Usability Engineering Basics

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Using a PC? Problem?

Stress?

Definition „Usability"

Usability is defined by the

- Effectiveness,
- Efficiency and
- Joy

with which users can achieve a goal, or accomplish a task.

How to ensure good usability?

In a structured process, so it is

- Reliable,
- Repeatable,
- Etc.
- But not plain luck ;-)

User Centered Design Process (ISO 9241-210)

- generally accepted process (at least as basis) for sw-development

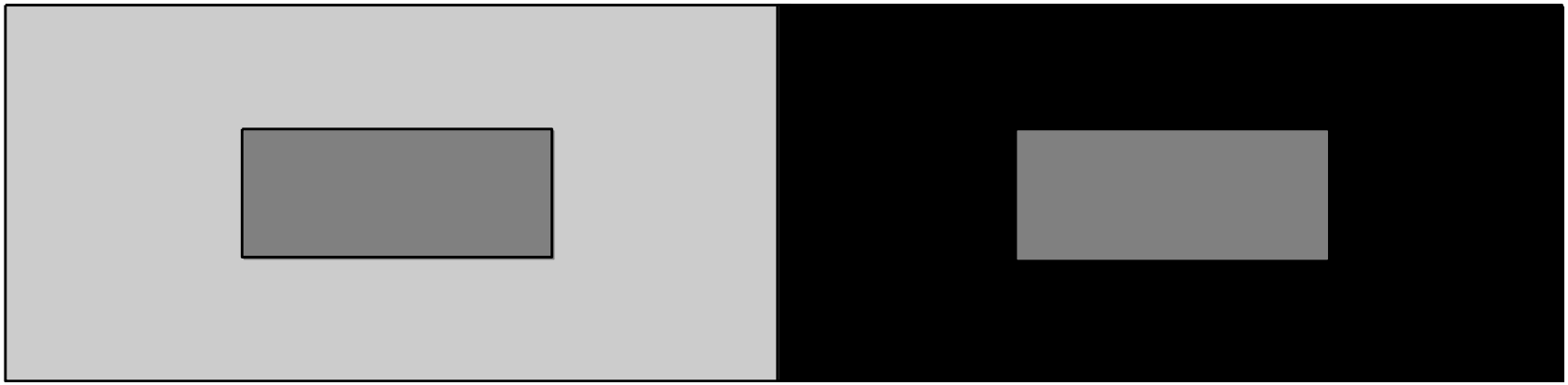
Human Perception

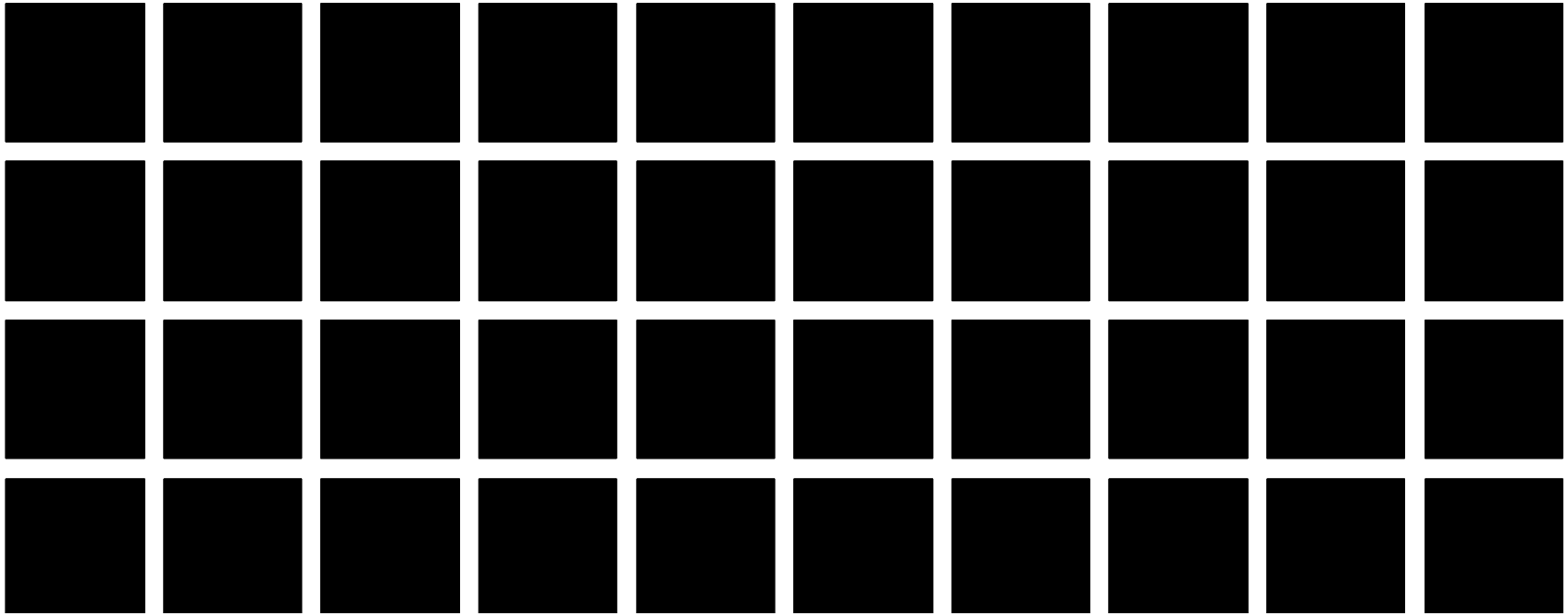
Highly optimised, for hunters and gatherers

Large amount of interpretation done by our brain

- Edge detection
- Shape detection

Can lead to errors in HCI





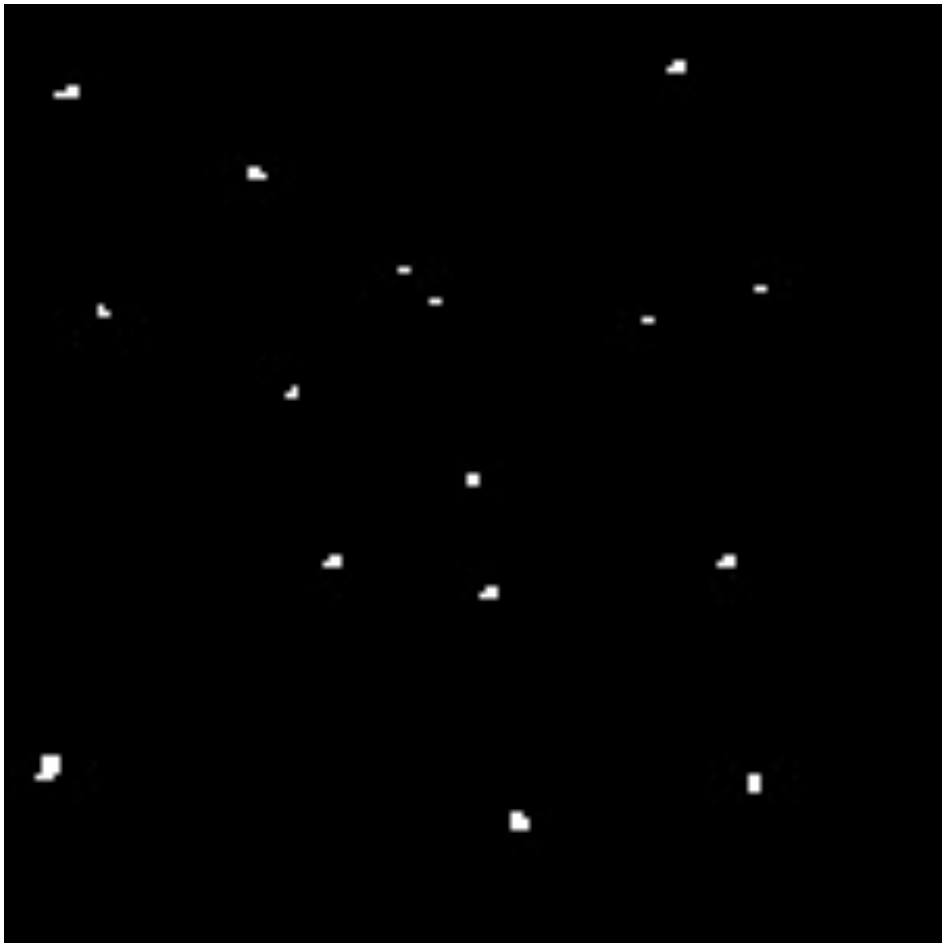
(Very simplified version of) Human Memory

Sensor memory

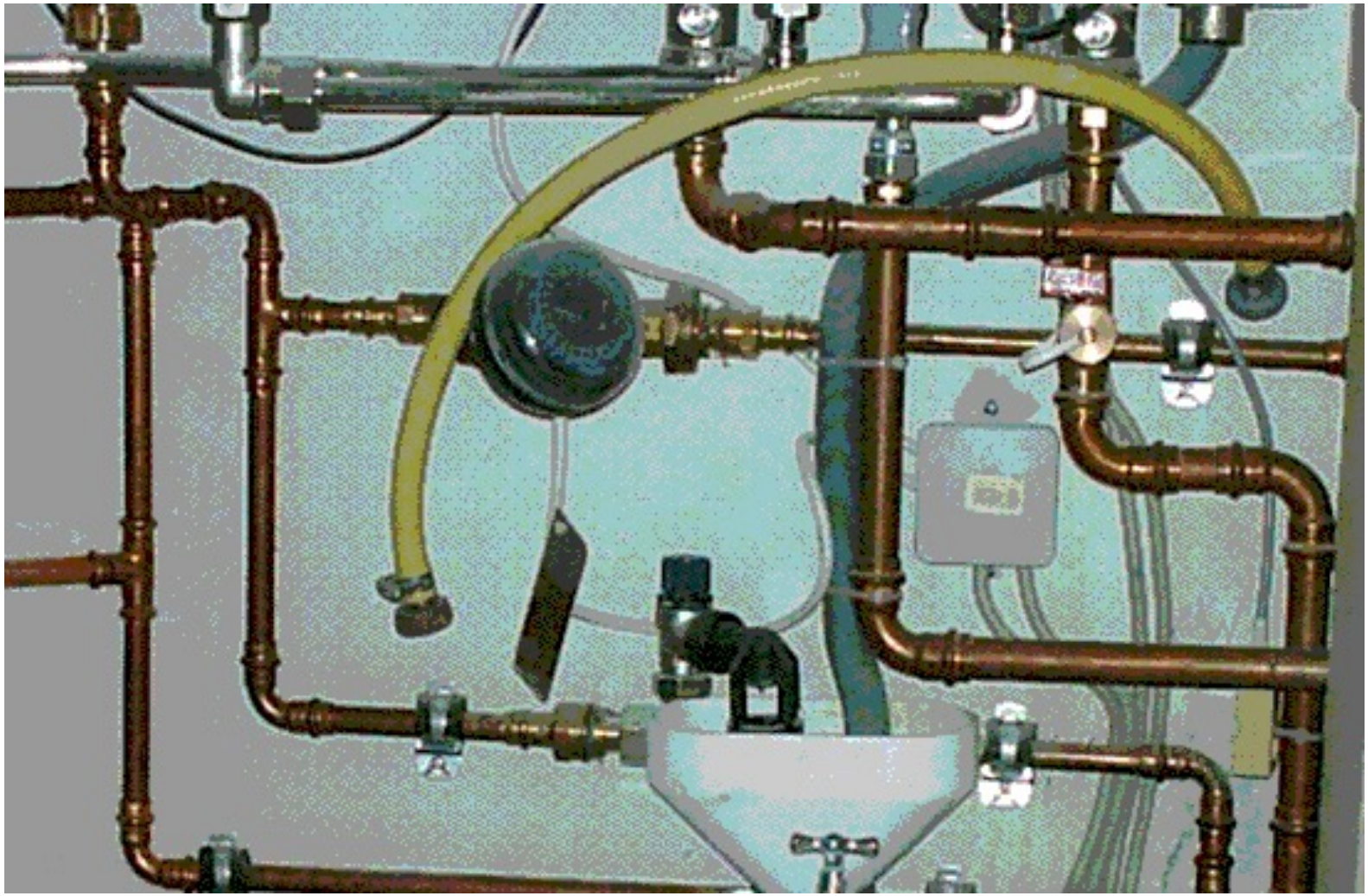
Short term memory

Long term memory

Sensor Memory



Sensor Memory



Short term memory

Defines our scope of attention

Attention can not be devided

Capacity typically 7 +-2

Long term memory

Declarative memory

Production memory

Implicit vs. Explicit knowledge

All our gathered knowledge and experience form our inner landscape

Mental models

- Are ALWAYS generated
- Recursive: build on existing models

How we act...

Intellectual level

conscious action

Flexible patterns

semi automated action

Sensomotor level

„Full auto mode“

Response times

Depend on application and context

Rule of thumb:

< 1 sec: instantanious
< 5 sec: delayed
< 10 sec: extremely delayed
> 10 sec: no response expected

Communication

Levels of communication

Pragmatic level

Semantic level

Syntactic level

Mistakes can happen on every level

Examples? Results?

Universal?