

First choice:

AI health assistant: An integrated system for medical/health reminds

(mobile system: PDA, mobile phone etc.)

The system is integrated with email, short messages, (even telephone) as well as medical systems. It can document useful conversations between the patients and physician. It then retrieves (through mining technology) any medical or medication or exercise information from the documentation and provides reminding at specific time.

For instance, the consultation of using pain killers should be documented and the system can make sure instructions to be delivered at specific time.

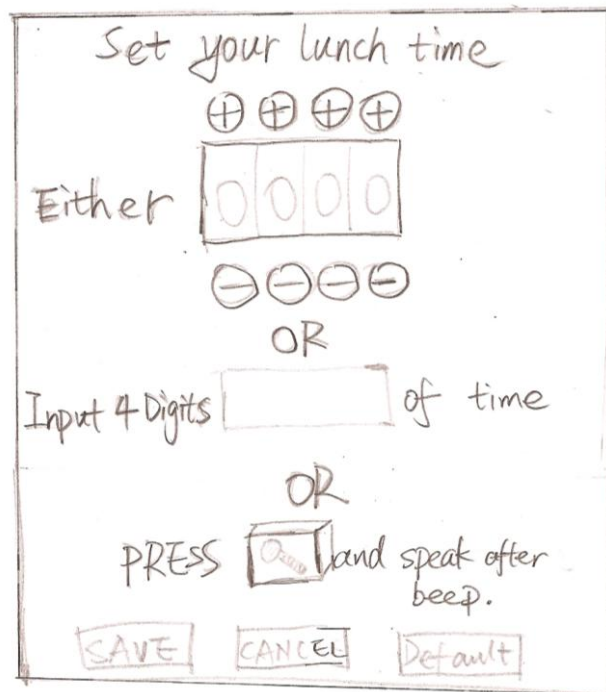
...

Patient: When and how should I take the pain killers?

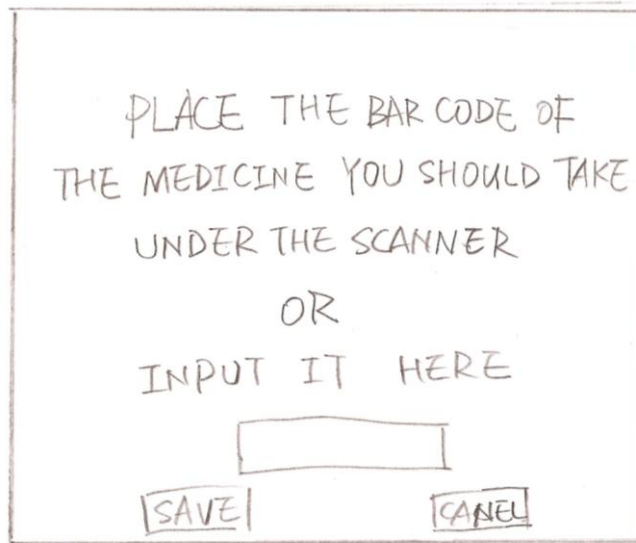
Doctor: After lunch, take two pills of XXX produced by YYY Company.

...

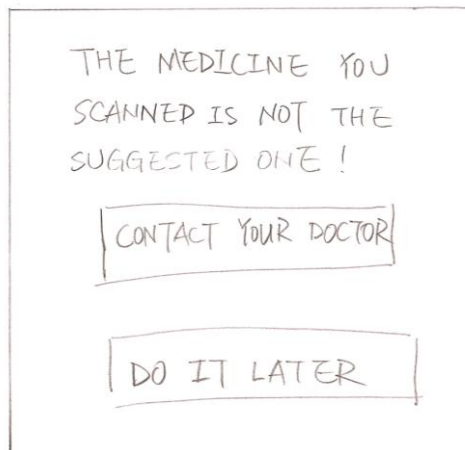
Example scenario:



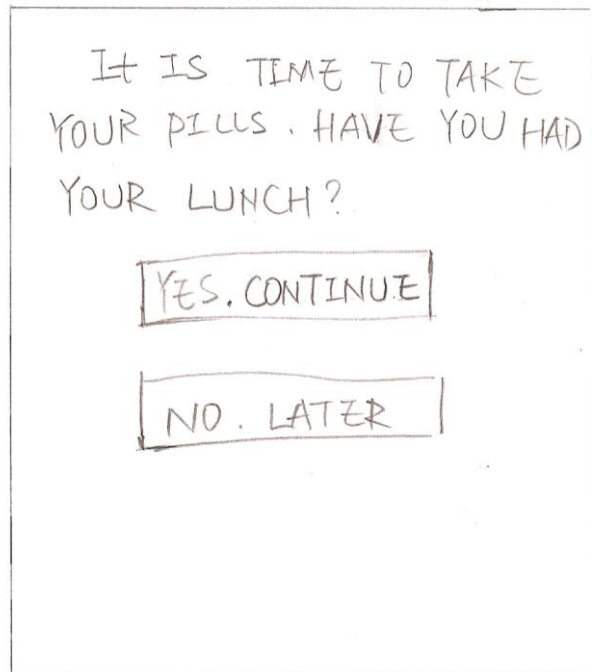
Set your regular lunch time;



Scan the bar code of pain killer to get the exact type of the medication (ingredients are different);



the medication is different from the one mentioned by the pharmacist



Relating references:

The ROBOCARE Project: Intelligent Systems for Elder Care

<https://www.ccs.neu.edu/course/csg170/ssl/Cesta05.pdf>

An Exploratory Investigation of Handheld Computer Interaction for Older Adults with Visual Impairments

<https://www.ccs.neu.edu/course/csg170/ssl/leonard05.pdf>

Robots!: Robotic Products to Assist the Aging Population

<https://www.ccs.neu.edu/course/csg170/ssl/forlizzi05.pdf>

POMDP Models for Assistive Technology

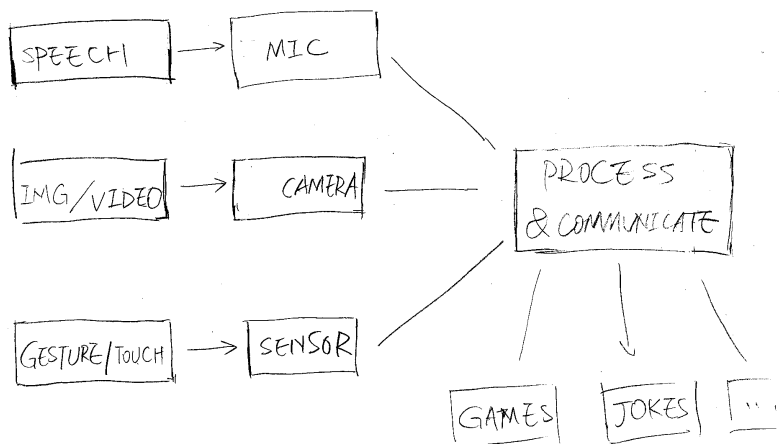
<https://www.ccs.neu.edu/course/csg170/ssl/hoey05.pdf>

Second choice:

Robotic companion for elder people

The system includes speech recognition, touch recognition collecting speech and gesture from the users to infer the emotion status of them. The system should be able to bring entertainment to the users by playing games with them or telling some jokes (It's not strange that a **cartoon** dog can speak English). The system can be also used for remote monitoring, by collecting data from the patients (by speech, image, etc) in case of emergency.

After first stage of using the system, the user may be willing to use touch screen to communicate better with the system via WIMP if they feel strange to talk with a machine or a cartoon dog and cannot live without it.



Relating references:

HOMIE: An Artificial Companion for Elderly People

<https://www.ccs.neu.edu/course/csg170/ssl/krigstein05.pdf>

The Design of the Huggable: A Therapeutic Robotic Companion for Relational, Affective Touch

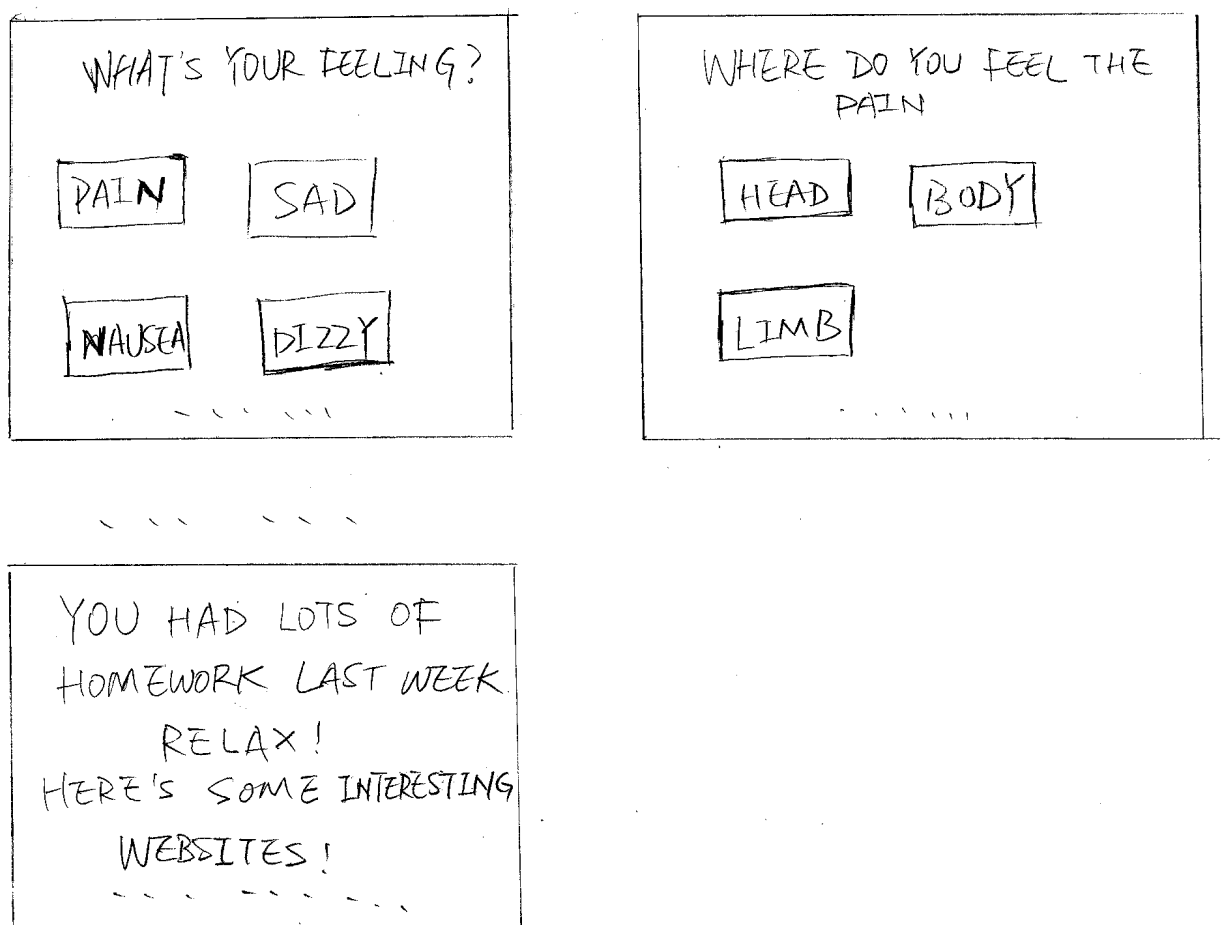
<https://www.ccs.neu.edu/course/csg170/ssl/Stiehl05.pdf>

Third choice

Online Health resources

This system must be used for searching health related information with as simple term as possible such as "pain in head".

The system use heuristic questions trying to get exact situation of the user and provide relating information for them to read.



The enormous possibility of health issues make this project very difficult to be implemented as course project. The above sketch is only a very simple example to demonstrate this system vaguely.

A Study of Web Usability for Older Adults Seeking Online Health Resources

<https://www.ccs.neu.edu/course/csg170/ssl/becker04.pdf>

A web-agent based system to extend the elders social family networks

<https://www.ccs.neu.edu/course/csg170/ssl/santana05.pdf>