Hello,
I am Ruiqi.
This is my portfolio.

Ruiqi Kong

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Ruiqi Kong

MSc Human-Computer Interaction

I am happy to solve the problems discovered by myself, and I am passionate about exploring the relationship between human and technology.

I have experience in:
- user research
- design and development of applications on my own or in teamwork
- management of UI department in a student studio
- production of templates of App prototype
- organasation of group counseling activities

Contents

Leode:
Find a Guide
Just Like a Friend

Photo by Ian Schneider on Unsplash

Type	Mobile Application Design
Time	5 weeks, 2017 Summer
Property	Individual Project
Tools	Adobe Illustrator, Modao
Skills	Questionnaire, Expert Interview, Competitive analysis, Information architecture, Prototyping, User testing

Project background

After a disappointing travel experience in a package tour, I started to explore: with limited budget, whether there is an approach to a nice trip without complicated plan in advance?

Photo by Abbie Bernet on Unsplash

Proposed solution

A mobile App that includes the tourist end and the guide end was proposed. Tourists filter the local guides in the travel destination, while the guides are local residents who are familiar with the city and are ready to lead tourists around the city.

The name of the App was taken from "leopard cat" and "guide", which refers to guides that are as lovely and playful as this kind of cute animals.
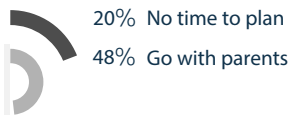
LEODE

Define the problem: no time to plan for a trip

Online survey about travel habits

To understand the problems travellers often meet when planning for a trip, a survey was published and 97 valid answers were received. It shows 95% choose to travel in a holiday, and over 90% prefer a specialised itinerary. However, due to the time and energy required to plan for a trip by oneself, many people have to choose a package tour.

20% No time to plan

48% Go with parents

When to choose a package tour

Many people choose a package tour due to lack of time and energy.

49% Save worries

52% Understand the destination better

34% Navigation or Transportation

When a guide is needed

People believe guides save worries during a trip.

Package tour: Save worries, various itineraries; limited choices, forced shopping.

Self-help tour: Freedom to control time, personalised itinerary; require a large amount of time to plan.
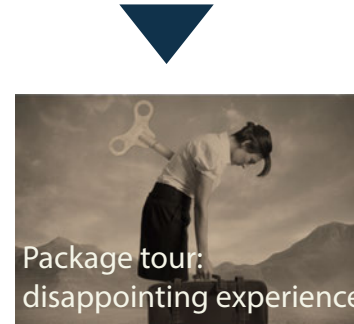
Private guide: Service of high quality; lack of effective regulation, expensive.

Comments on ways of travelling

People care about the choices of itinerary, time to prepare, regulation and cost.

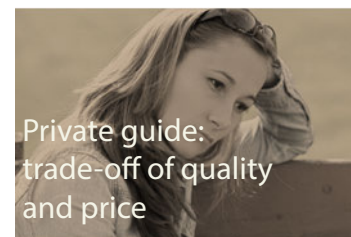## Opportunities brought by the 3 travel modes

Core problem: difficult to enjoy a trip on holiday

Package tour: disappointing experience

Limited choices of itinerary
Tensive schedule
Many group members
Plain food

Local residents could guide tourists to special attractions that package tour may not include, and adjust schedule flexibly according to tourists' need.

Self-help trip: exhausting preparation

Unfamiliar destination
Many items to be checked
Uncertainty of time and expense
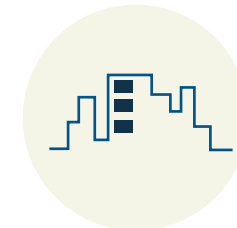
Local residents are familiar with the area and know suitable accommodation choices.

Private guide: trade-off of quality and price

High expense
Market regulation to be improved

Potential "local guides" tend to see being guide as a part-time job, so the charge would be in an acceptable range. Their work will be regulated by the platform.

Further research: will "local guide" work?

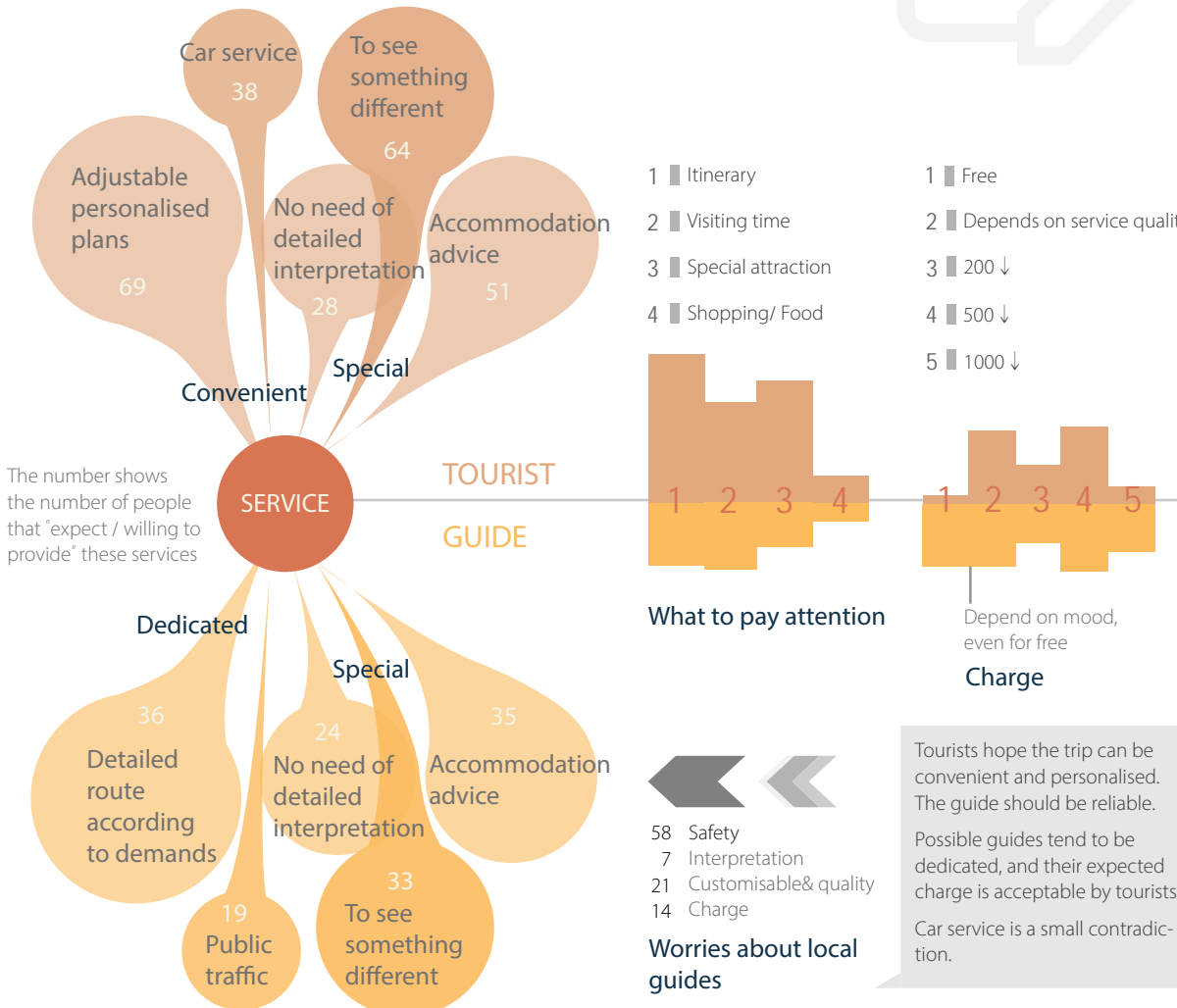## Questionnaire: opinions on "local guides"

I also included questions related to local guides in the questionnaire. 45 of the respondents reported they are willing to become "local guides", and answered the following survey as a potential guide. All the respondents tended to consider the identity of guide as a part-time job or interest.

Car service
38

To see something different
64

Adjustable personalised plans
69

No need of detailed interpretation
28

Accommodation advice
51

Convenient

Special

The number shows the number of people that "expect / willing to provide" these services

SERVICE

TOURIST

GUIDE

Dedicated

Special

Detailed route according to demands
36

No need of detailed interpretation
24

Accommodation advice
35

Public traffic
19

To see something different
33

1 ▌ Itinerary
2 ▌ Visiting time
3 ▌ Special attraction
4 ▌ Shopping/ Food

1 ▌ Free
2 ▌ Depends on service quality
3 ▌ 200 ↓
4 ▌ 500 ↓
5 ▌ 1000 ↓

1 2 3 4

1 2 3 4 5

What to pay attention

Depend on mood, even for free

Charge

58 Safety
7 Interpretation
21 Customisable& quality
14 Charge

Worries about local guides

Tourists hope the trip can be convenient and personalised. The guide should be reliable.

Possible guides tend to be dedicated, and their expected charge is acceptable by tourists.

Car service is a small contradiction.

Expert interview:

Shiqi Wang
Leader of Travel Association in Hunan University

"The route I designed contains my own understanding of the destination, and the 'understanding' should be picturesque, not symbolized."

"With the popularization of private guide, our government will gradually perfect concerning rules."

Liu Yang
A girl who loves travelling on a tight budget

"Local guide is a convenient choice. With them guiding the way, my trip quality could be guaranteed as well. "

"Perhaps I need information only, in that case I just need someone to contact with me online."

Jianbo Zhang
A junior who prefers packet tour

"The local guide's self-quality is critical. "

"Safety comes the first. The rating system is important for tourists to judge the guide's service quality. For me, the price would be first considered."

The mode of local residents as guides could satisfy most tourists' expectation of travel experience, but there exist some contradictions and issues.

03

Define target users and scenarios

Persona: tourist

21 years old
Majored in E-commerce
Busy study schedules
Love travelling, but have little time planning for it
Hope every trip could be relaxing and special
Willing to pay for high-quality service

Qi

Persona: local guide

25 years old
Study History
Have considerable free time
Enjoy making friends
Love travelling, and enjoy planning for a unique route
Familiar with local area

Liu

Qi wants to take a trip in the neighbour city Wuhan, but she has little time to arrange for it, and a boring package tour will not be her choice. Qi opens the APP Leode, entering Wuhan as well as trip date, and she immediately finds a list of guides, among whom the one with FOOD tag attracts her.

Liu discovers a poster calling for the locals to become guides, and she finds this work suitable for her, since she is familiar with Wuhan, especially for delicacies. Liu's application is approved. She becomes a qualified guide, and she adds the FOOD tag to distinguish herself.
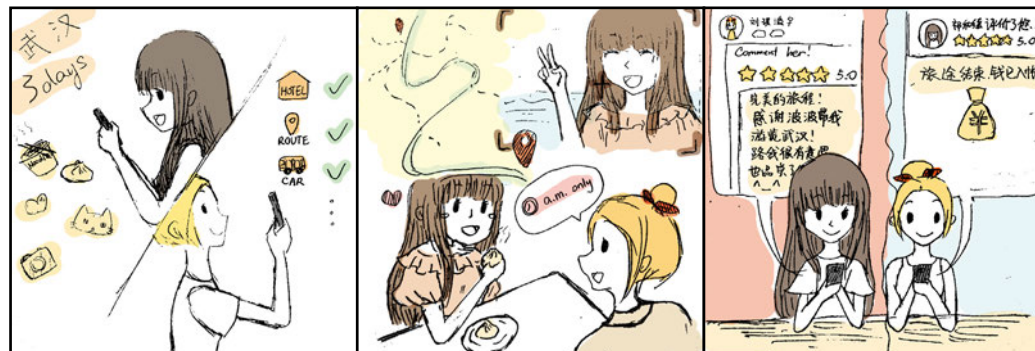
During a brief online conversation, Qi has made her requirements clear, and Liu is ready to satisfy all of them, along with basic accommodation advice. Qi and Liu have a splendid trip together. They taste many local flavours. After the trip, Qi assigns Liu 5 stars. Liu receives corresponding rewards then.

Construction of the platform: competitive analysis

To figure out common features of travel Apps and target the product at a right position, I analysed 4 competitive products from four aspects.

Based on users' demands for a convenient, personalised trip and a reliable guide, I set 3 investigation targets: CONVENIENCE, PERSON- ALISATION, and SENSE OF TRUST. As for the target of 'sense of trust', I will analyse from 2 dimensions: the platform itself and the guide information it provides.

Abundant filter options

Persona- lisation

Sense of Trust

Conven- ience

Reliable platform
Rich information

Easy operation flow

Abundant filter options

Rich information

Easy operation procedure

Reliable platform
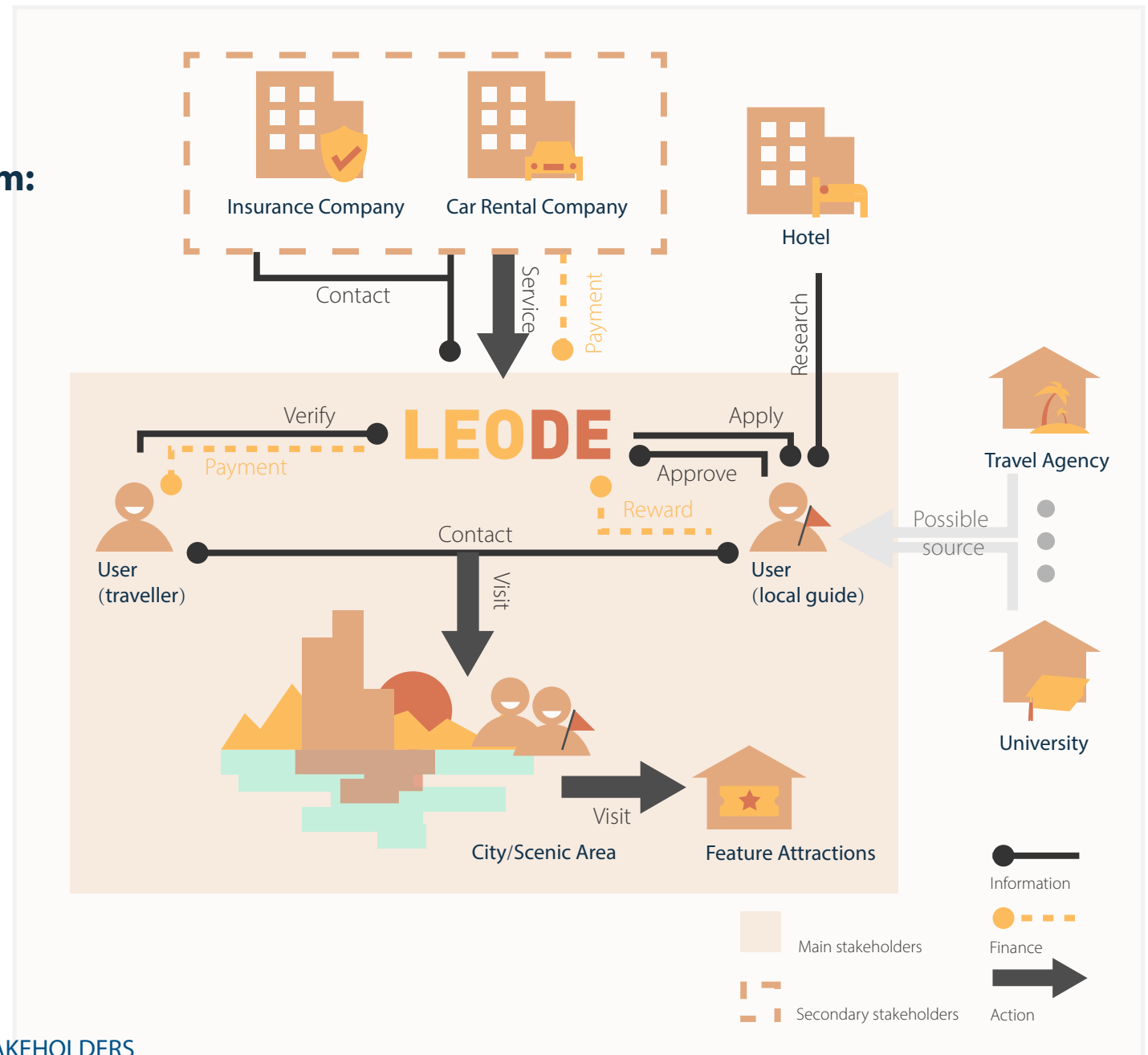
- Wanzi Earth
- Yiqihai
- Sunshine Car trip
- GoPackup

From this graphic, I found that most of the concerning products emphasise richness of information instead of service filter options. Besides, they pay a lot of attention to create a sense of trust between guides and tourists.

Construction of the platform: system map

This application establish a friendly relation-ship between travellers and guides. The local guides spare tourist's troubles of planning a trip, and they can earn some pocket money in return. Many feature attractions can be visited by them, which would support the finance of small spots. In addition, the platform help users contact with reliable insurance company and car rental company.
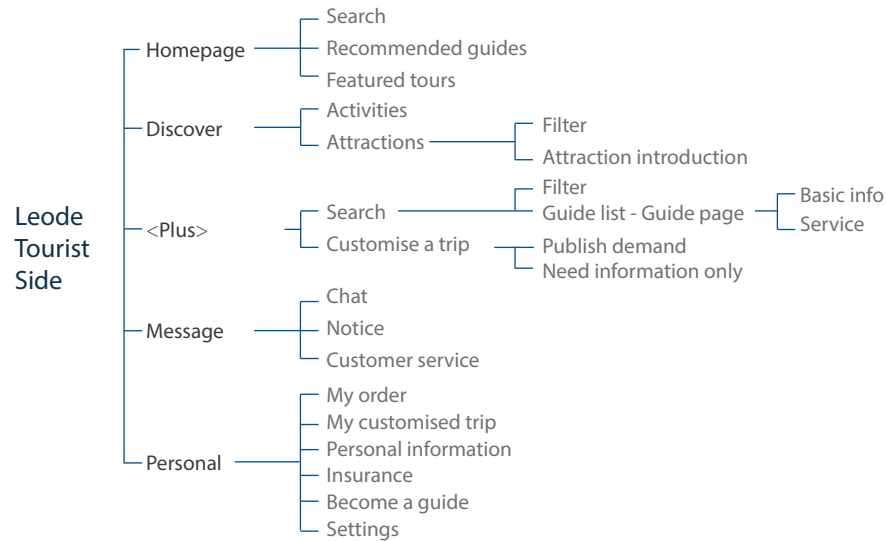
User(traveller/guide)

Tourist attractions
Car rental company
Insurance company
Hotel/transportation/restaurant

City
Tourism

Insurance Company

Car Rental Company

Hotel

Contact

Service

Payment

Research

Verify

LEODE

Apply

Approve

Payment

Reward

Travel Agency

Contact

Possible source

User
(traveller)

User
(local guide)

Visit

University

Visit

City/Scenic Area

Feature Attractions

Main stakeholders

Information

Finance

Secondary stakeholders

Action

STAKEHOLDERS

Build information architecture and prototype

Based on users' mental model and the position of the product, I built the information architecture (IA) of both the tourist side and the guide side, and created interactive prototype.

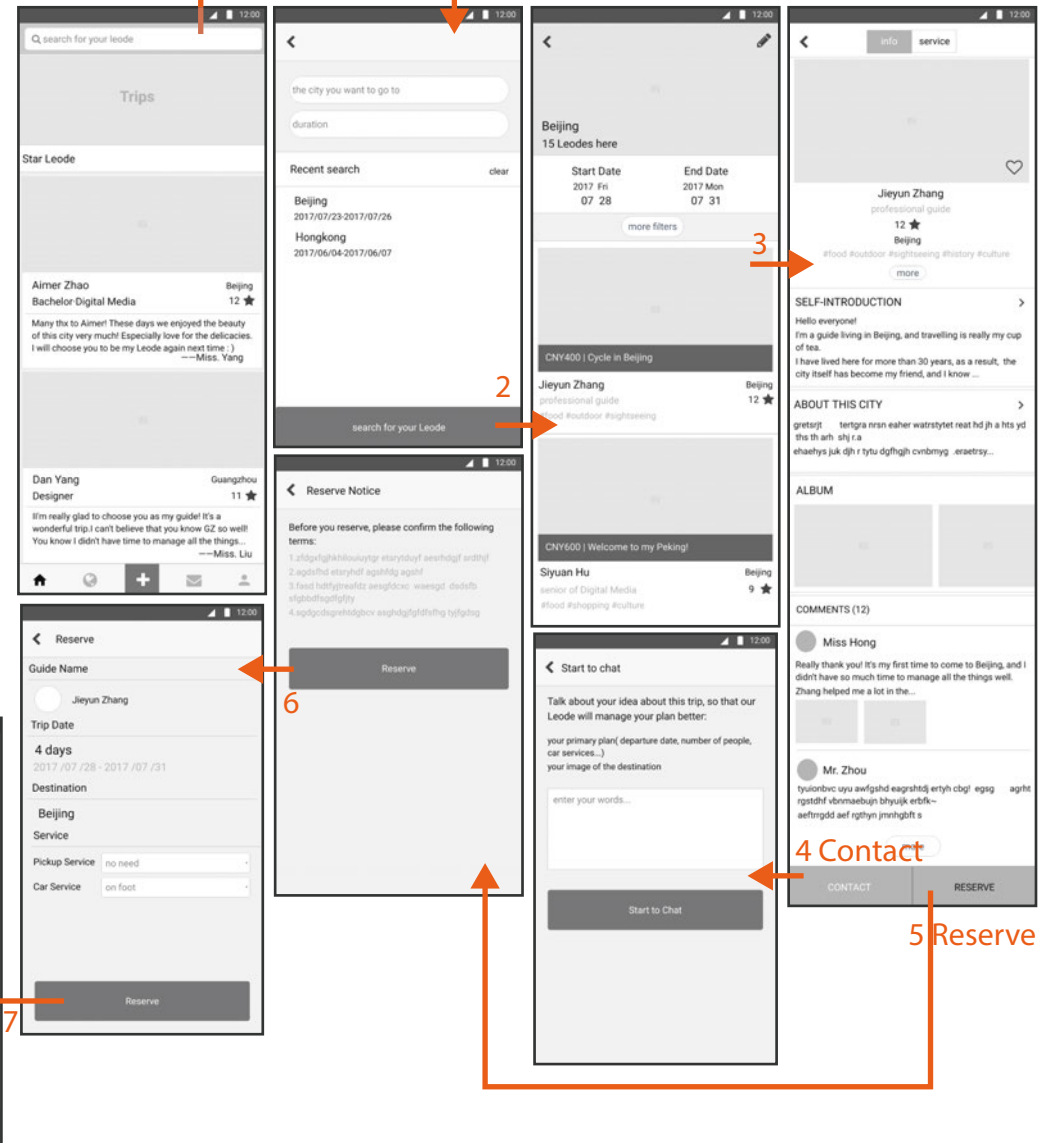The IA of tourist side and the prototype pages of choosing a guide are shown here.

Leode Tourist Side

- Homepage
  - Search
  - Recommended guides
  - Featured tours
- Discover
  - Activities
  - Attractions
    - Filter
    - Attraction introduction
- <Plus>
  - Search
    - Filter
    - Guide list - Guide page
      - Basic info
      - Service
  - Customise a trip
    - Publish demand
    - Need information only
- Message
  - Chat
  - Notice
  - Customer service
- Personal
  - My order
  - My customised trip
  - Personal information
  - Insurance
  - Become a guide
  - Settings

Full prototype ▼

Tourist

Guide

Flow of choosing a guide

1 Search

2

3

4 Contact

5 Reserve

6

7

User testing and design refinement

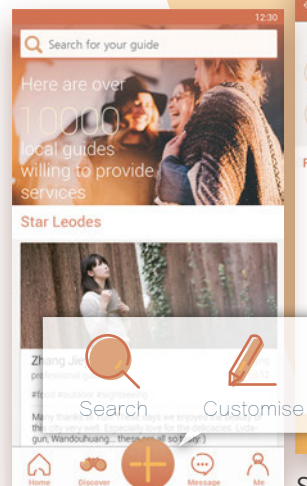|	Task	User 1	User 2	Problem	Analysis	Refinement
Tourist	Find a suitable guide Reserve the guide	✔	✔	The star icon is confusing Not convenient to reserve the guide		
	Confirm the finished trip Rate the guide	✘	✔	Don't understand the meaning of button "End the trip"	Complicated operation flow	
	Publish a demand of personalising a trip	◉	✔	Unsure about the meaning of "I need information only"		Some of the words are polished to make them easier to understand. I also add the RESERVE button in chat page so that tourists can quickly reserve the guide.
	discover special attractions in a certain place	✔	✘	Can't relate "recommendation" to special attractions		
	take part in a trip organized by a guide	✔	✘	Can't find the "trip activities"	Confusing wording	
Guide	Contact with a possible consumer	✔	◉	Unsure about the meaning of "possible consumer"; uneasy to change to another part		
	Accept/ refuse an order	◉	◉	Can't find "accept" button (actually no such button)		For a easy switch between different kinds of customers, I add a tab bar in CUSTOMER part. As the provided service is either full or information only, both of them are labelled.
	Publish a trip activity Publish a recommendation	✔	✔		Unmatching mental model	
	Edit self-introduction Edit service information Edit cover image	◉	✘	Mix self-introduction with basic information; Unsure about the meaning of cover image		

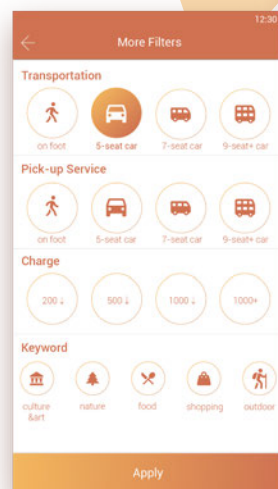✔ Complete without difficulty   ◉ Complete with help   ✘ Fail to finish

Finished solution and reflections
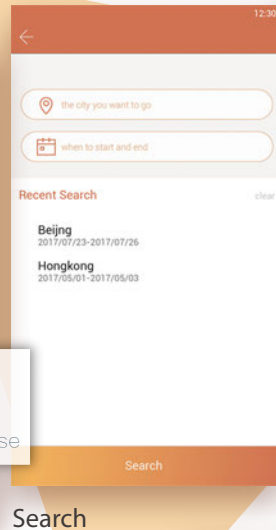
Key words for visual style: lively, reliable

Tourist

Search
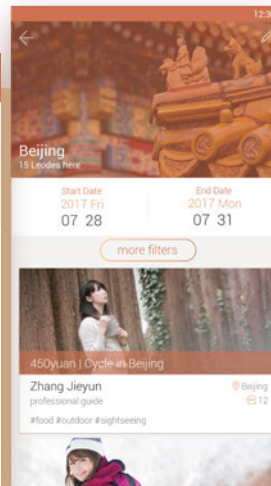Customise

Home

Search

Guide List

Filter

Guide Page

Guide

Qibo Liu — Edit profile

My Customers

1 traveller wants to contact with you

2 in service   3 trips ended

My Homepage

Album Self-introduction About this city Tags

Available time Traffic service

Charge standard

Service

My Customers
new   in service   ended

Customer   Heling Qi
Trip Date   4 Days 2017. 07. 28- 2017. 07. 31
Destination   Beijing
Cancel   Contact

Customer   Xin Mu
Trip Date   4 Days 2017. 07. 28- 2017. 07. 31
Destination   Beijing
Cancel   Contact

Customer in Service

Tags

About Trip
culture& art   nature   food
shopping   outdoor

About Yourself
history   music   photograph
film   painting   animation

Add your tags here! Split by :
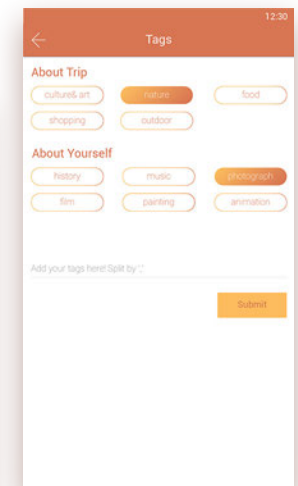
Submit

LEODE

Highlights and further work

Leade builds a bridge between busy young groups. It could satisfy the needs of young travellers who have no time to plan for a trip and yet look for personalised travel experience within limited budget.

The personalised tags of guides make the possibility of finding a guide with common interests higher, and thus users are more likely to have a satisfying itinerary with the help from guides.

However, the design solution lacks consideration in the safety issues of the platform, which requires careful investigation.

End of Project 1

Codudo:
Enhance Senses of Belonging through Co-doodling

Photo by Kimberly Sterling on Unsplash

Type	Interactive System Design
Time	10 weeks, 2018 Autumn
Property	Group Project for the course Interaction Design
Tools	Adobe XD
Skills	Questionnaire, Interview, Wireframing, Paper prototyping, User testing, Video prototyping
My Role	Coordinator and Interaction Designer
My Team	Tianyu Guo, Ruiqi Kong, Guangpeng Wang, Yixin Zhao

Project background

The theme of this project was "weaving the threads", which required us to propose a design that could reflect the relationship between technology and human. We set the topic to be senses of belonging. The problem we tried to alleviate is the lack of senses of belonging among international students at UCL.

Photo by Scott Webb on Unsplash

Proposed solution

We designed a system that includes three parts: a doodle booth, a mobile application and a display screen. The system helps enhance senses of belonging from the aspects of participation, similarity, recognition, and emotional link.

What is the problem? Who has the problems?

We were initially interested in the problem about mental health. With investigation around this topic as well as design constraints shown in this page, we defined the core problem and target users, which will be shown in the next page.

Desk research

- Existing products
- Students' ways to release emotion
- Common mental problems (especially foreign students)
- Campus mental health situation
- Reward system to attract people to interact with

Questionnaire

- Demographic information (e.g. English speaking ability, number of years living in London)
- Situation of emotion regulation and adaptation to new life at UCL
- 9 closed questions and 4 open questions.
- 60 effective responses

Initial results

- Many international students had difficulty expressing oneself in English
- Some felt lacking a sense of belonging
- The longer time one lives in the UK, the fewer peoblems s/he might have

Constraint

Avoid sensitive topics such as mental health

Persona

Goals (Assumption)

- Become more positive
- Be more confident to express myself
- Get involved in larger groups and enhance belongingness

Feature

Main problems that cause negative emotion

- Heavy study pressure.
- Lack friends and don't know how to make new friends.
- Communication barriers.
- Low social adaptation due to cultural gap. (e.g., recreation, lifestyle)
- Heavy employment pressure.

Ways to adjust emotion

- Self-readjustment (e.g. distract attention)
- Talk to friends or relatives

Activities

- Watch TV programmes
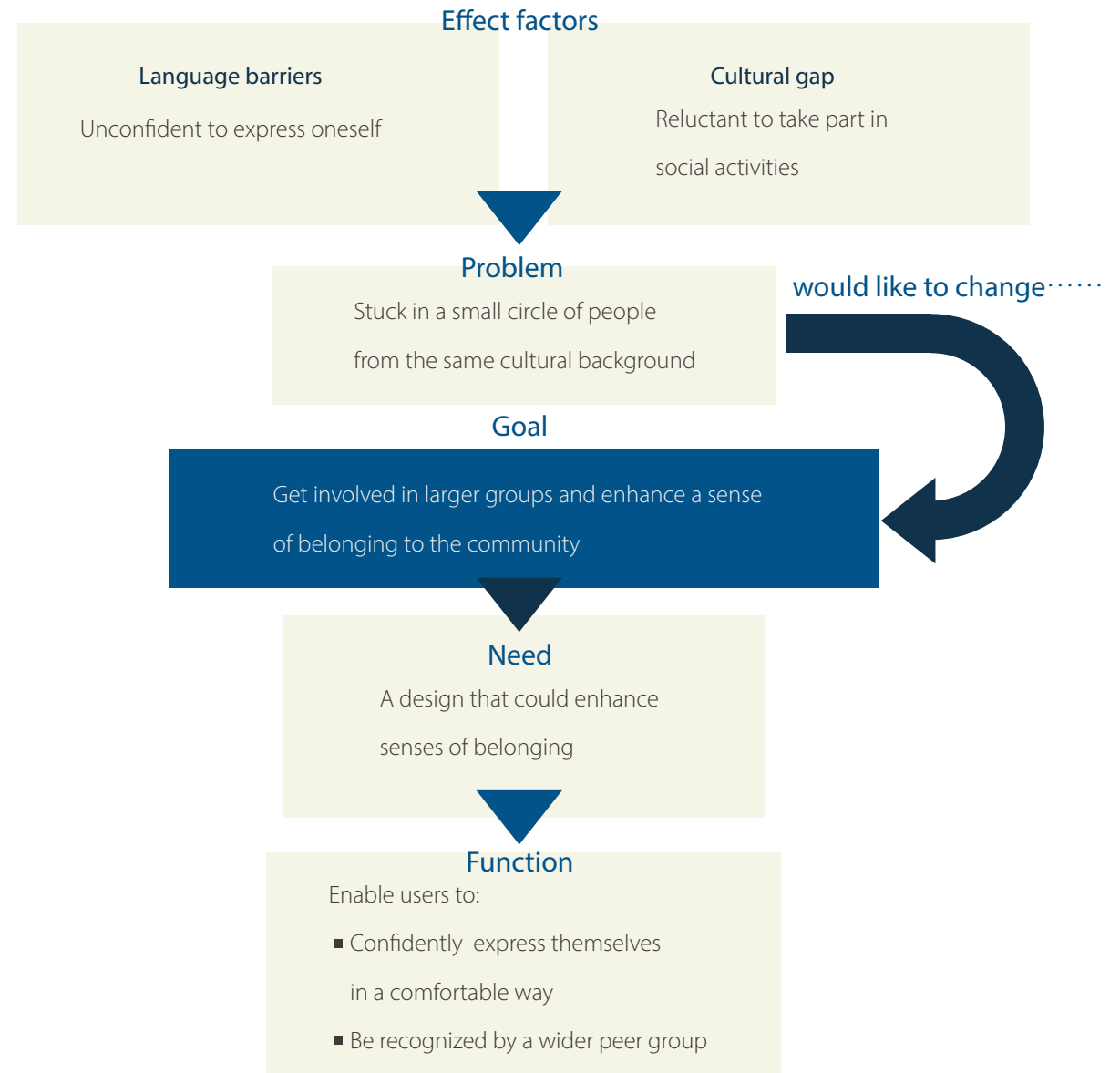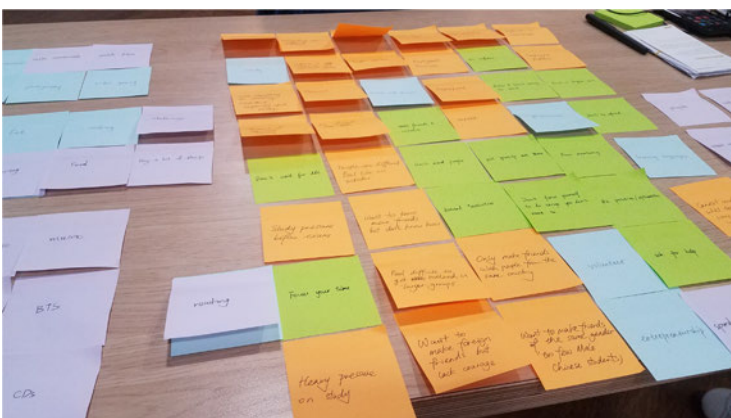- Listen to music
- Play games

Semi-structured Interview

- To verify the assumed goals in persona and confirm the core problem
- Focus on actual situation of making friends and motivation to build relationships with other members in the community
- 10 international students whose native language is not English were interviewed

International students: lacking a sense of belonging

We used thematic analysis to gain insights from the collected data in questionnaires and interviews. After figuring out the factors cause the problem and the general goal of users, we identified the direction of our design solution.

Using Affinity graph to find themes ▼

Effect factors

Language barriers

Unconfident to express oneself

Cultural gap

Reluctant to take part in

social activities

Problem

Stuck in a small circle of people

from the same cultural background

would like to change·······

Goal

Get involved in larger groups and enhance a sense

of belonging to the community

Need

A design that could enhance

senses of belonging

Function

Enable users to:

■ Confidently express themselves

   in a comfortable way

■ Be recognized by a wider peer group

Explore design space: compare alternative solutions

Sketching

We used sketches to explore possible solutions. Then we applied **four mechanisms of senses of belonging** as a filter to select solutions. It resulted in two solutions: doodling and music composition.

Increase of Participation

Identification of Similarity

Acquisition of Recognition

Establishment of Emotional Connection

Music composition

Doodling

Four-quadrant chart

Storyboard

Doodling

Music composition
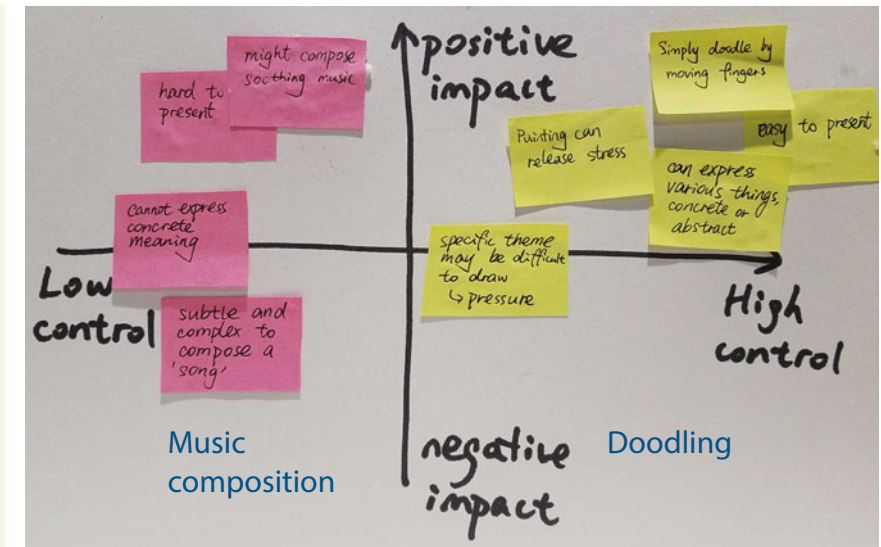
The two solutions could be combined, but it might make the system too complex. To compare the two solutions which both seemed competitive, we applied a four-quadrant chart with two dimensions: level of control and degree of positivity of possible impacts.

Finally, we decided the solution would be co-doodling.

Roy F. Baumeister and Mark R. Leary. 1995. The need to belong: Desire for interpersonal attachments as a fundamental human motivation. Psychological Bulletin, 117, 3 (1995), 497-529.
John T. Cacioppo and Willian Patrick. 2008. Loneliness: Human nature and the need for social connection. WW Norton & Company. New York. NY
Vanessa May. 2017. Belonging from afar: nostalgia, time and memory. The Sociological Review, 65, 2 (2017), 401-415.
Bert N. Uchino, John T. Cacioppo, and Janice K. Kiecolt-Glaser. 1996. The relationship between social support and physiological processes: a review with emphasis on underlying mechanisms and implications for health. Psychological bulletin, 119, 3 (1996), 488.

System, function, and interaction

Starting from a "doodle booth", we completed the design of a system. We made the functions of each component clear under the guidance of for mechanism of senses of belonging. The three design details on the right was produced by me.

Participation
Similarity

Doodle booth

Doodle and submit
Connect with interested doodles

Mobile App

Interact with today's doodle
Vote for the next day topic
Personal record
Message

Participation
Recognition
Emotional link

Display screen

Show the complete picture of everyone's doodle

Participation

How to select interested doodles and send your "echo" to the author?

Feedback: action done

Gesture: double-tap

Double tap on the doodles you feel echoing your work!

Wording: "Echo"

Double tap on the doodles you feel echoing your work!

Visual: transparency to distinguish the selected and the unselected

Let me return | I'm done!

Let me return | I'm done!

Your doodles have been sent !
Thank you for becoming one of the 321 lovely doodlers today!

Now you can explore the App :-)

How would the pages switch?

Name
Archive
Message
Comment
Like

Left side bar

Me | Topic

Long press to enter the archive

Today's Topic
DD/MM/YYYY

Today's Topic
DD/MM/YYYY

Select Date

Swipe right to see the past doodle record of the community
Swipe left to vote for the topic of the next day

After discussion, we decided to cancel the gesture of long press to make the process simple. A calendar widget would be added in the main page.

How to interact with doodles that are non-linearly distributed?

Back

8

6

3
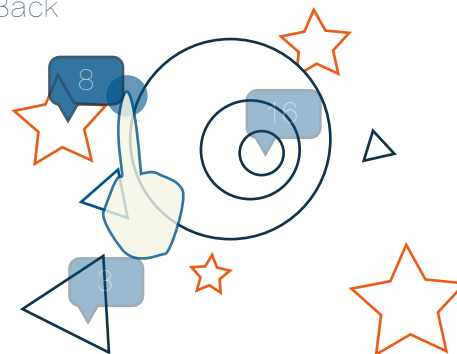
Comments
XXXXXXXXXXXX
XXXXXXXX
ABC

XXXXXXXX

XYZ

XXXXXXXXXXX

Add comment

We decided to apply the form of icon with sidebar to show the comments. This decision was based on my simple comparison between dynamic bullet screen in videos, tags in Instagram, and comment in Acrobat.

Form of comment	Feature
Tag	Hard to read when overlapping
Icon+sidebar	Clear to read
Bullet screen	Hard to read when dynamic/static

14

Iterate until the deadline

User testing

Objective   Evaluate effectiveness

Materials   Printed App prototype, sketches of doodle booth interactive display, blank A2 paper, colourful pens

Tasks   **Doodle booth**: doodle and submit - share doodle to encho ing doodlers - download App

App: interactive with today's doodles (comment, like, check the author) - vote for the next day's topic (create a new topic, vote for a topic) - check personal record (past doodles, conver sation with other users)

Testers   5 international students

Problems   Cannot find the method to comment

Doodle at will or under a topic

> Evaluation of satisfaction needs long-term investigation. Abandoned due to time constraint.

> A follow-up testing showed the problem is derived from the limitation of paper prototype. A digital version performed well.

> Since users tended to ignore the topic on the top, and we did not have the time to investigate further, we cancelled the function of voting.
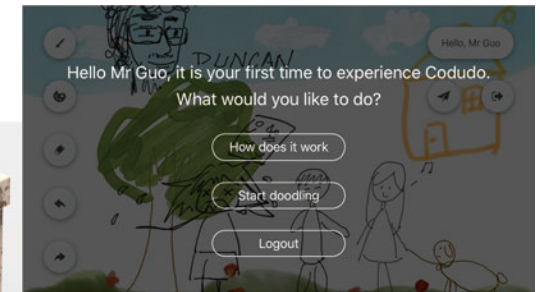
▼ Producing paper prototype
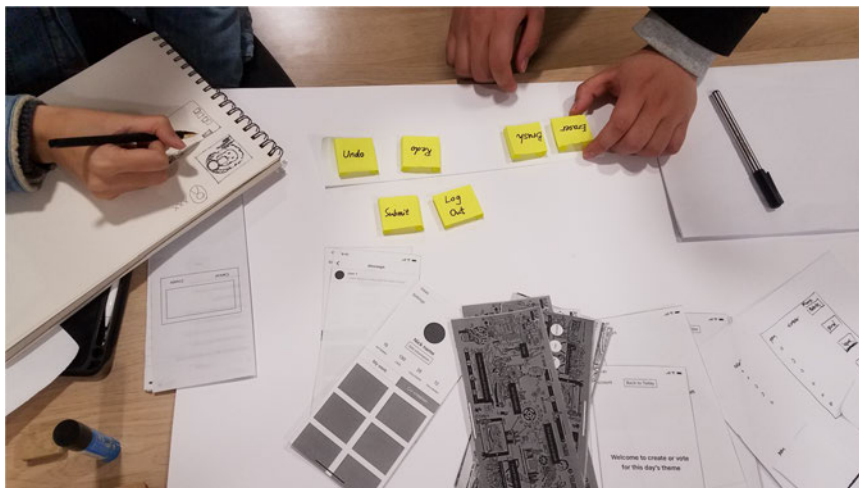
Presentation (produced by Guangpeng)
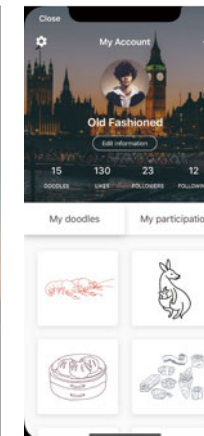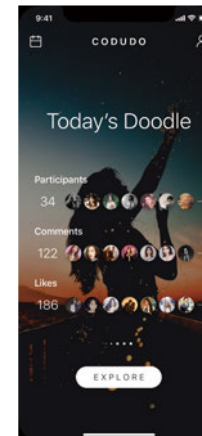

Display screen

Doodle Booth

Home page of Doodle Booth

Comment page of mobile App

Main page and Personal page of mobile App

We adjusted the function and interaction flow of the system based on user testing results. We presented the design in the form of paper and video in the end of the course. I was responsible for the script of a 3-min video (click here to watch), which explains the motivation, function and effects of our system. The video won a merit.

End of Project 2

ICU Dashboard: Integrating a New Design into Workflow

Photo by Hush Naidoo on Unsplash

Project background

This is a project collaborated with University College London Hospital. The Intensive Care Unit (ICU) was going to use a new dashboard so that staff could access information easily, in order to improve the overall performance of ICU. Our group was assigned to refine the prototype of the dashboard from the perspective of clinical targets.

Photo by Martha Dominguez de Gouveia on Unsplash

Type	Prototype refinement
Time	4 weeks, 2019 Spring
Property	Group Project for the course Human Factors for Digital Health
Tools	Realtime board
Skills	Interview, Qualitative data analysis, Sketching
My Role	User researcher and User Experience Designer
My Team	Hollie Bostock, Ziyi Chen, Alastair Cook, Gemela Forman, Ruiqi Kong

Proposed solution

I proposed to combine information in Metrics widgets into the floor plan so that staff could make sense of the metrics in a more intuitive way. Icons with colours and initials are used to make different metrics more identifiable.
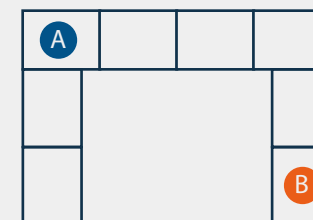
Understanding the problems and the users

Aim of this project

Identify user goals, practises and needs

Critique the existing prototype

Propose future design possibilities

What the current dashboard could do

1. Displays a real-time overview of some unit and clinical data. The dashboard has 16 different metrics of three themes (flow/floor metrics, medication safety metrics, and **clinical target metrics**).

2. Has a drill-down function whereby a user can see this unit-level data and then identify where intervention is needed

3. Automatically collects and displays retrospective data for audit/quality improvement

4. Provides some education/training interventions around the various metrics

Interview

We conducted a **semi-structured interview** with the staff in ICU. Although our focus was clinical targets, we decided to understand users' work from a general perspective first, and guide them to talk more about the clinical targets when evaluating the prototype dashboard. The outline of the interview is as follows:
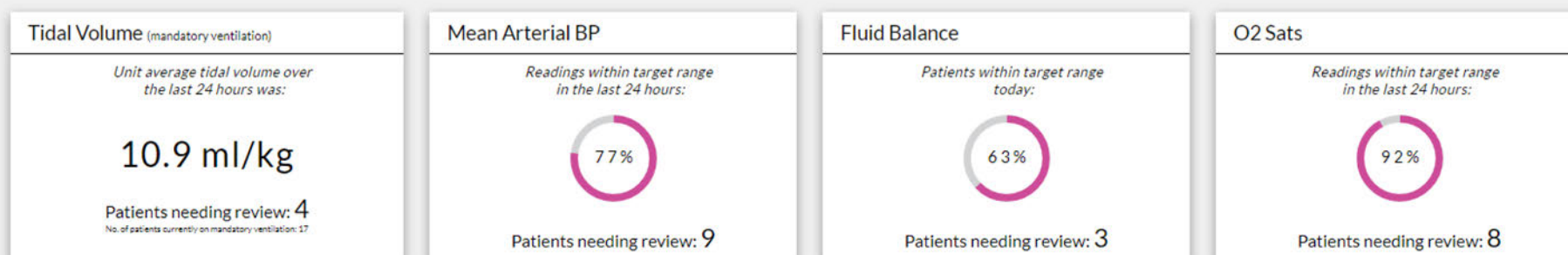
- Introduction

- **Access to data**

- **Fitting data access into your workflow**

- **The prototype dashboard**

Our interviewees were an anaesthetic registrar and a senior nurse. The former ensures the right level of anaesthesia is administered to patients prior to a surgical procedure, and evaluates patients, ensuring no complications arise post medical or surgical process. The senior nurse provides and assumes most of the direct responsibility for the patient.
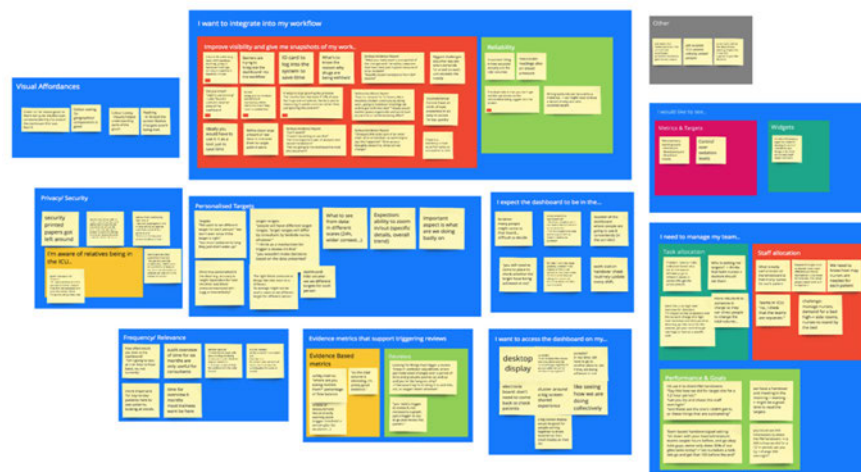
Unit at a glance

Bed Occupancy	Bed Usage	Median time to discharge	ED Admissions
// Current	// Over last 24 hours	// Current	// Over last 24 hours
29/35	43	12 hrs	49 people

Target Metrics

Tidal Volume (mandatory ventilation)	Mean Arterial BP	Fluid Balance	O2 Sats
Unit average tidal volume over the last 24 hours was:	Readings within target range in the last 24 hours:	Patients within target range today:	Readings within target range in the last 24 hours:
10.9 ml/kg	77%	63%	92%
Patients needing review: 4	Patients needing review: 9	Patients needing review: 3	Patients needing review: 8
No. of patients currently on mandatory ventilation: 17			

Emerging themes

After transcription of interview data, we read through the materials to find emerging themes, and used affinity diagram to group the themes that were similar. At least two members analysed the same part of material in order to triangulate the results. We found nine initial themes.

According the frequency of mentioning and the relevance to our target (clinical target), we chose three themes as the main user needs to further consider.

Affinity diagram in Realtime Board ▲

9 initial themes ▼

- Visual affordances

- Privacy / Security

- Frequency / Relevance

- **Personalised targets**

- **Integration into workflow**

   - Improve visibility and give me snapshots of my work

   - Reliability

- Evidence based metrics that support triggering reviews

- Expected elements on the dashboard

   - Metrics & targets

   - Widgets

- Team management

   - Task allocation

   - Staff allocation

   - Performance & goals

- Location of dashboard

How would I integrate it into my workflow?

"You run around for 12 hours, like a headless chicken continuously doing work, going to handover meetings etc and its got to fit into that."

"I'd expect this to be part of an email chain of an email chain or something to say this happened."

How would I get personalised targets?

"We want to set different target for each person."

"So looking at this, can you say 24 hours is not that useful? Let's say you move at six months. "

I need indicators that justify triggering reviews···

"You need it to be triggering to go and review a particular patient."

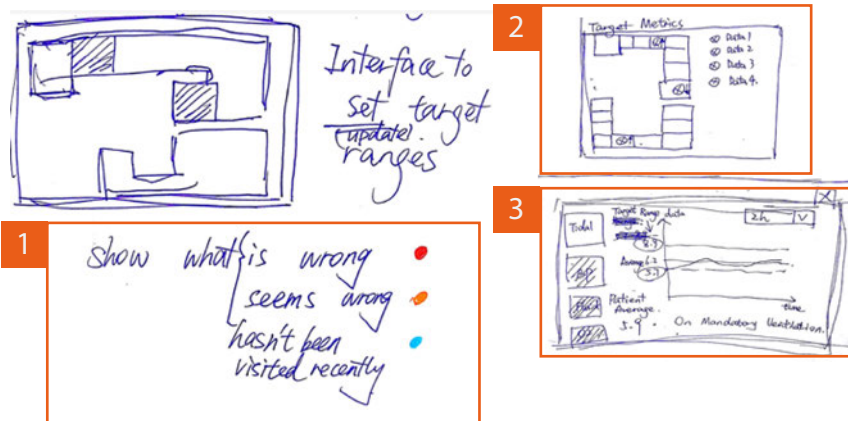"An alarm which wants you to do something about the problem."

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Shaping user needs into four stages

Due to the importance of integrating the dashboard into staff's daily routine, we walked through the work flow and proposed four stages where the information dashboard could function to not only indicate the clinical target, but also improve the ICU performance. The three themes we concluded are touched in more than one stages.
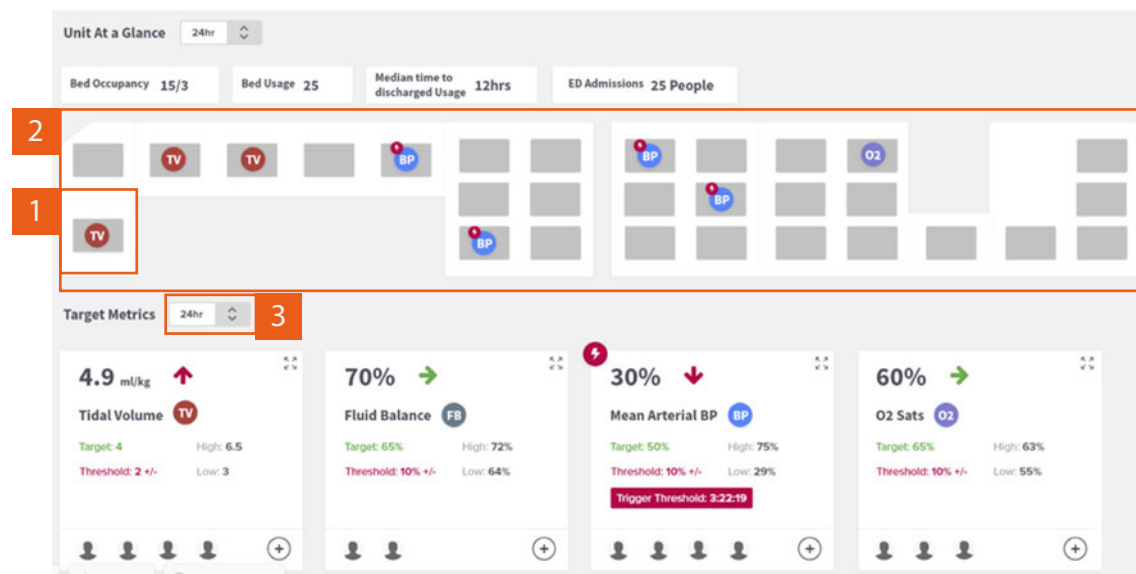
**Workflow integration
Indicators to trigger review**

Problems of existing prototype:
- Low visibility of target and threshold values
- Lack the record of who takes action

Responding

Within threshold
Outside threshold

Workflow integration

Problems of existing prototype:
- Lack access to issues for review
- Lack access to see the ICU performance

Improving

Flagged for review
Performance widget

**Workflow integration
Personalised targets**

Problems of existing prototype:
- Target range is set in backend
- Lack identifiable markers for each metric

Informing

Set target
Maintain target

Learning

Learn in the
whole process

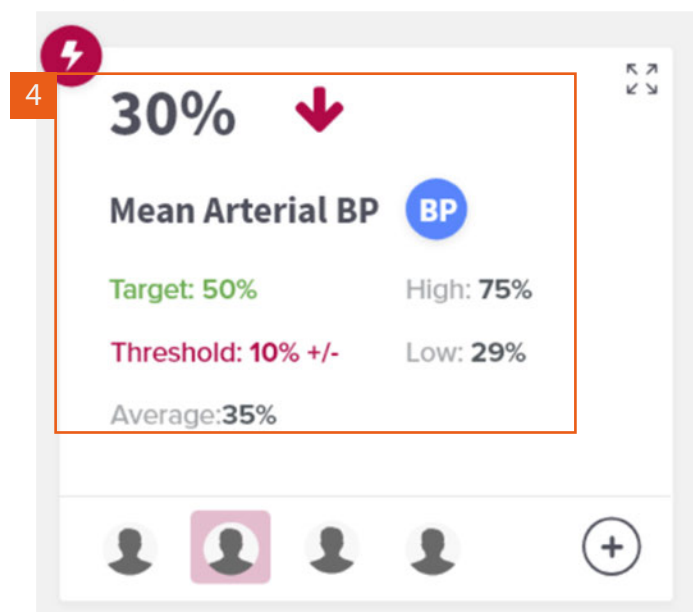# My contribution in design solutions

Sketches

Prototype: an overview

Prototype: metrics widget

1 ### Indicators to trigger review: Icons of metrics

Red, amber, green to indicate the degree of emergency ▶ Use light colours instead of those "dangerous" ones ▶ Add initials of the metrics to understand quickly

2 ### Workflow integration: Combine issues with floor plan

How to trigger staff to check the patients that have some issues? ▶ How to provide a context of the situation at a glance? ▶ Put the icon of metrics on the floor plan

3 ### Other needs: Check data in different scales

4 ### Some compromise: whether to display the average metrics?

On one hand, interviewees said average metric is meaningless. On the other hand, it does provide a context of the overall situation. We decided to keep the average metrics, otherwise the widget becomes blank.

End of Project 3

Oing Clock:
Fight against
Negative Perfectionism

Type	Physical computing and prototyping
Time	July, 2017
Property	Individual work
Tools	Arduino, Java EE
Skills	Prototyping
My Role	Interaction Designer and Developer

Project background

This individual project was inspired by an animation. When I was a freshman, I came across an anime TV series called "The Tatami Galaxy", which describes the irredeemable life of an unnamed third year university student. He views his campus life as wasted time and always dreams of a better self, but he could not escape from the circle of ridiculous behaviours. In the end he runs out of endless Tatami and understands that he can only realise one possibility of his life, moreover, it is meaningless to imagine one more kind of life, as dedicated by the Master Higuchi, another character in the animation.
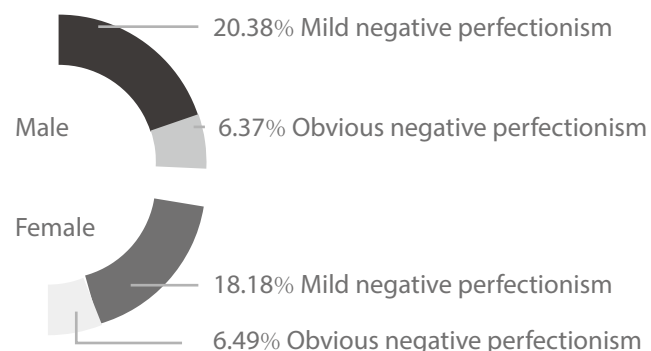
Master Higuchi once sang a song called "Looking for Circle", implying people can never achieve perfection. The seemingly weird song strongly impressed me, as a result, 3 years later, before I finished all the undergraduate courses, I decided to do something to demonstrate the meaning of the song as well as the animation. That was the beginning of the clock.

Proposed solution

This clock was designed to be combined with to-do list, to symbolise our pursuit of perfection. Often we can not finish all the tasks, and the lights on the clock will not make up a circle. Then we start it all over again and again. This piece of work attempts to demonstrate perfection is something that many people seek throughout their lives, and despite the difficulty or even impossibility, they will not give up.

Image from https://en.wikipedia.org/wiki/The_Tatami_Galaxy

The relation between perfectionism and to-do list

I conducted some desk research concerning perfectionism as well as to-do list. When mentioning perfection, I come up with a long queue of everyday to-do list, some of them unfinished. Every time when I tick up an item, a sense of achievement springs, as if that can be a step to perfection. But pursuit of perfection might lead to problems.
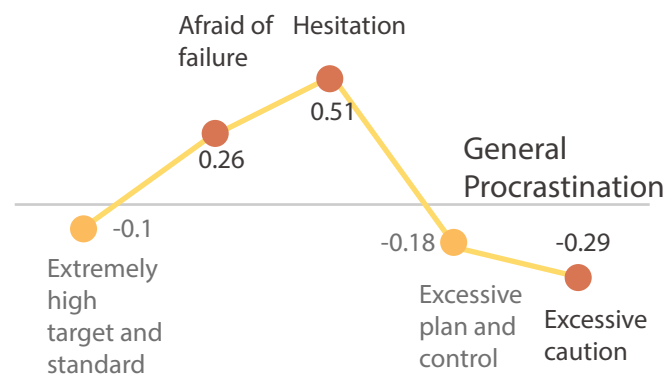
Trap of Perfectionism

Human beings are always on the way of pursuing for perfection. But perfectionism becomes a problem when it causes emotional wear and tear or when it keeps you from succeeding or from being happy. Sometimes people shall accept the "imperfection" and be brave enough to start all over again.

https://www.psychologytoday.com/articles/199905/the-perfect-trap

Male

20.38% Mild negative perfectionism

6.37% Obvious negative perfectionism

Female

18.18% Mild negative perfectionism

6.49% Obvious negative perfectionism

234 college students surveyed
Chinese Journal of Health Psychology 2017,15(4):340-344

Nearly a quarter of the population have a tendency of negative perfectionism of different degrees.

Afraid of failure

Hesitation

0.51

0.26

General Procrastination

-0.1

-0.18

-0.29

Extremely high target and standard

Excessive plan and control

Excessive caution

Correlation Analysis between Negative Perfectionism and General Procrastination of College Students
The Study of Relation between Negative Perfectionism and Procrastination
Yu Liu, Journal of Guizhou Normal University
2014 Jun. Vol. 32 No.3

Negative perfectionism is correlated with procrastination in various factors.
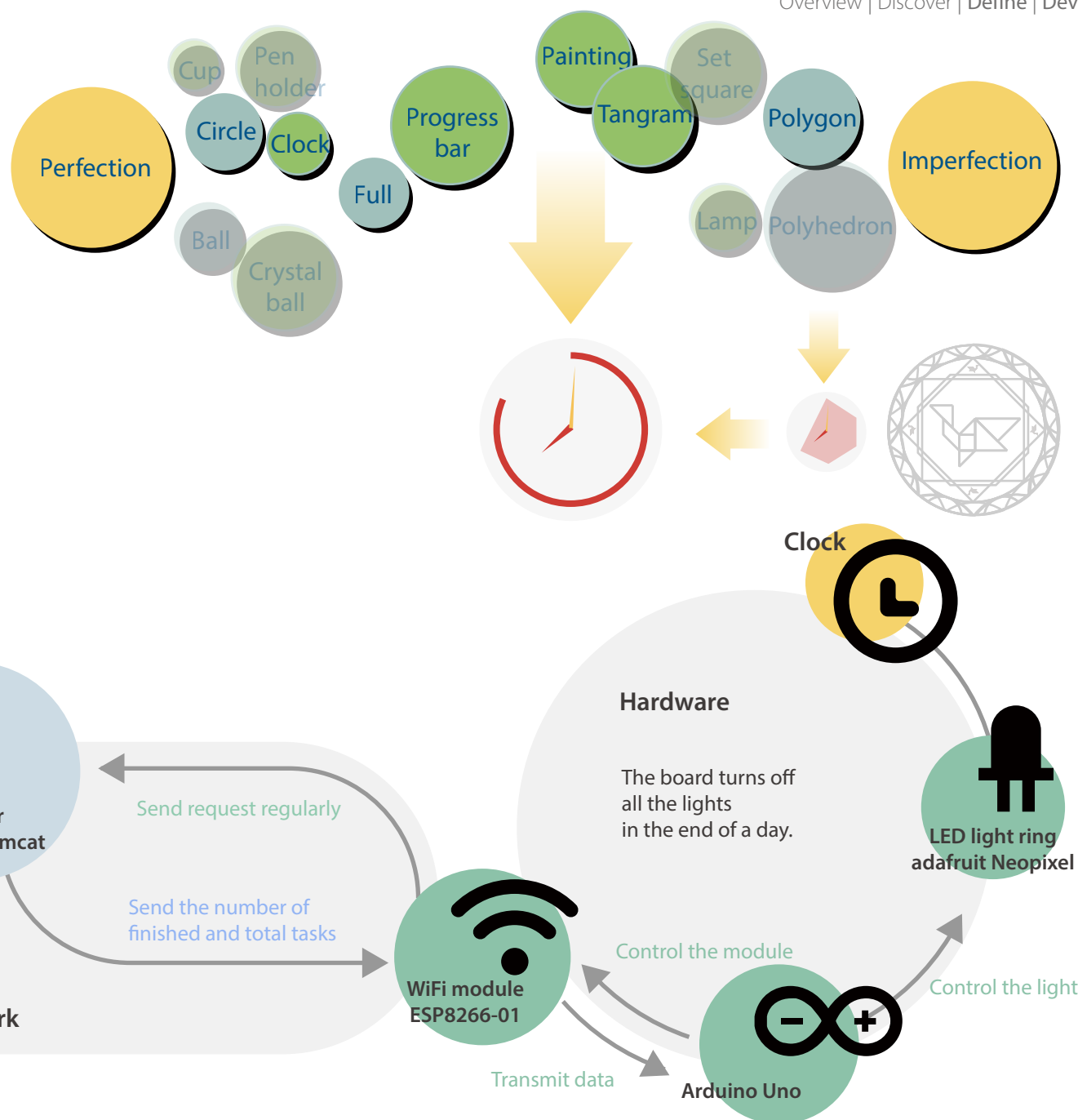
The Power of To-do List

While tasks we haven't done distract us, just making a plan to get them done can free us from anxiety. When we feel that our responsibilities are manageable, the result is that we get to relax and be more present in our moment-to-moment life as it's happening, knowing that we've set a time to take care of what's next.

https://www.theguardian.com/lifeandstyle/2017/may/10/the-psychology-of-the-to-do-list-why-your-brain-loves-ordered-tasks
https://www.sharecare.com/health/healthy-habits/what-benefits-to-do-list
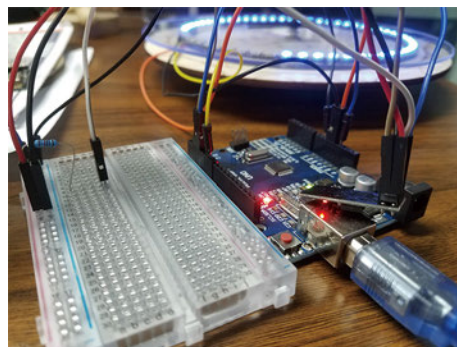
Ideation and system design

Clock stands for the streaming time, and the hour hands seek for circle endlessly. It matches my concept of "eternal pursuit of perfection" well. On the other hand, I choose light ring to be the symbol of finished tasks. When all the items in to-do list are checked, the light will compose a full circle. If some tasks are left unfinished, the circle can not form.

To represent my concept, I built a minimalist system composed by the Web part and the Hardware part. People submit their completion condition to the server via PC or mobile, and when the clock sends a request to the server, the WiFi module in clock can get relevant data, so that control the number of lights on.
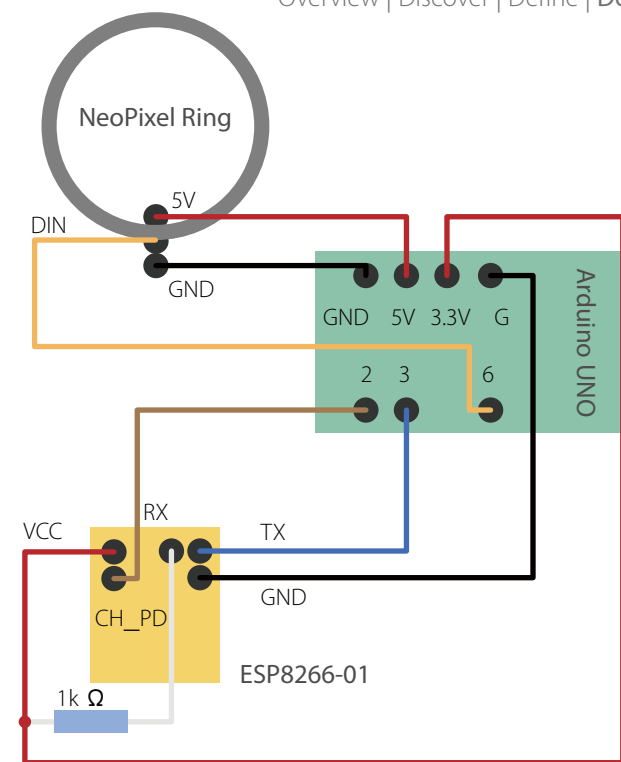
Cup
Pen holder
Circle
Clock
Perfection
Full
Progress bar
Painting
Tangram
Set square
Polygon
Imperfection
Ball
Crystal ball
Lamp
Polyhedron

Clock

Hardware

The board turns off all the lights in the end of a day.

LED light ring
adafruit Neopixel

Submit to-do list

Server
Apache Tomcat

Send request regularly

Update the server data

Send the number of finished and total tasks

Control the module

Website

The website clears its data in the end of a day.

Network

WiFi module
ESP8266-01

Control the light

Transmit data

Arduino Uno

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Building physical prototype

▶ **Welded the four quarters of LED light:**
test the light ring to control the number of lights on.

▶ **Tested the WiFi module:** making it send messages as a http client using AT orders through software serial.

▶ **Deployed a local server:** to run the simple to-do list website and to deal with requests from http clients.

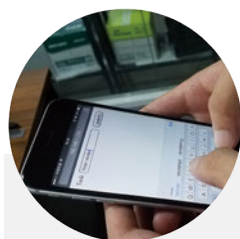▶ **Assembled them all:** testing if the system can run smoothly.

▲ Hardware

NeoPixel Ring

5V
DIN
GND

GND 5V 3.3V G

2 3 6

Arduino UNO

VCC RX TX

CH_PD GND

ESP8266-01

1k Ω

Circuit ▶
diagram

Video prototype

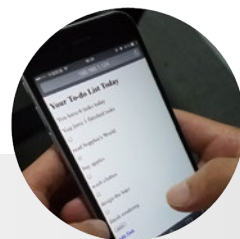🎥 https://vimeo.com/231049210

Add 5 tasks
on the website
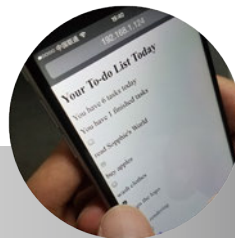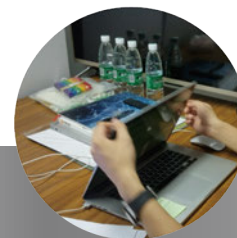
Clock: no light on

Tick 1 task

Part of the lights on

Finish 4 tasks

A day is over

Incomplete

Start all over again
in a brand new day

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Thank you

Ruiqi Kong

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