

Development of educational resources oriented to the Maker culture for the conceptual design course.

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Maker

Describe those people who can generate new knowledge, activities or products by themselves.

New technologies have a very important role in this culture.



Identification and classification of the design attributes.

Juan Camilo López

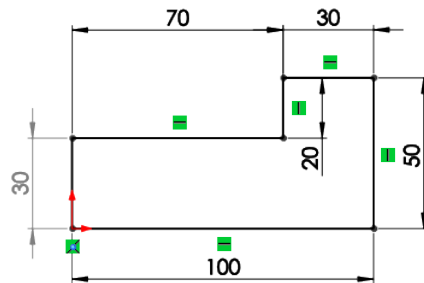


Design attributes

1. Objectives: are the things that the designer wants to achieve.



2. Restrictions: are the limitations and the aspects that the object must respect.



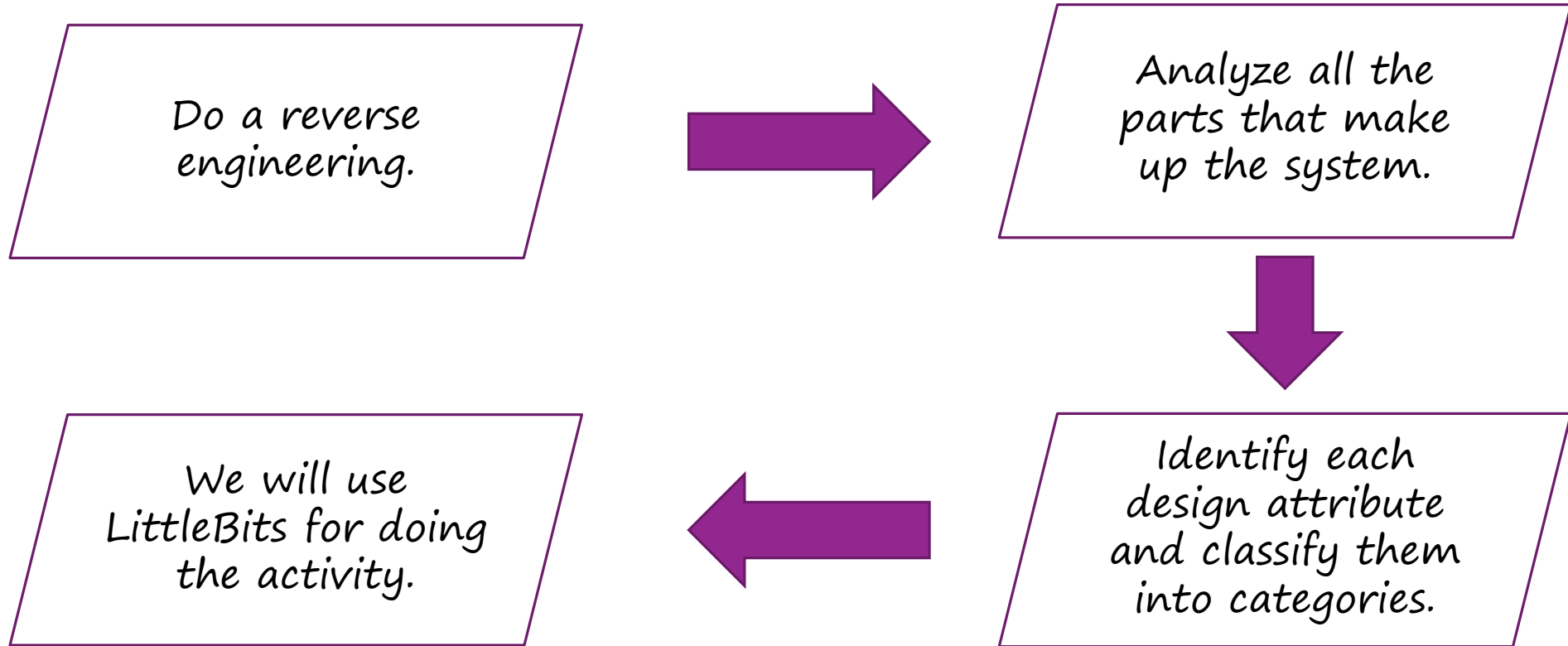
3. Functions: these ones represent every activity that the object must do.



4. Implementations: represent the ways to execute the functions of the product.



Activity



LittleBits

Are a modular electronic system that can be connected with other bits thanks to the magnets at the end.



There are a lot of types of LittleBits, each one has a unique function.

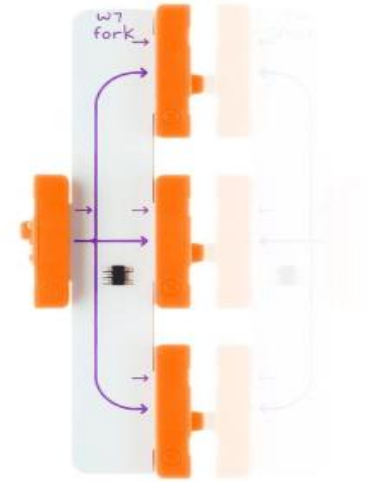
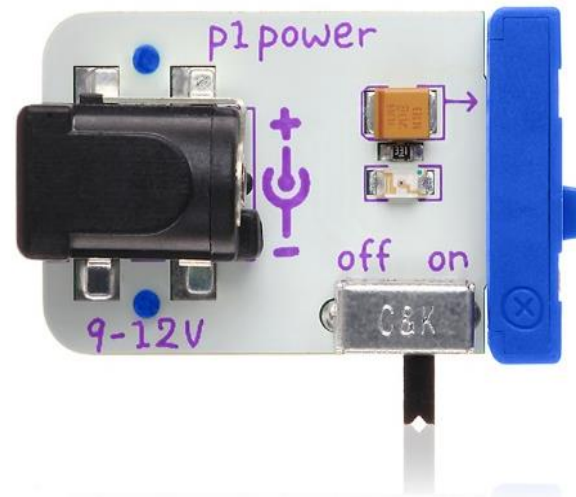
Power (Blue): generates electricity.

Input (Pink): makes possible the control of the circuit.

Output (Green): does an action.

Wire (Orange): increases the size, changes the direction or adds complexity and programmability to the circuit.

LittleBits used in the activity.



LittleBits used in the activity.



Instructions

1. Form groups of four people.
2. Each group will have a folder on disk with all the information.
3. With the help of someone, we will disarm the circuit and each group will analyze the disassembled part.
4. Analyze the design concept and the application to identify the other attributes.



Problem

The danger in the care of patients with senile dementia.



- ▶ It is a serious deterioration of mental capacity that interferes with daily life.
- ▶ An example are memory problems.
- ▶ Alzheimer's disease is the most common type of dementia.

Design Concept

1

Integrated monitoring and warning systems.

2

The limitations of patients are very important for the system.

3

It will provide autonomy and security.



Lightweight and small (less than 30g)



Report health status



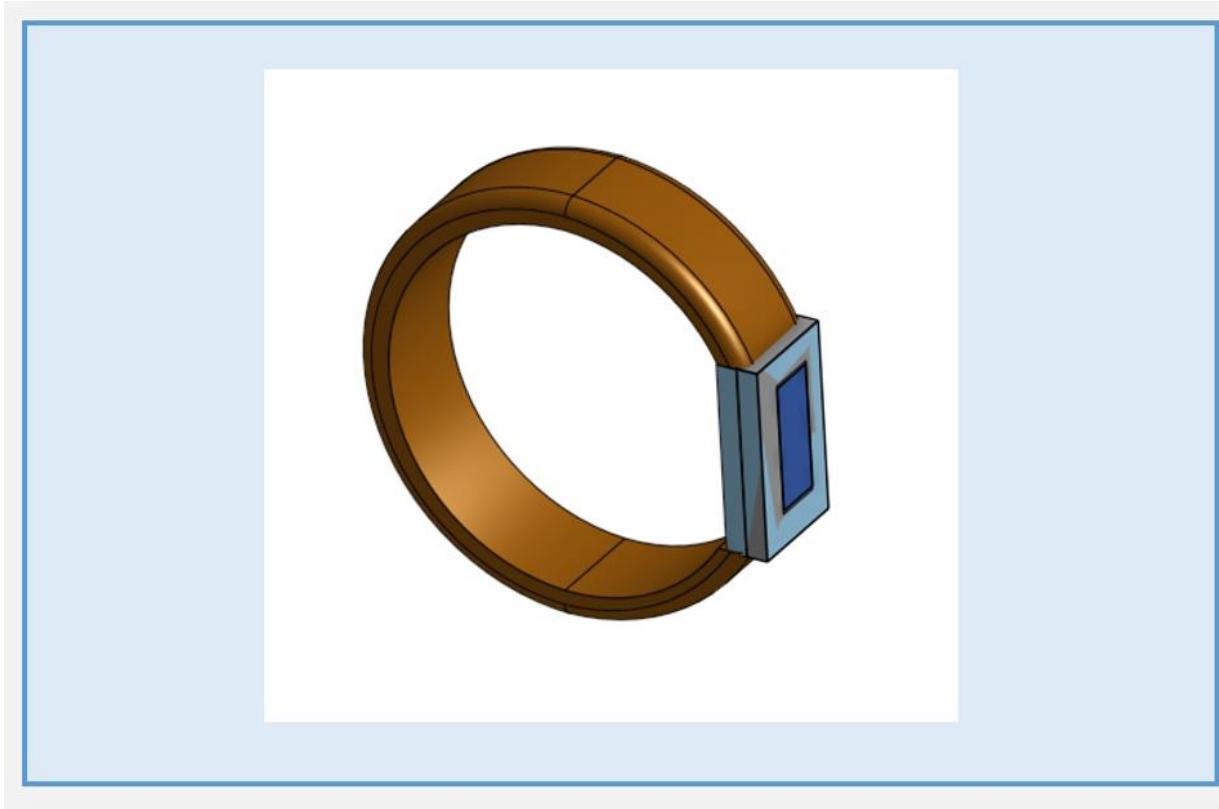
Know health status



Increase availability

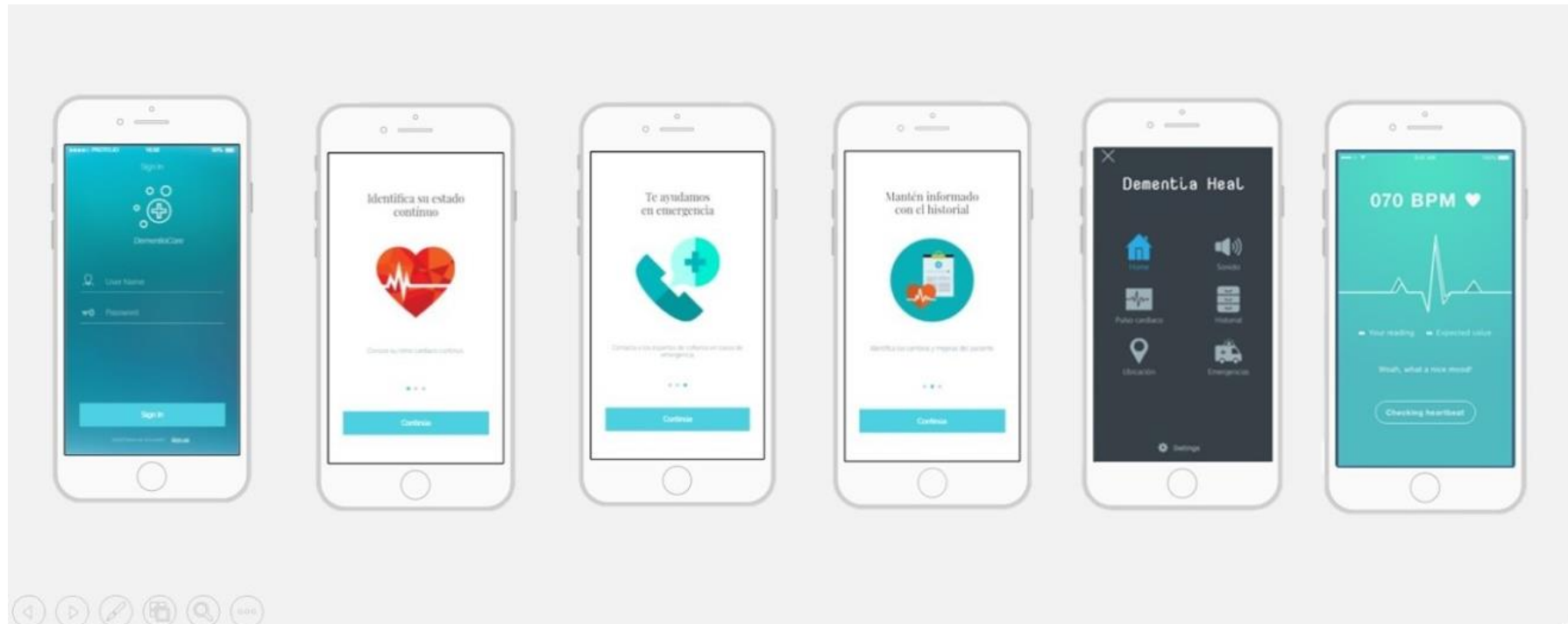


Product

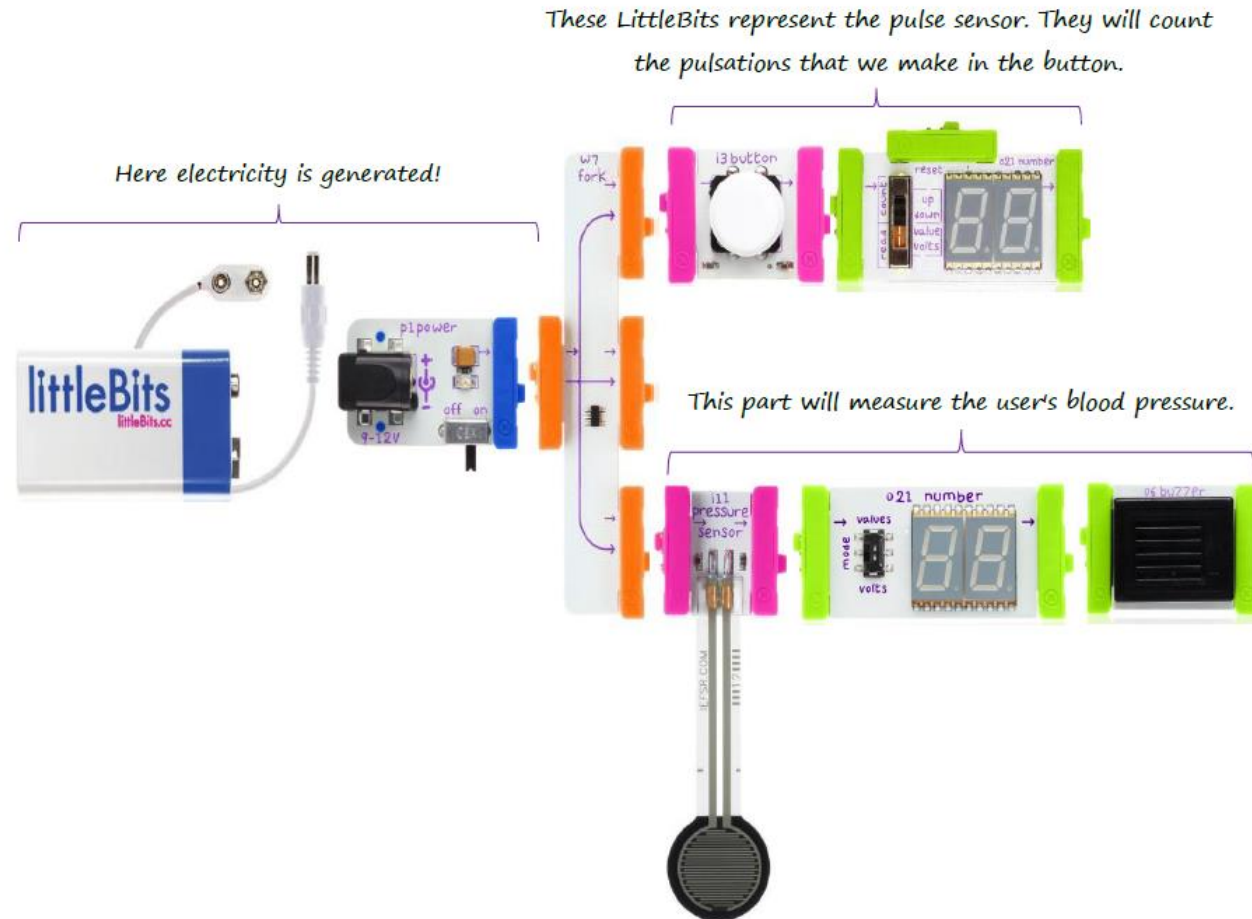


3D prototype.

Monitoring app



Representation of the product with LittleBits.



Design Attributes.

Objectives	Restrictions	Functions	Implementations
Trustworthy	Length less than 15 cm	Show personal data	Programmable platform
shock resistant	Information with privacy levels (only the caregiver can access it)	Monitor vital signs	Pulse sensor
Guarantees privacy		Report location	Ultrasound sensor
Comfortable		Schedule of activities	Screen to show info.
Easy adaptation			Laptop
Easy to use			
Exact			
Small			
Lightweight			
Ease to interpret the data			

Thank you!