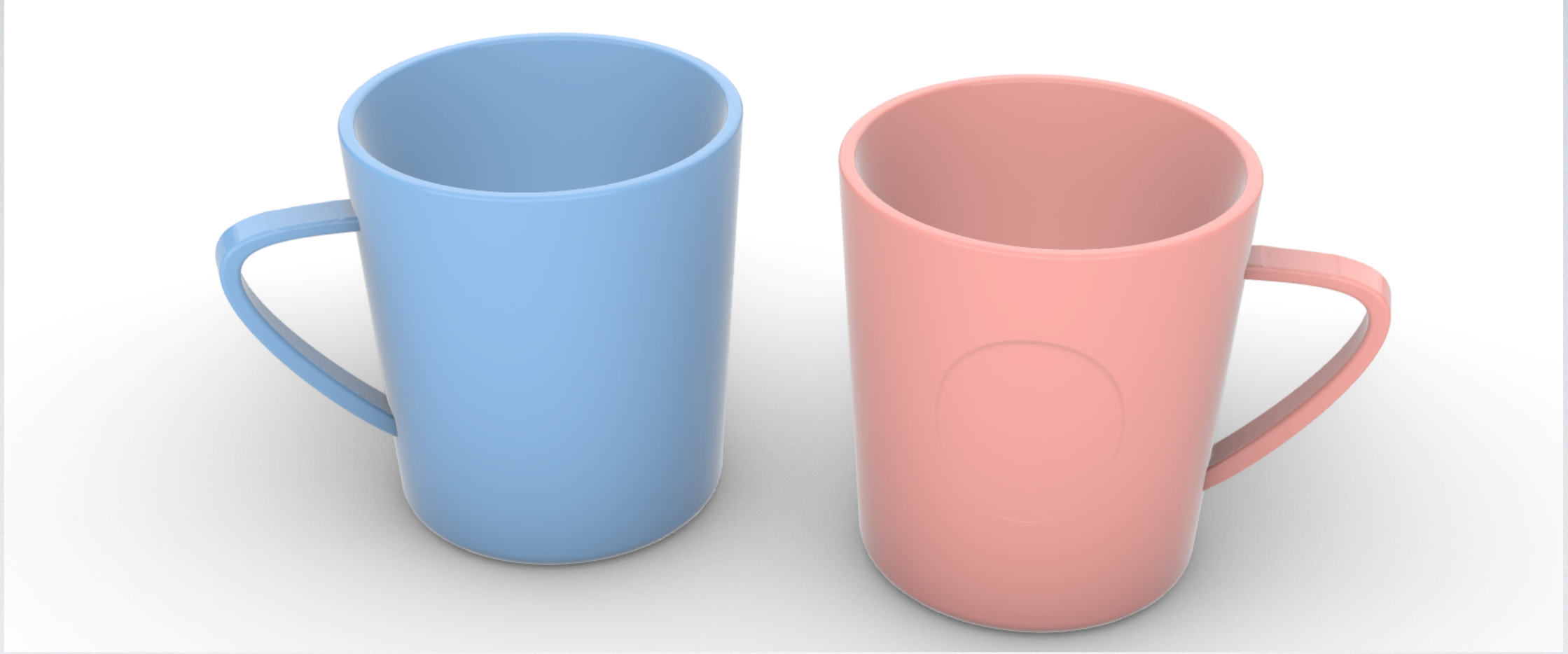


PERSONAL REMOTE COMMUNICATION

— Lina Zhang

THE BACKGROUND OF TOPICS

The high degree of population mobility

U.S. —> 35.5 million people move away, 10 million~16 million colleges students

China—> Spring Festival travel season: Railway—388 million people; Civil aviation—73 million people

https://www.gvm.com.tw/article/55883

THE BACKGROUND OF TOPICS

The Current Situation of Remote Communication Development

The Remote Communication

Remote Cooperation

Personal Remote communication

Emotion

THE STAKEHOLDER

Chinese International Students with their families

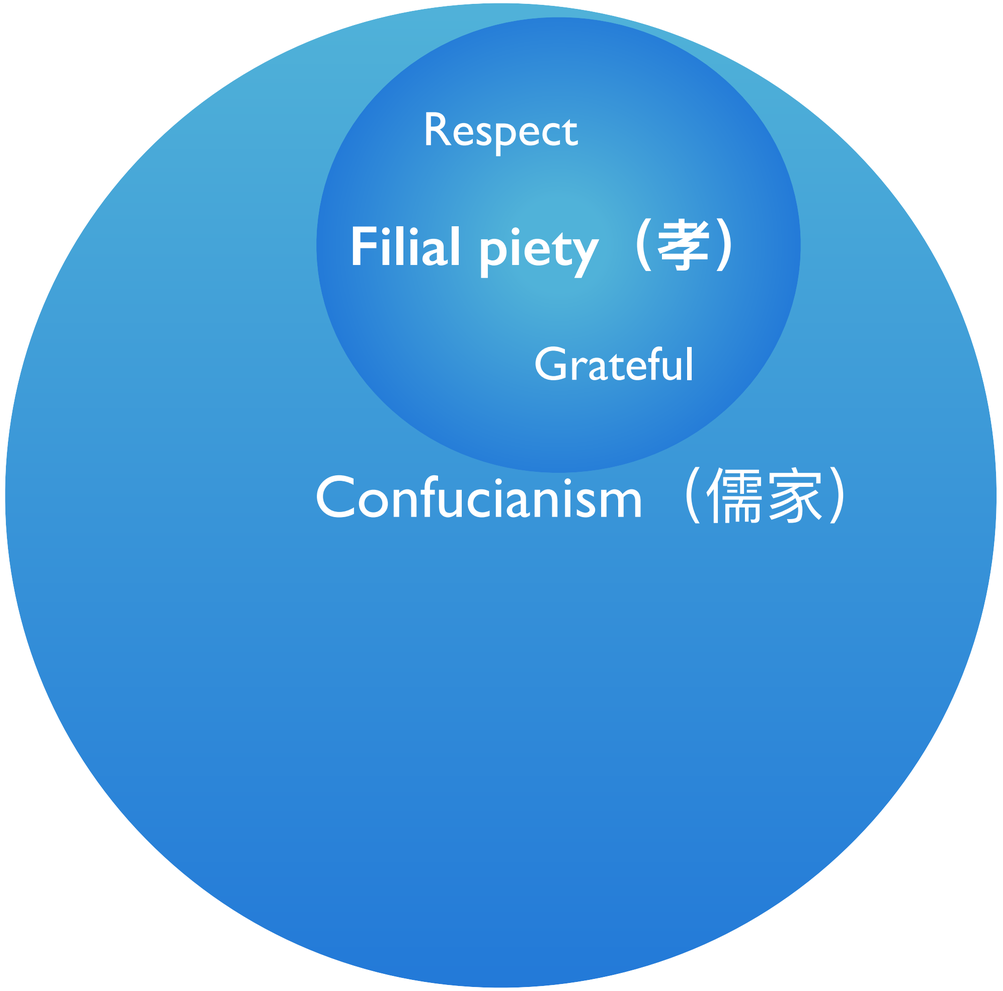
https://blog.hutong-school.com/the-complicated-chinese-family-tree/

LITERATURE REVIEW

1. The emotion expression pattern in China

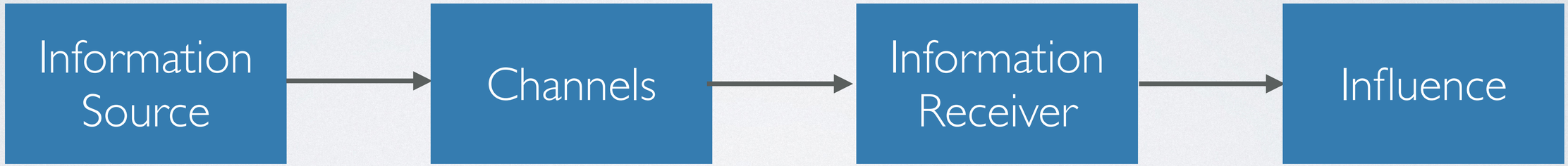
Grateful（感恩）—Nostalgia

Respect（尊敬）—Dignity



LITERATURE REVIEW

2. Communication study



Channel—verbal and nonverbal (body movements, scents, facial expression, temperaure)

LITERATURE REVIEW

3. Remote communication research in HCI

Physical agent

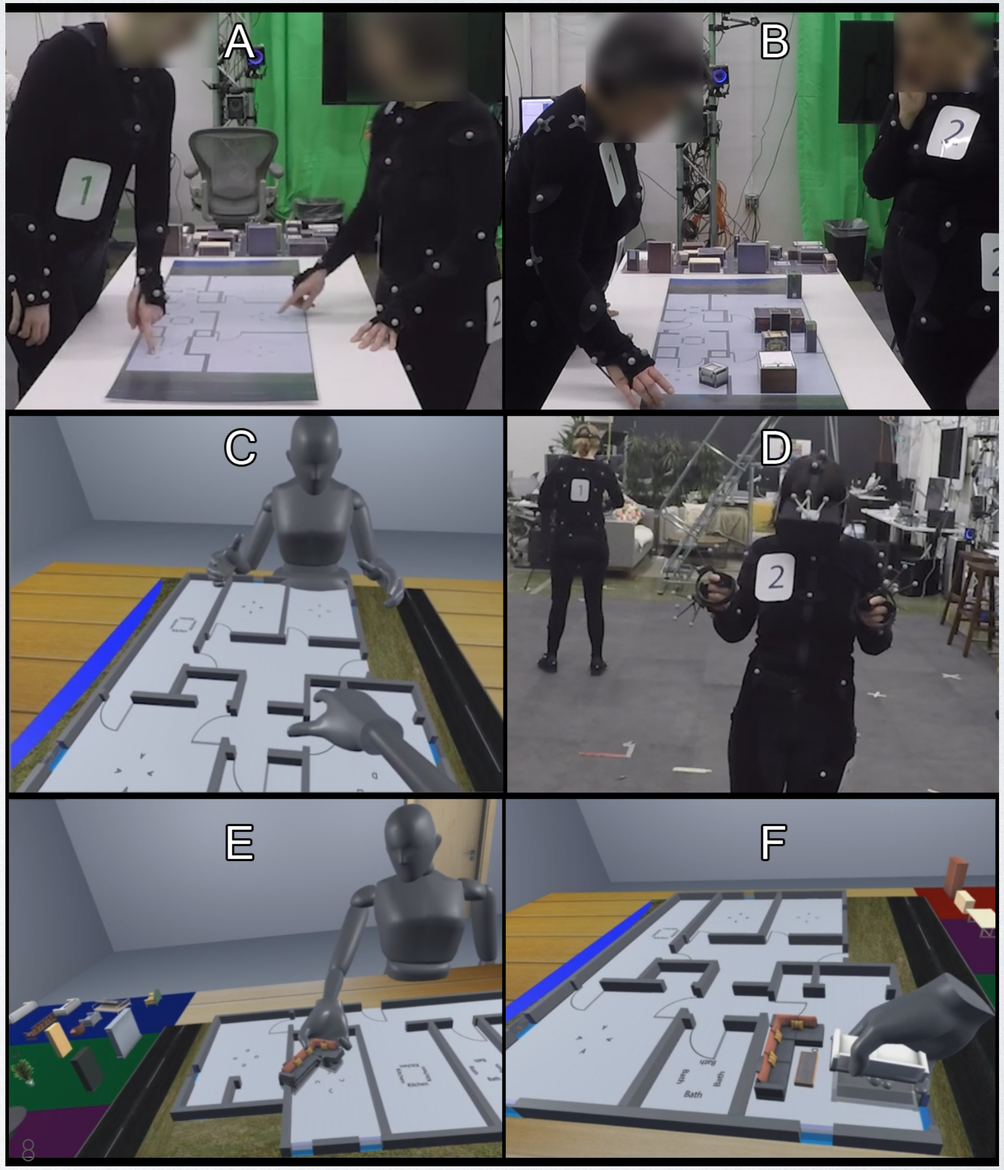
Adalgeirsson, S. O., & Breazeal, C. (2010, March). MeBot: A robotic platform for socially embodied telepresence. In *2010 5th ACM/IEEE International Conference on Human-Robot Interaction (HRI)* (pp. 15-22). IEEE.

Nakanishi, H., Tanaka, K., & Wada, Y. (2014, April). Remote handshaking: touch enhances video-mediated social telepresence. In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems* (pp. 2143-2152).

LITERATURE REVIEW

2. Remote communication research in HCI

VR/AR : shared time and space



Smith, H. J., & Neff, M. (2018, April). Communication behavior in embodied virtual reality. In *Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems* (pp. 1-12).

LITERATURE REVIEW

3. Remote communication research in HCI

Design some nature interaction in the view of

Ethnographic Research

Tollmar, K., & Persson, J. (2002, October). Understanding remote presence. In *Proceedings of the second Nordic conference on Human-computer interaction* (pp. 41-50).

USER RESEARCH

Study topics

Present VS Past

Daily life when live with parents	**Communication habits with families now**
• Do users and their parents often express emotions or feelings with each other? How do they express these emotions? • What is the daily routine between you and your parents? • What kind of emotions users would like most to share with their families? And under which circumstances?	• What applications do users usually use when they communicate with their families? • Which kinds of ways do users use most? Message, Voice, Video or others? Why this way? • How long will it take if you call your parents every time?

USER RESEARCH

Findings

1. Non-verbal communication is important in daily life

   Case1—hair scrunchies

2. The Companionship

   Case1—spend time without talking

   Case2—eat dinner together

https://imall.com/product/Flower-Print-Hair-Scrunchies-Women-Girls-Elastic-Crunchy-Ties-Ponytail-Holder-Rubber-Bands-Scrunchie-Accessories/Apparel-Headwear/aliexpress.com/4000324361499/568-36702027/en

IDEATION & PROTOTYPING

Design principles:

1. Including non-verbal communication

2. Including daily routine elements

3. Usability—easy to understand and use

IDEATION & PROTOTYPING

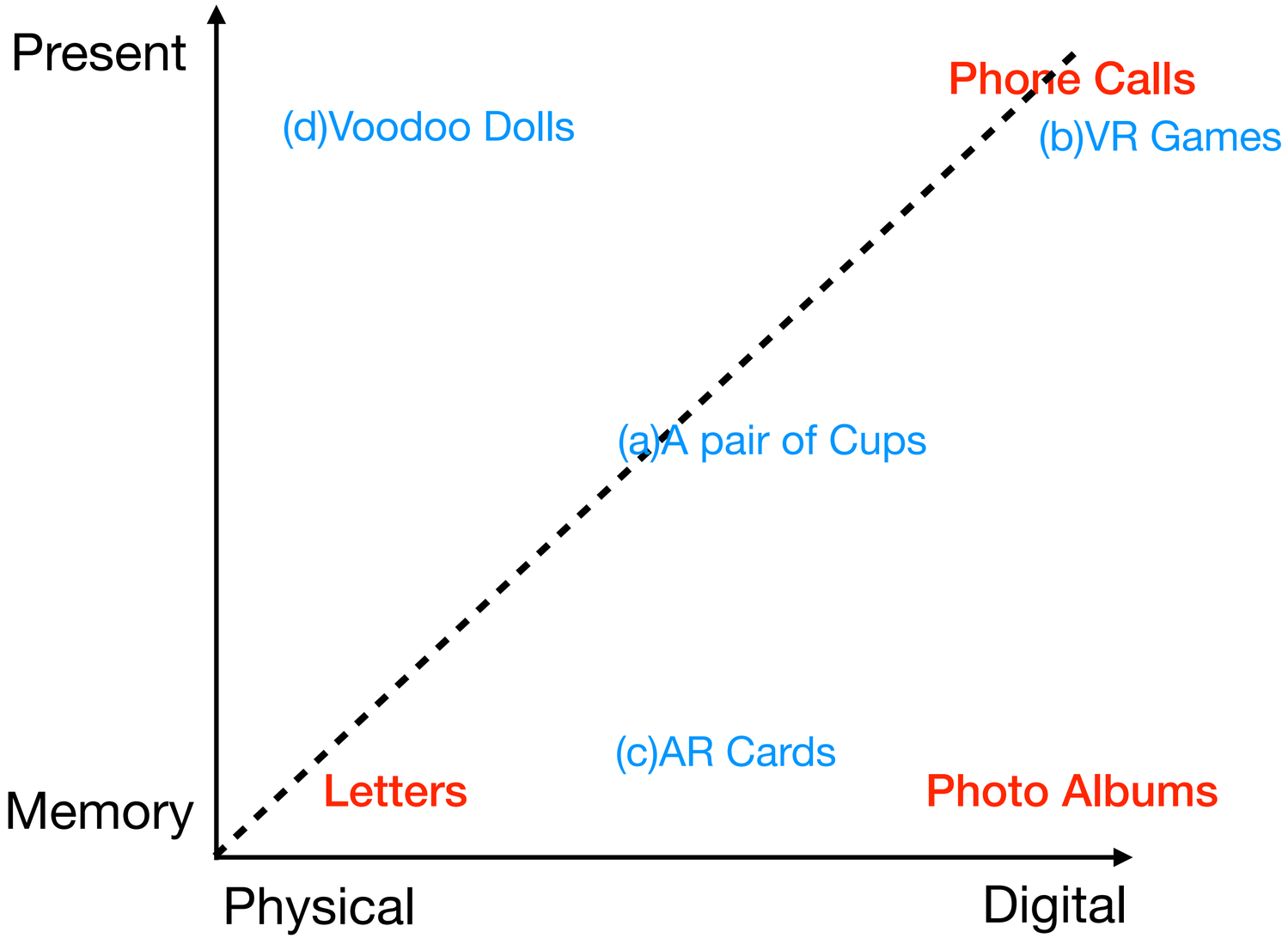
Four ideas:

(a) A pair of cups

(b) VR Games

(c) AR Cards

(d) Voodoo Dolls



IDEATION & PROTOTYPING

	A pair of cups	VR Games	AR Cards	Voodoo Dolls
Timeliness and communication channel	It is not a instant communication.Especially the presence of a status, which can last one minute or two hours.	It is an instant interaction, the communication happens in the form of playing game together; It is totally digital communication.	It is a logging demand. Communication builds up via a memory; It combines physical card and digital video	It closes to an instant communication***
Verbal communication in the phone	Interaction is related to sender's behavior and doesn't need to talk	Talk in the shared Virtual space, it mainly related to the Game contents	No conversation. The message left in the form of handwriting	The interaction is the signal of users' emotion
Overlap of daily routine elements in the past	Parents remind children drink water every day, the cup is a carrier of this action	Family members sat together in a fixed time every day	Sometimes users write letters and postcard to people in the distance	Users expressed their feelings by body movement. For example, children rub parents' arms or parents hug children
Usability	No matter stay at home or live alone, users own a private cup and use it everyday	Players need a set of VR device and learn how to use VR rightly; Family members need to have a shared game	Users need to use an App to add an video to a fixed image; Users should send postcard internationally	Users need to use smartphone along with dolls. The APP in the smartphone will control the doll remotely
Feedback	No feedback mechanism	Feedback is similar to video game, players also can have direct feedback by talking with each other	No feedback mechanism	No feedback needed
Technology	Internet of Things(IOT), Physical computing	Virtual Reality	Augmented Reality	Internet of Things(IOT), Physical computing

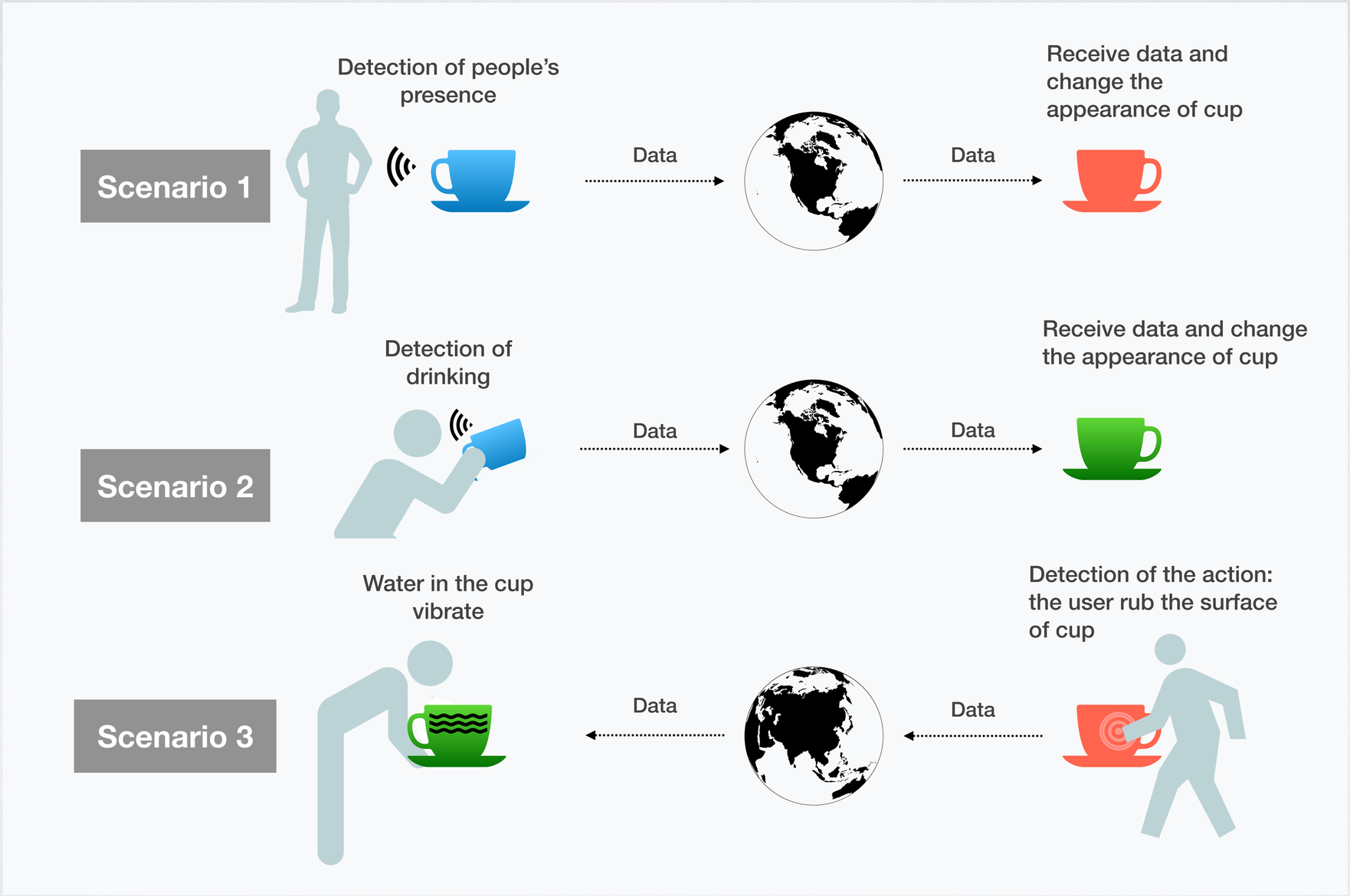
IDEATION & PROTOTYPING

Final idea A pair of cups

Water—Keep body healthy

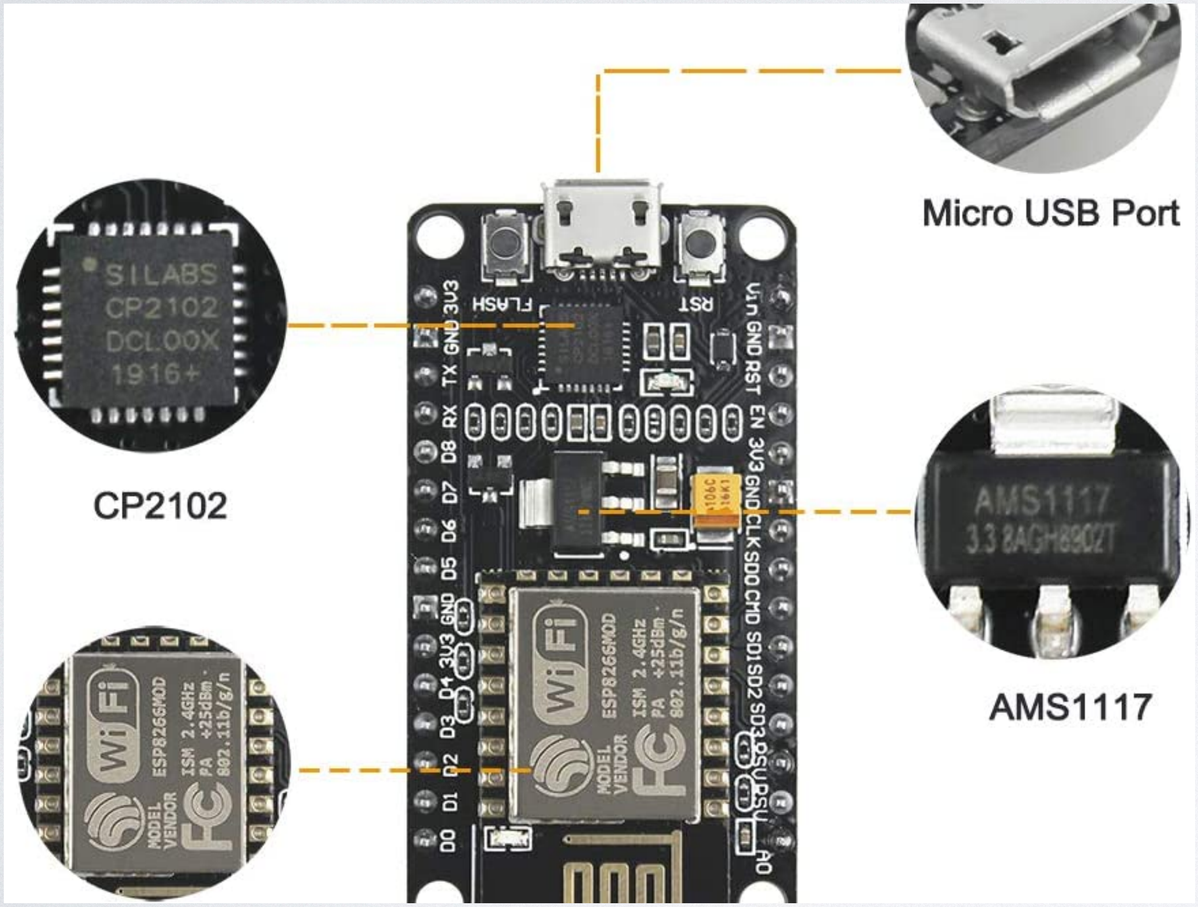
A Cup—A private item, used everyday

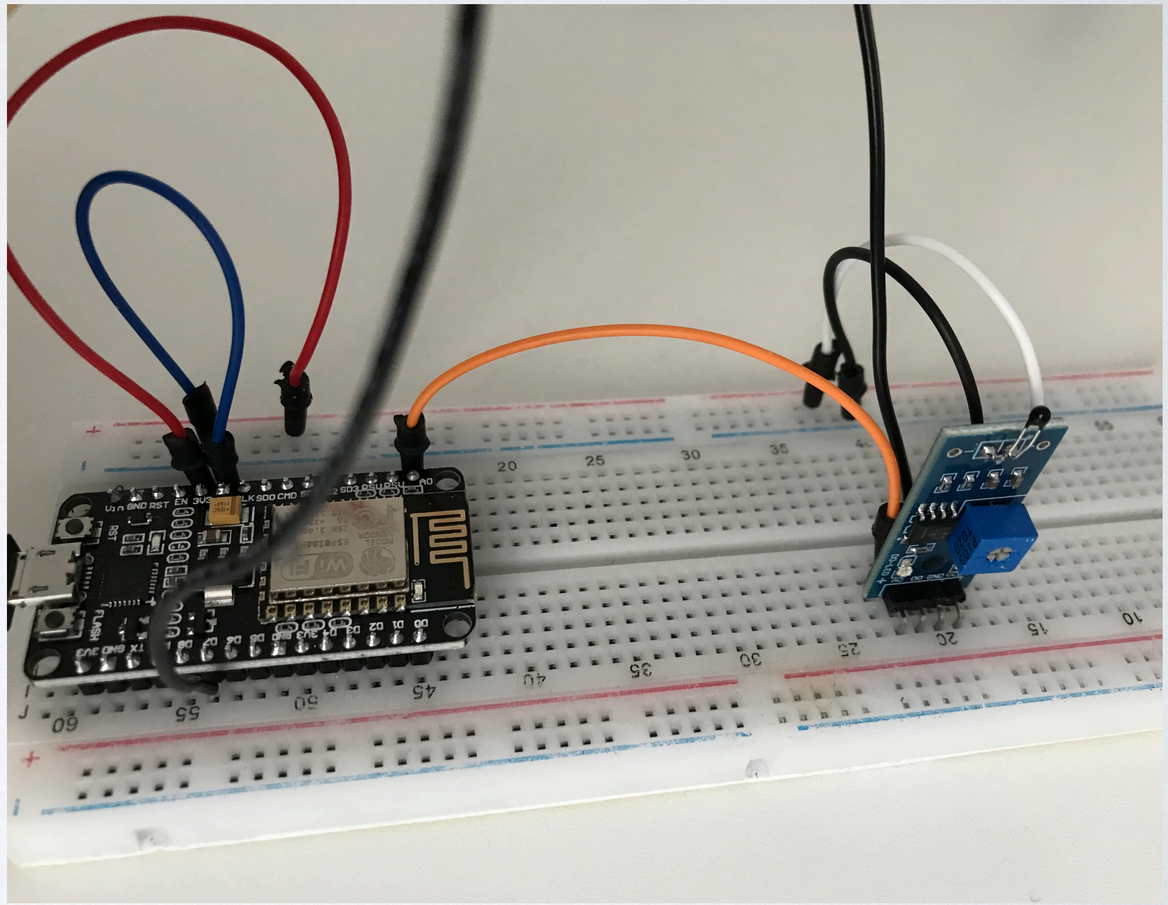
PROTOTYPING



PROTOTYPING

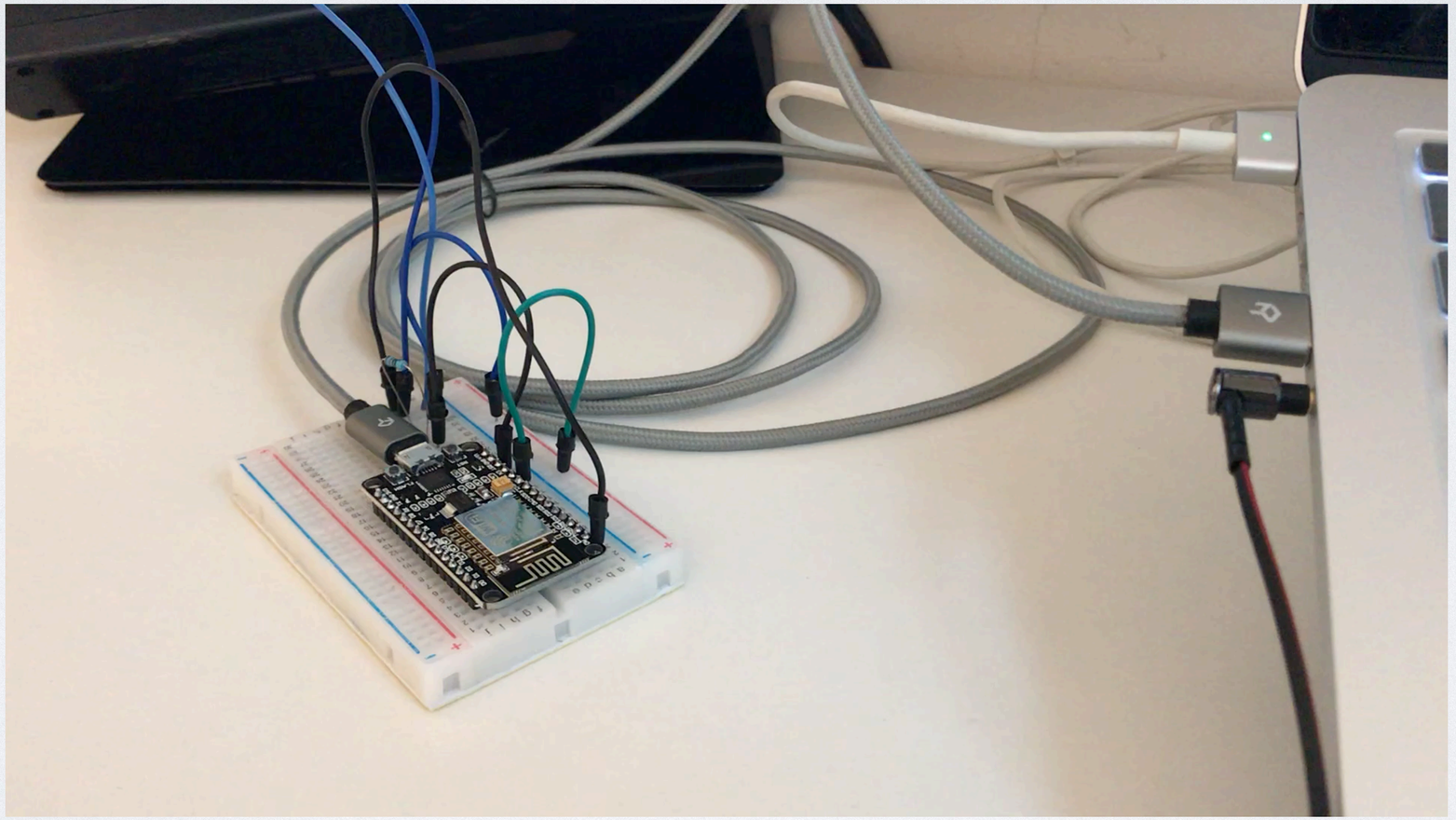
1. Sensors and the Circuits





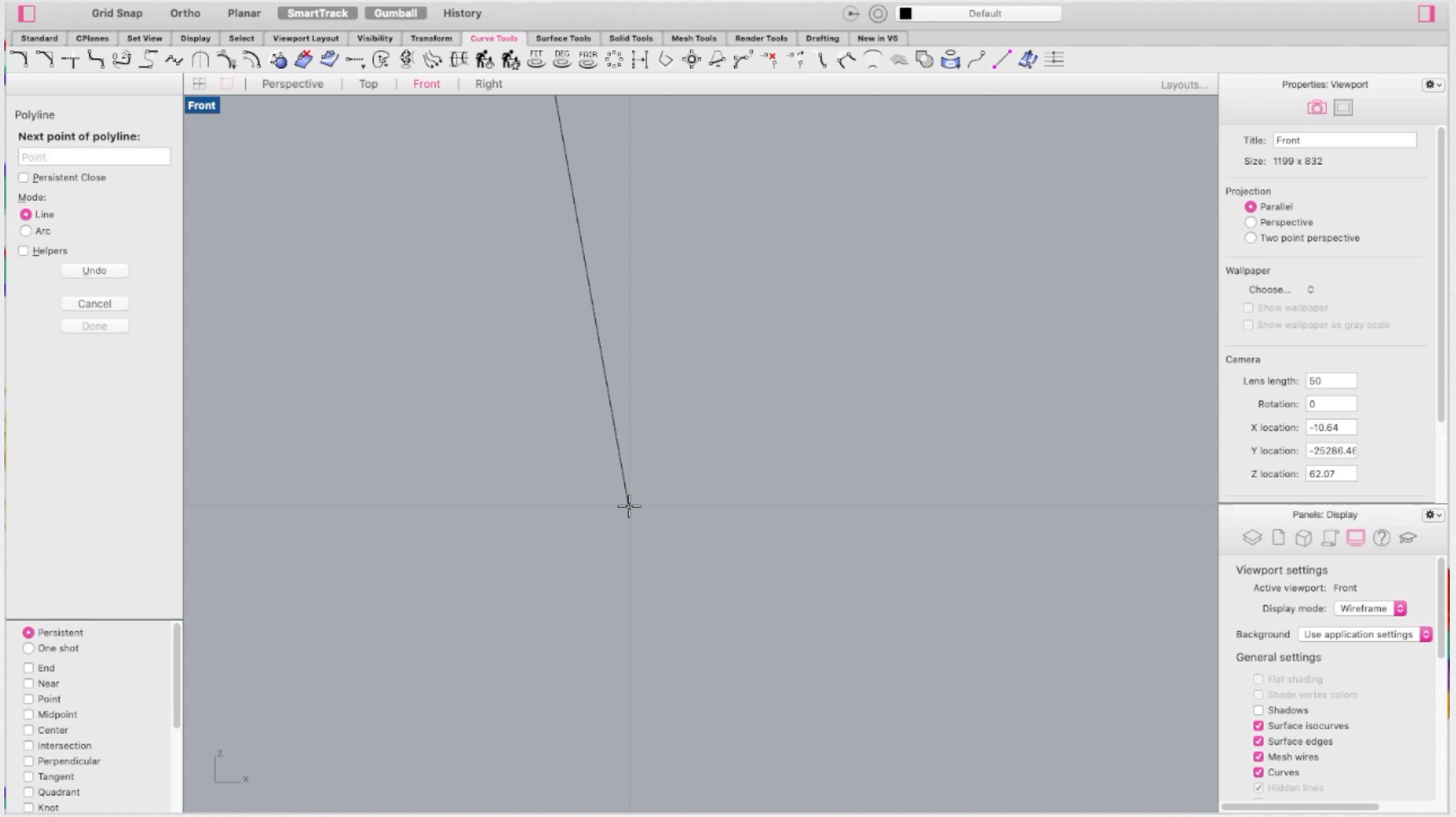
PROTOTYPING

2. Connection via the Cloud — Google Firebase



PROTOTYPING

3. The 3D model of the new cup



PROTOTYPING

3. The 3D model of the new cup

USER TEST

The research method:

Think out loud + record video

Two groups of users:

People who is working or studying VS People who is in a leisure time(like watch videos)

Thank you!