Mini weather station & clothing suggestions

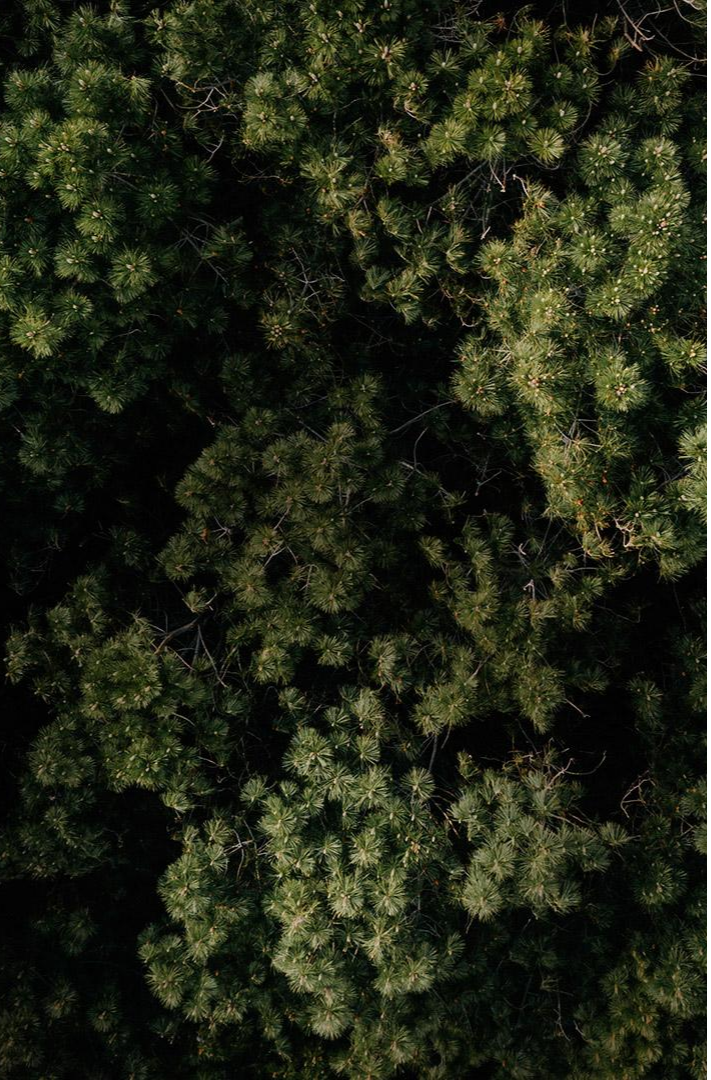


TABLE OF CONTENTS

FEATURE GOALS & VALUE

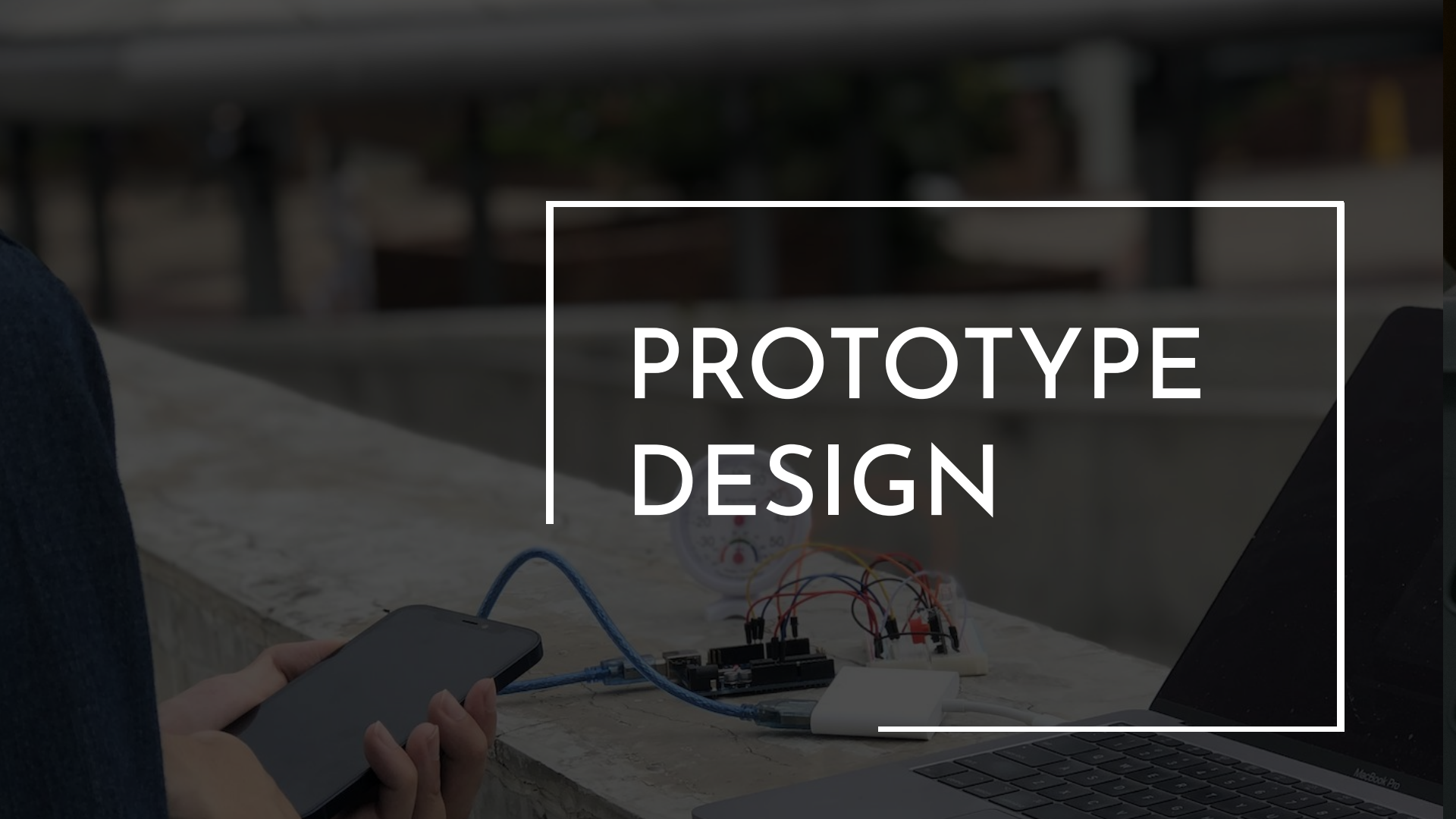
Solving the problems of:

- Do not know what to wear
- Wrong estimation of the temperature of the destination
- Frustrated with the difference between Indoor temperature and outdoor temperature

Feature goals:

Utilizing real-time data to recommend **clothes to wear based on the weather**

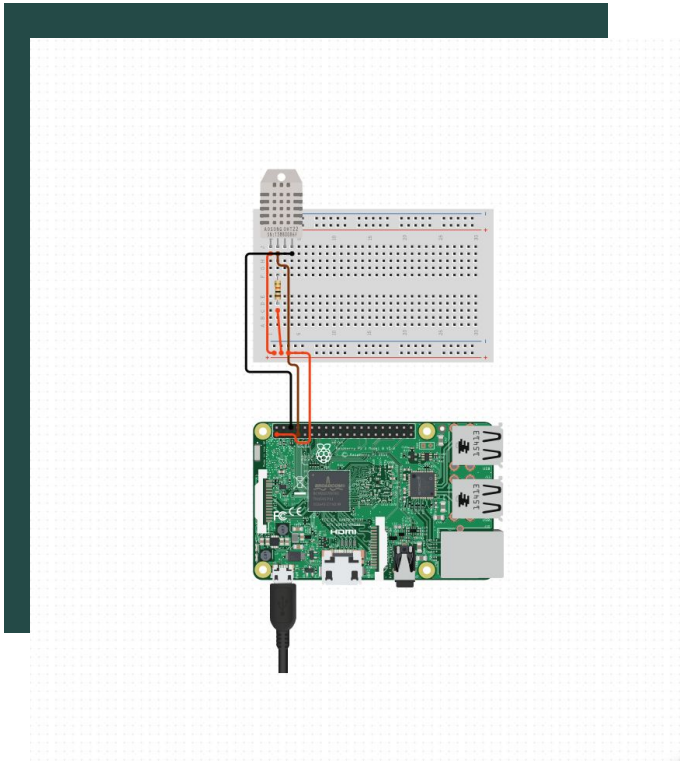
Before going out



PROTOTYPE DESIGN

CIRCUIT DIAGRAM

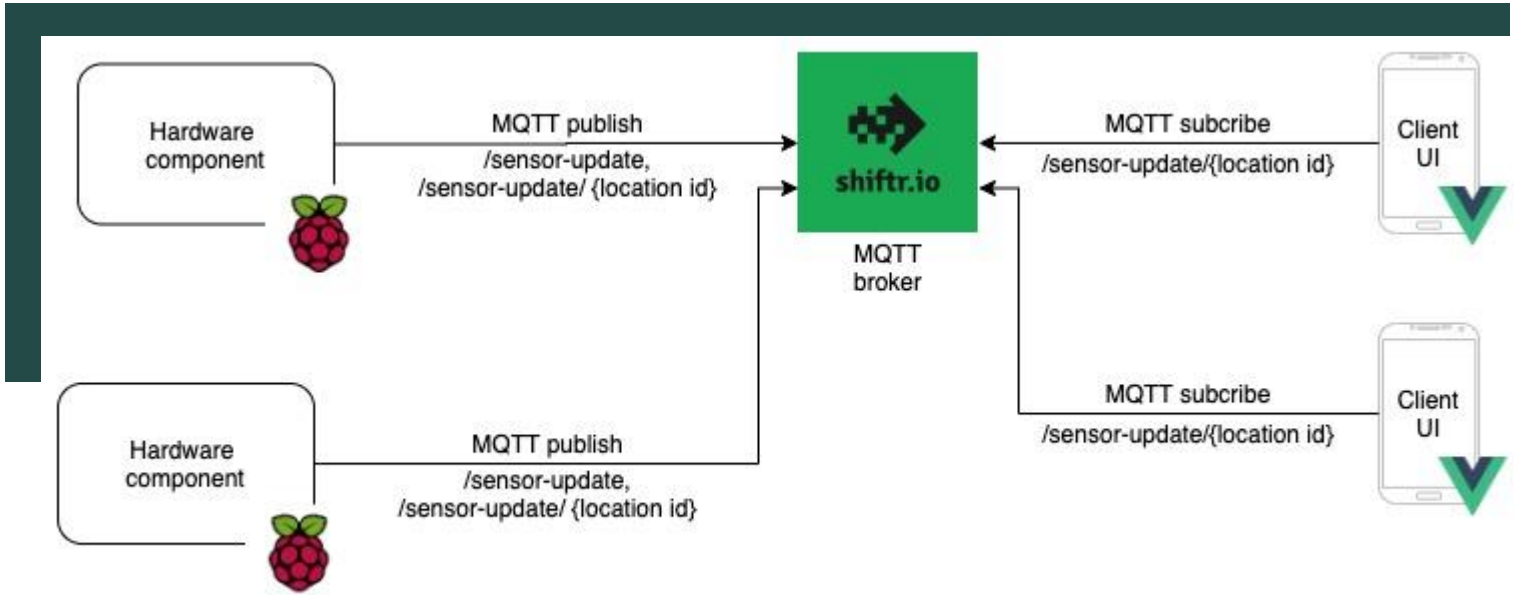
- Using **Raspberry Pi** as control board
- Opt out physical output -> focusing on collecting data only



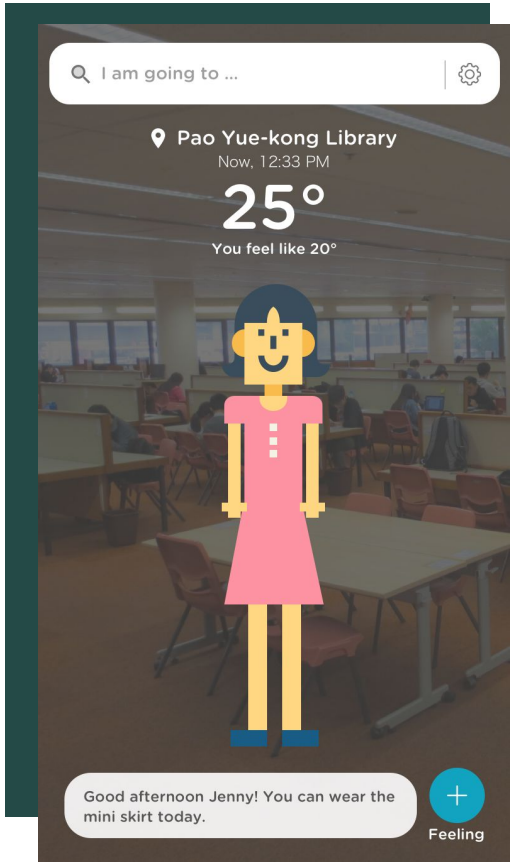
DATA STRUCTURE

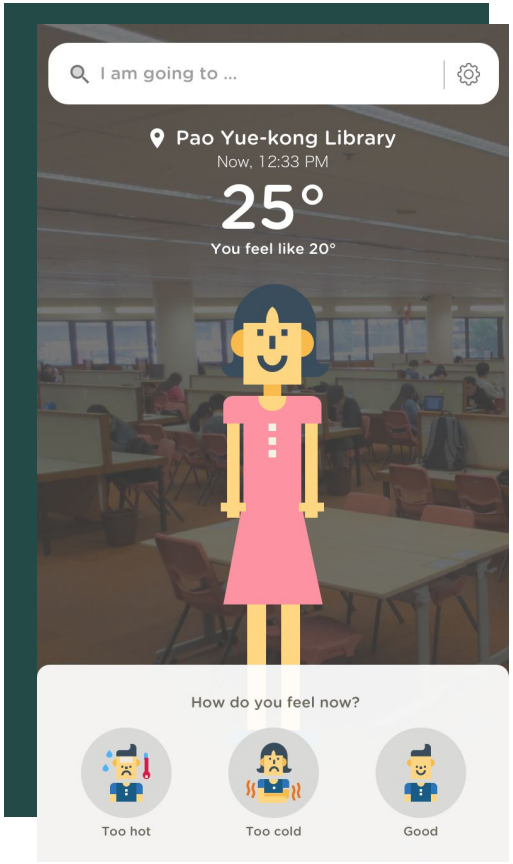
```
interface SensorData {
    // Data directly from sensor
    res: {
        temperature: Float | Number,
        humidity: Float | Number
    },

// Information used for identify different sensors from different locations and for
map rendering use
    deviceMeta:{
        deviceId: String,
        location: {
            lat: Float | Number,
            long: Float | Number,
            name: String
        }
    },
    // To indicate when is the data capture
    timestamp: Number
}
```

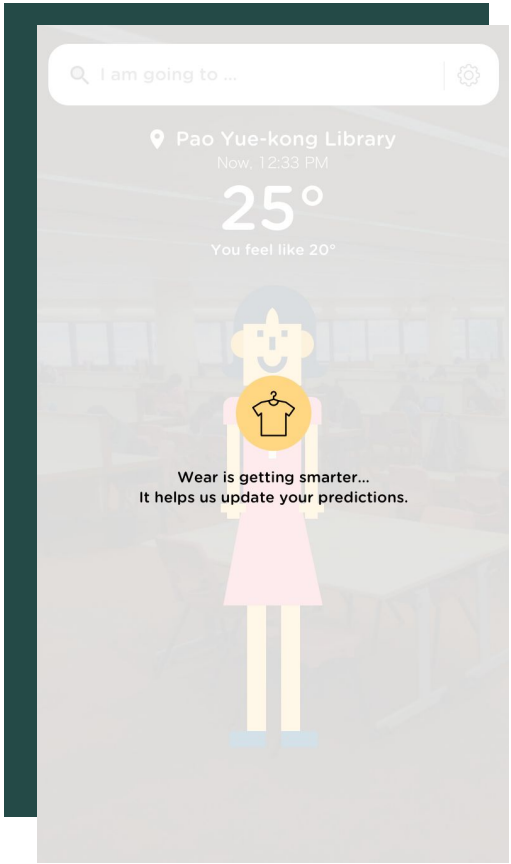
SYSTEM DIAGRAM & DATA FLOW



UI DESIGN


I am going to ...
Pao Yue-kong Library
Now, 12:33 PM
25°
You feel like 20°
Good afternoon Jenny! You can wear the mini skirt today.
Feeling


I am going to ...
Pao Yue-kong Library
Now, 12:33 PM
25°
You feel like 20°
How do you feel now?
Too hot
Too cold
Good


I am going to ...
Pao Yue-kong Library
Now, 12:33 PM
25°
You feel like 20°
Wear is getting smarter...
It helps us update your predictions.

Demo

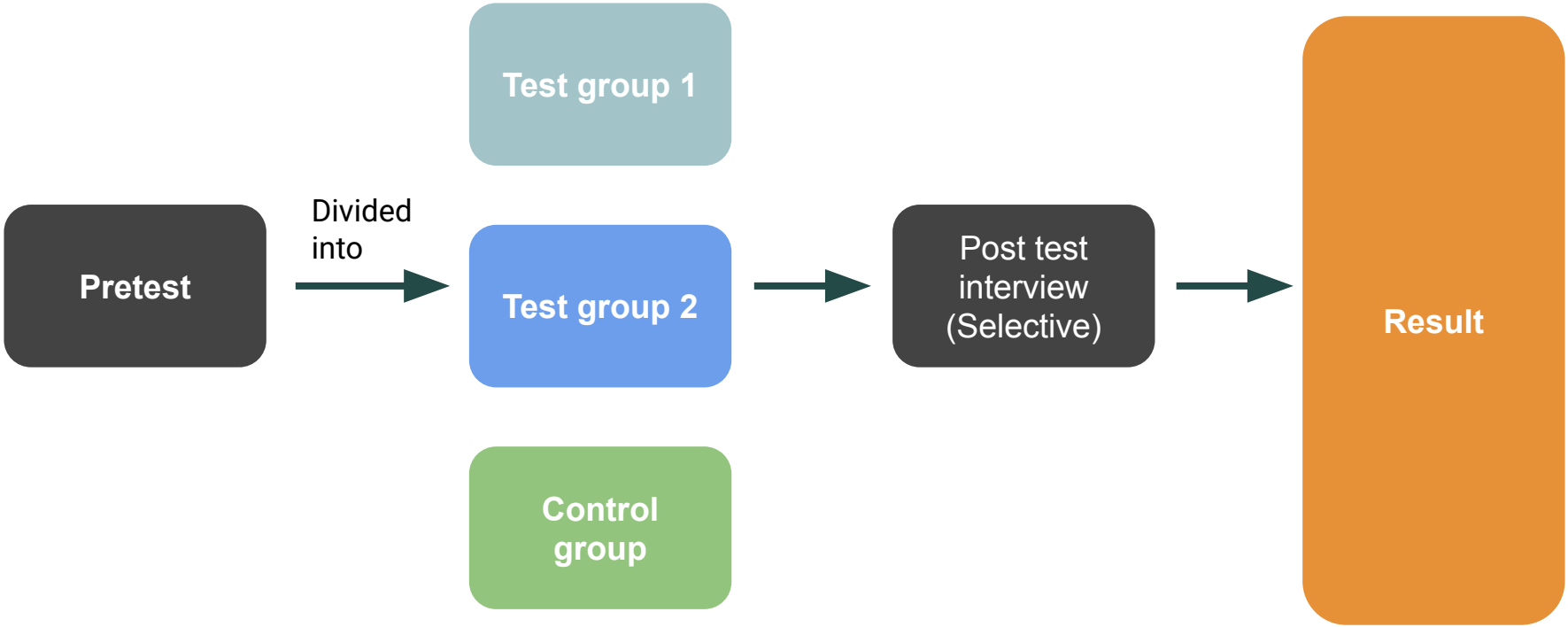
Join us together if
you are interested~

USER TEST DESIGN

USER TEST GOAL

- To identity the persons **who feel hotter or colder than others**
- To explore the **necessity of a outfit suggestion** for certain indoor locations
- To test which one is better for users, **real data temperature or body temperature**
- To test the **usability of the UI**
- Aim to recruit **12-18** participants

HOW TO TEST


Pretest
Divided into
Test group 1
Test group 2
Control group
Post test interview (Selective)
Result

HOW TO TEST

Test group 1

Focus on actual temp

Test group 2

Focus on body temp

Control group

As control to see how participants behave on the scenario

PRE TEST

To Make the entire test data more objective

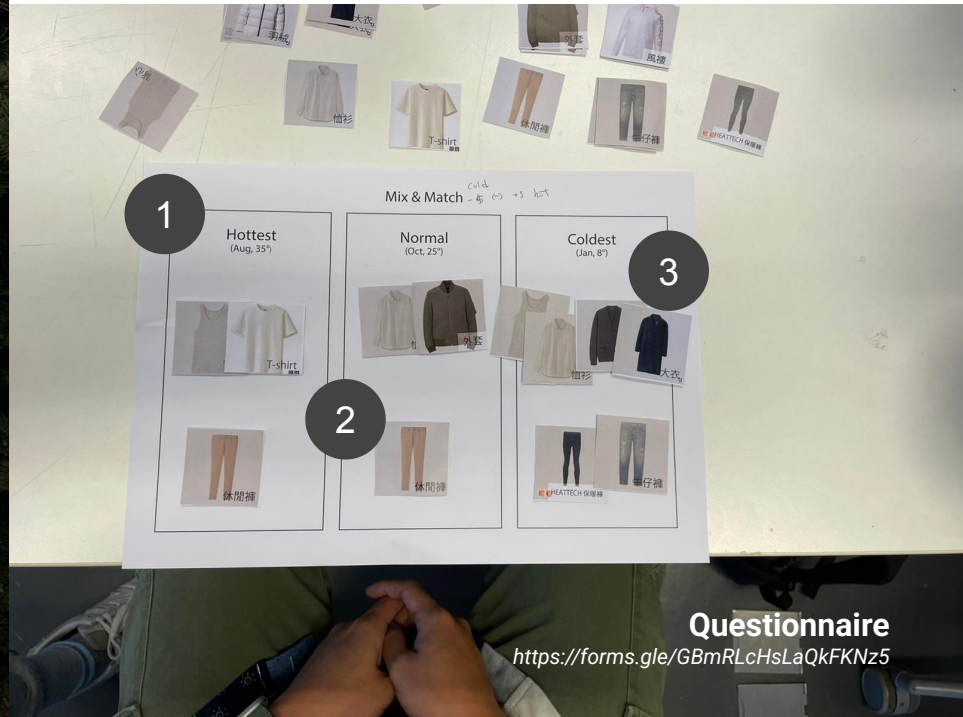
- By categorizing participant into "can't stand the cold", "can't stand the hot" and "normal" type.

- Only showing the basic style of clothing to avoid any fashion reason

What to do:

Users need to match clothes based on different temperature which were mark from the hottest to the coldest.

1. August（ Temperature：35℃）
2. October (Temperature：25℃）
3. January (Temperature：8℃)



Questionnaire

https://forms.gle/GBmRLcHsLaQkFKNz5

PRE TEST RESULT (17 participants)

Participants fill in

Type that we counted for

Name	Type (user fill in)	Hot	Normal	Cold		Real Type
Xinyi	怕冷	3	1		-9	怕冷
Patrick	怕热	0	1		-4	怕热
Janice	怕冷	3	1		-6	常规
Juno	怕冷	4	2		-11	怕冷
Cher	常规	7	0		-6	怕热
姜惠寅	常规	3	0		-10	怕冷
Liz	怕冷	0	0		-4	怕冷
kate	怕冷	7	1		-5	怕热
Xiaoge	怕热	3	0		-6	常规
Melvin	怕冷	3	3		-5	怕冷
Bank	怕冷	5	0		-1	怕热
77	怕冷	7	0		-9	怕冷又怕热
Sue	怕冷又怕热	3	3		-9	怕冷
?	常规	3	0		-7	怕冷
Una	常规	0	1		-11	怕冷
JJ	怕冷	3	1		-9	怕冷
Jun		4	0		-13	怕冷
	average	3.411764706	0.8235294118		-7.3529 41176	

Based on their clothing sections*,
It can divided participants into 3 types:

1. "can't stand the cold", (4)

2. "can't stand the hot" (11)

3. "normal" type (2)

Interesting findings:
Difference between “participants fill in type” and “type that we counted for”

*Counting the average of each temperature session and reviewing each participant as what type of people.

A/B TEST

Sample users

	Can‘t stand the cold	Can’t stand the hot
Real data first	Xinyi (group 1)	Patrick (group 1)
Real data first	Sue (group 1)	Cher (group 1)
Body temperature	JJ (group 2)	kate (group 2)
Body temperature	Jun (group 2)	77 (group 2)

No data
Xiaoge
Una

Test flow

- Choose the outfit based on given scenario
- Provide the data
- Update the outfit or not
- A short interview

Test questions

Q1. User update his/her outfit after we presented the data/UI.
Q2. User can understand on the provided data and react to it accordingly
Q3. User are able to associate the presented data/Ui with the scenario’s destination.
Q4. User can understand the avatar’s outfit is a suggestion.

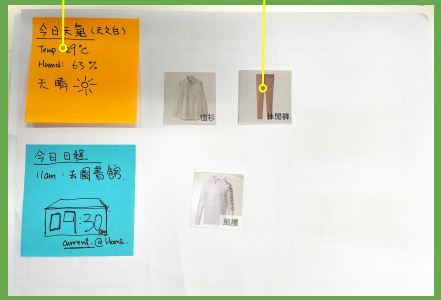
TEST PROCESS

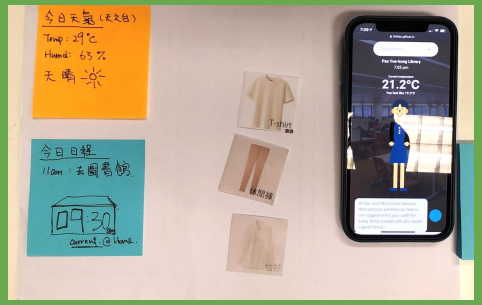
The given scenario

Choose what to wear

Given data

Change outfit or not





TEST RESULTS

- **Most users(¾) changed their outfit** ather seeing the data.
- Half of users **understood all the provided** data and react it accordingly.
- **Most users (¾) were able to associate** the presented data with scenario's destination.
- **Most users(⅝) understood the avatar's outfit** is a suggestion.
- For users do not change their outfit, most of them prepare suitable outfit based on their own experience.
- Some users **did not notice suggested outfit** because **they do not have the same clothes**
- Some users think the data of **body temperature is not trustworthy**

	Test 1 (real data)				Test2 (body temperature)			
	Fear Hot		Fear Cold		Fear Hot		Fear Cold	
Q1.	Y	N	N	Y	Y	Y	Y	Y
Q2.	N	Y	Y	N	N	N	Y	Y
Q3.	N	Y	Y	Y	Y	N	Y	Y
Q4.	N	Y	N	Y	Y	N	Y	Y

INSIGHT S

The App is functional for users

Most of them change outfit after seeing data

UI

UI for avatar should be improved

- Avatar should be customisable
- To provide personal wardrobe
- Add more clothing suggestions descriptions e.g. user should bring or wear? What type of clothes?

Body temperature could be shown as graphic

- It is an abstract element so it's difficult to show exact figures
- Graphic is more noticeable

Feedback window could be pushed when users stay inside for a while

Need more time to get environment temperature