56 Exercise = 2,436 Remaining
3,938 iPhone Steps (1.81 mi) 10,000
8 RD-Approved Pumpkin-Flavored Snacks to Buy at Trader Joe's
4 hrs ago via MyFitnessPal Blog
Fill your grocery cart with healthy pumpkin-flavored yogurt, tea and more.
Promoted by BuyFinallyFresh.com
Easy Fix To Musty Laundry Odor

WEIGHT WATER STATUS
FOOD EXERCISE
HOME DIARY PROGRESS MORE

Handwritten: Task Level ① ② Food + Exercise + Weight Logging
Action Level ① "+" Button

Screen 3 (myfitnesspal home):
AT&T 20:57 47%
🔔 📋 myfitnesspal
Calories Remaining
2,380 Goal − 0 Food + 56 Exercise = 2,436 Remaining
3,938 iPhone Steps (1.81 mi) 10,000
8 RD-Approved Pumpkin-Flavored Snacks to Buy at Trader Joe's
4 hrs ago via MyFitnessPal Blog
Fill your grocery cart with healthy pumpkin-flavored yogurt, tea and more.
Promoted by BuyFinallyFresh.com
Easy Fix To Musty Laundry Odor
HOME DIARY + PROGRESS MORE

Handwritten:
Task level ④ Check the progress
Task-Level ⑤ Recommend Lifestyle
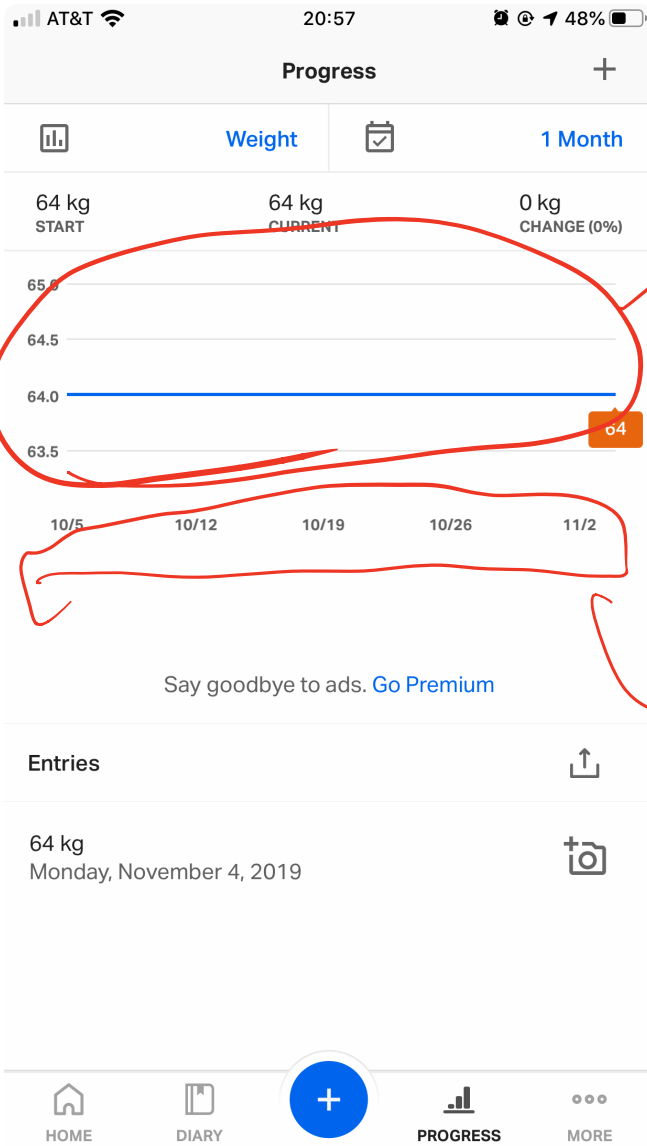Action-Level ④ Card which click to view more info
Action level ② Tab Switch Between functions.

Action Level ③ Record the current Day and previous Day

Task Level ① Logging meals

Task Level ② Life Style History

Screenshot content:

AT&T — 20:57 — 47%

EDIT   ‹ Today ›

Calories Remaining

| 2,380 | − | 0 | + | 56 | = | 2,436 |
| Goal | | Food | | Exercise | | Remaining |

Breakfast
ADD FOOD

Lunch
ADD FOOD

Dinner
ADD FOOD

Snacks
ADD FOOD

HOME   DIARY   +   PROGRESS   MORE

AT&T 20:57 48%

Progress +

| Weight | 1 Month |

64 kg
START
64 kg
CURRENT
0 kg
CHANGE (0%)

65.0
64.5
64.0
63.5

o4

10/5   10/12   10/19   10/26   11/2

Say goodbye to ads. Go Premium

Entries

64 kg
Monday, November 4, 2019

HOME   DIARY   +   PROGRESS   MORE

Action Level ⑤

→ Progress Cart which
can click to check
certain data point

→ Task Level ③+④
Show the progress
and history.

= Task Level

= Action Level

Step 2. Generate Design. In this step, you will follow the top-down design process using pattern languages to generate a lo-fi prototype design for your React Native deliverable. Although the deliverable will be constrained by the requirements of each React Native assignment, you will still be able to carry over some of your ideas from this assignment to your deliverable. To complete this step, using the template you used above, start making design decisions about your application, starting from the top and moving to the bottom. Consider what you want the *mission* (business purpose) of your app to be, what *type* of app it should be, and so on. Should it be motivational, providing messages to keep up the good work during the day, or more technical making sure that users are given detailed breakdowns of micronutrients? Outline your decisions in the analysis template below. Next, informed by your design decisions, create 3–5 (hand-drawn or digitally generated) **wireframes** of your envisioned application to show the task- and action-level components and annotate them to highlight the patterns. You should try to define 5 patterns in each category.

Annotated screenshots

iPhone X/XS/11 Pro – 1

Home | History | Community | Todos

You next **tennis** game with **Tim** at **7:15pm**
You next meal will be **chicken breast salad**
Click to view all TODOs

You food and activity trends for today

Activity Goals chart — 10000 steps
70%

Updates from your sports community
Wants to play tennis today in Madison?
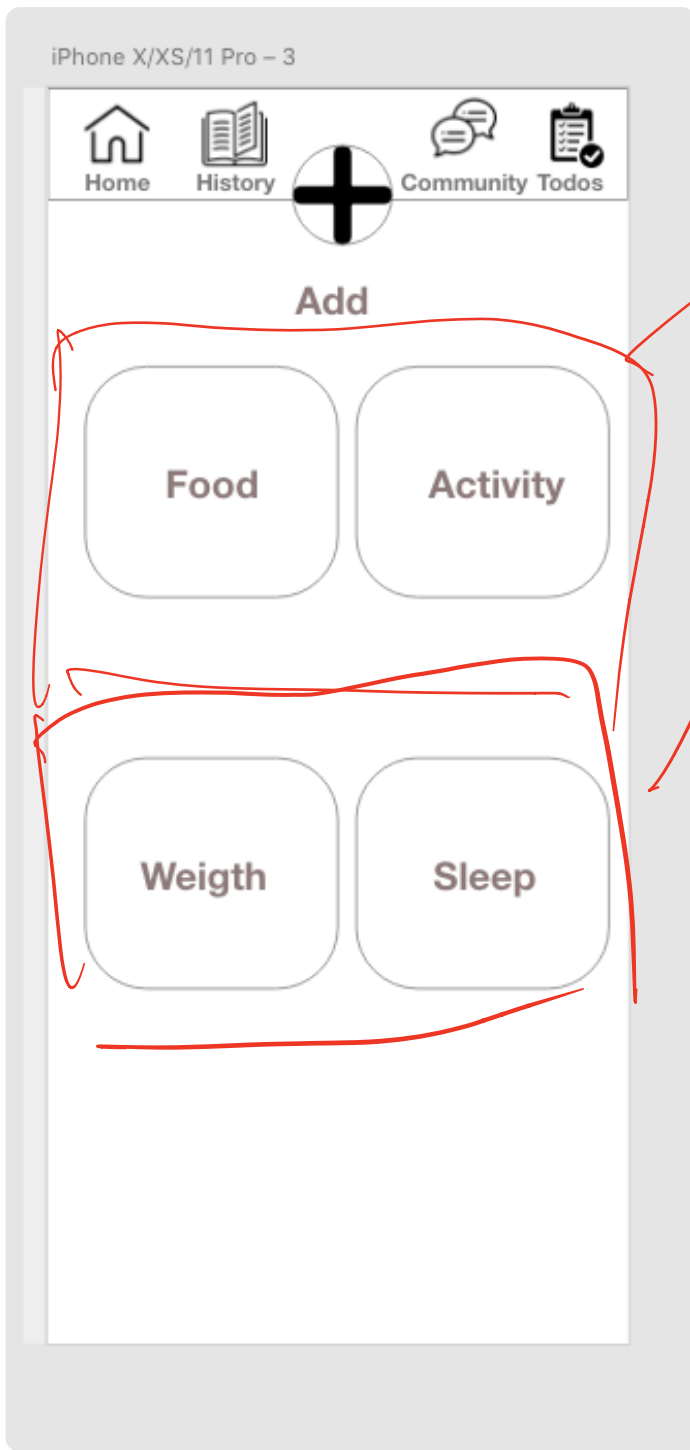Andrew just reach 5000 miles this year

Action Level A:
"+" Button to help user log file

Task Level A:
Logging food and activity

Task E:
Review the activity and Consumption history.
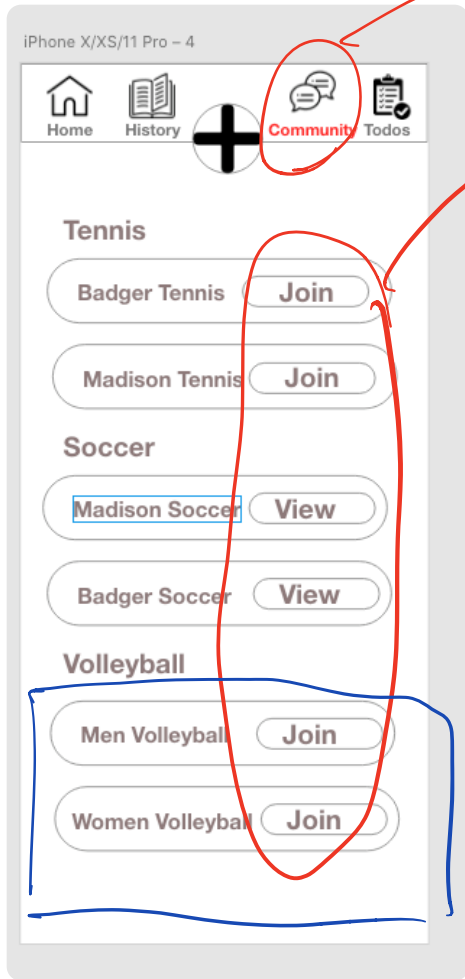
Task D
Recommend Food to eat

iPhone X/XS/11 Pro – 3

| Home | History | | Community | Todos |

Add

| Food | Activity |

| Weigh | Sleep |

Task level A,
Log for
Food and Activity

(After clicking
"t", this page
show up)

iPhone X/XS/11 Pro – 4

Home | History | Community | Todos

Tennis

Badger Tennis — Join

Madison Tennis — Join

Soccer

Madison Soccer — View

Badger Soccer — View

Volleyball
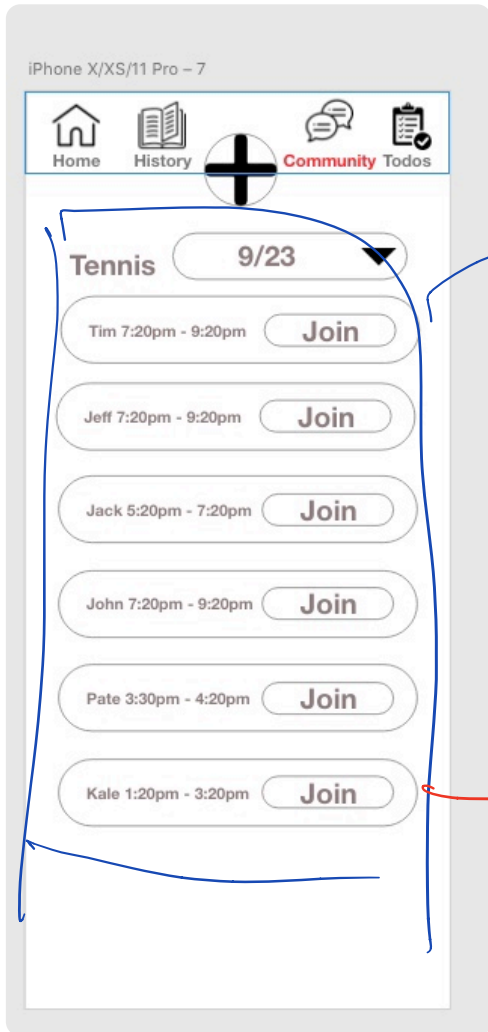
Men Volleyball — Join
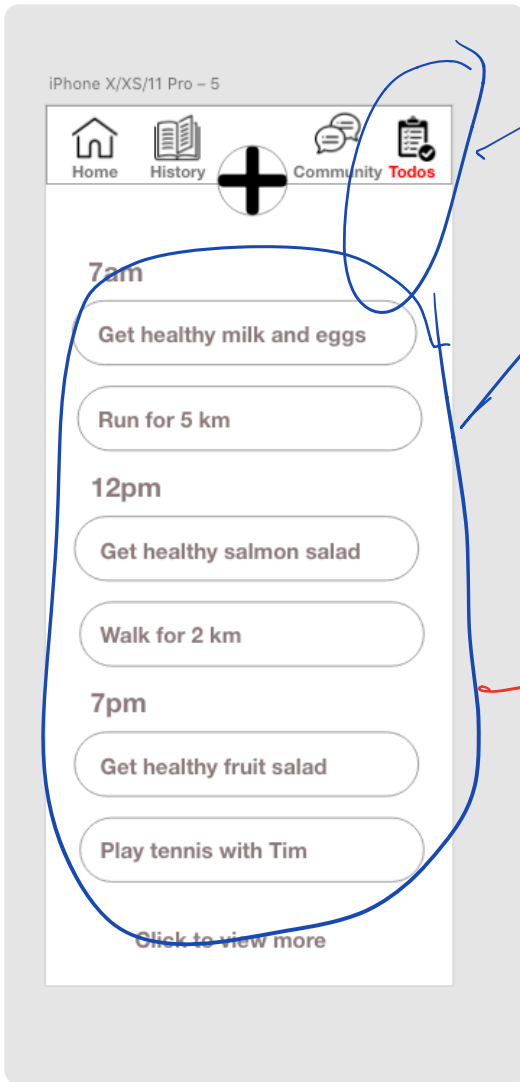
Women Volleyball — Join

Task level B i

Join the Sports Community

Action-Level B i

A card section with different Sports Community

After clicking the view community from above, this page show up.

iPhone X/XS/11 Pro – 7

Home   History   Community   Todos

Tennis   9/23 ▼

Tim 7:20pm - 9:20pm   Join

Jeff 7:20pm - 9:20pm   Join

Jack 5:20pm - 7:20pm   Join

John 7:20pm - 9:20pm   Join

Pate 3:30pm - 4:20pm   Join

Kale 1:20pm - 3:20pm   Join

Action ()
Calendar section
to find player to play
with

Task Level ()
Find a teammates
to play sports.

iPhone X/XS/11 Pro – 5

Home | History | Community | **Todos**

7am

Get healthy milk and eggs

Run for 5 km

12pm

Get healthy salmon salad

Walk for 2 km

7pm

Get healthy fruit salad

Play tennis with Tim

Click to view more

Action Level D
To do list
Show the recommend
food and activity

Task Level D
Check Recommend
food to eat

Phone mockup — History screen

iPhone X/XS/11 Pro – 6

Home **History** Community Todos

9/1 - 9/30 ▼

9/1

Consume 2300 calories food
Work out for 100 minutes
Play tennis with Tim

9/2

Consume 1700 calories food
Play soccer with Jack
Work out for 500 calories

Click to view more

Handwritten annotations:
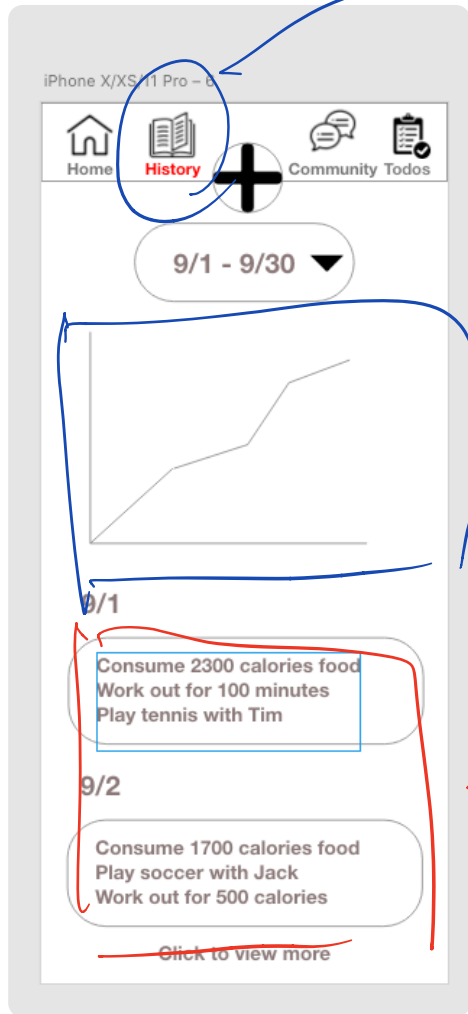
Action level E
History Log show
the detail progress

Task Level E
Review the history
activity info