05-10
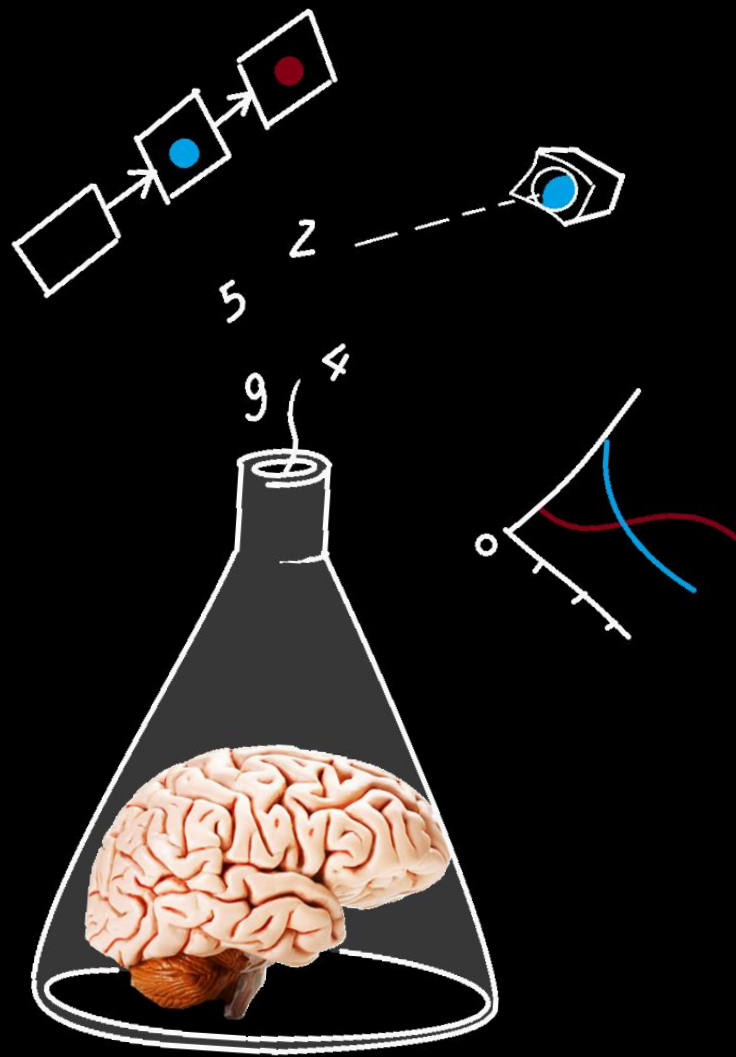
Interfaces
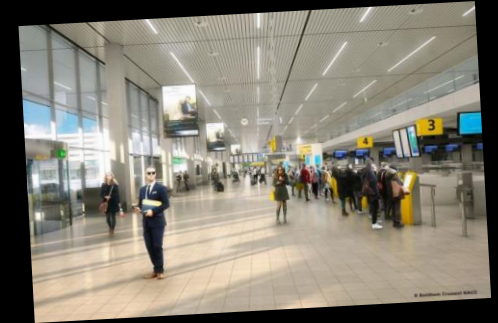
Interfaces

All man-made environments are interfaces

- Design determines how well its users can achieve their goals and tasks
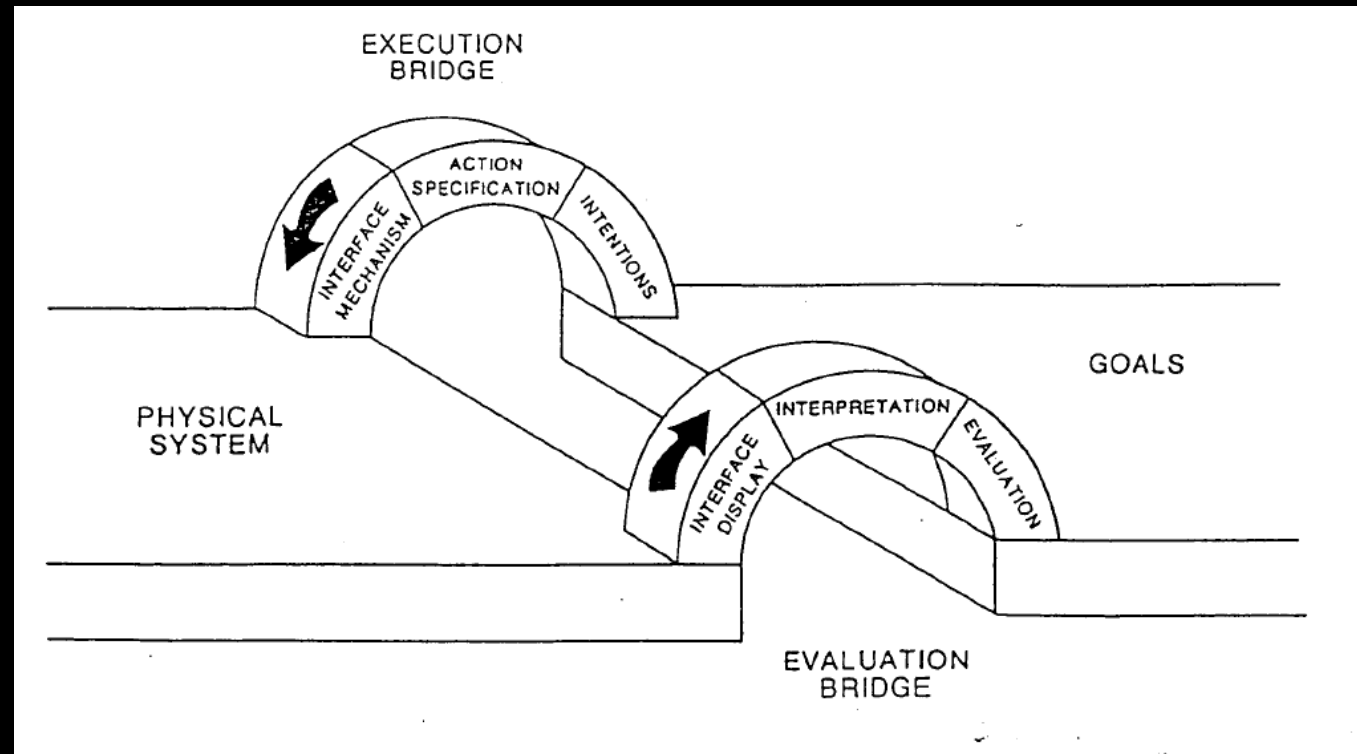- Environments are interfaces because they provide *information* that guide user decisions

Interfaces

Book chapters 7 and 14 : a lot of outdated 'knowledge'
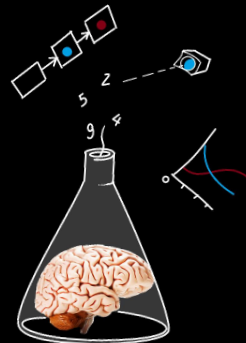
e.g. Norman (1986)
'gulf of execution & gulf of evaluation'

Ultimately boils down to a simple non-surprising take-home message!

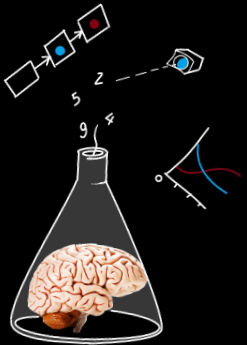# Today

- Several useful design principles

- I will present various topics

- You will come up with a design, using principles

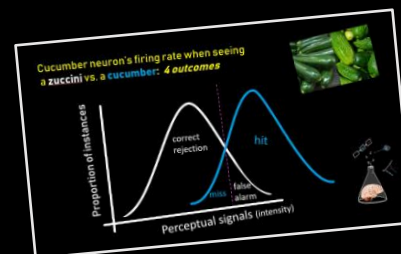- 2nd part of meeting: Present designs!

Good design...

considers
perception expectation attention memory

Perception

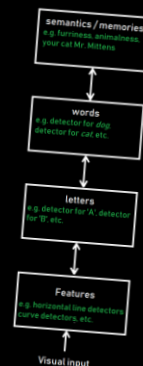Cucumber neuron's firing rate when seeing a zuccini vs. a cucumber: *4 outcomes*

1) Reduce signal-to-noise ratio   (SDT!)
   contrast, size, illumination, etc.

2) Don't refer to more than 5 things with a single sensory dimension

3) Take top-down processing into account

4) Redundancy gain: convey information in multiple ways

5) Make things discriminable

Expectation

6) Realism: display elements should correspond to the real world

7) Realism – moving edition

Attention

8) Minimize access cost (i.e., navigating from one important location to another shouldn't take effort)

9) Proximity compatibility

10) Divide processing load among the senses

Memory

11) Balance memory and perception: we do not have
    to memorize what we can see, and vice versa

12) Aid predictions (same as principle 11)

13) Safeguard consistency

Perception

1) Reduce signal-to-noise ratio (SDT!)
    contrast, size, illumination, etc.

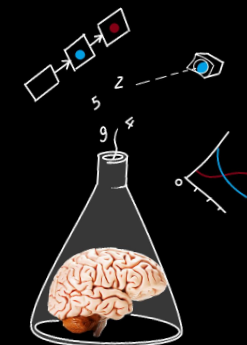2) Don't refer to more than 5 things with a single sensory dimension

3) Take top-down processing into account
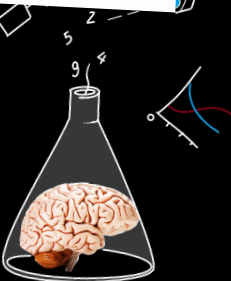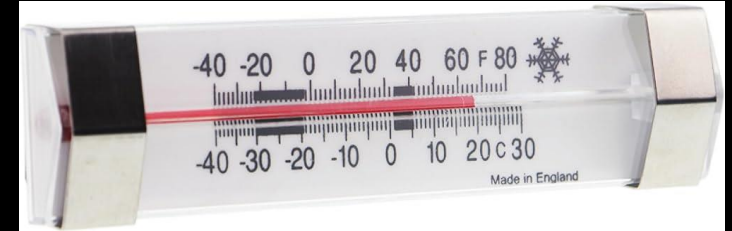
4) Redundancy gain: convey information in multiple ways

5) Make things discriminable

Expectation

6) Realism: display elements should correspond to the real world

7) Realism – moving edition

Attention

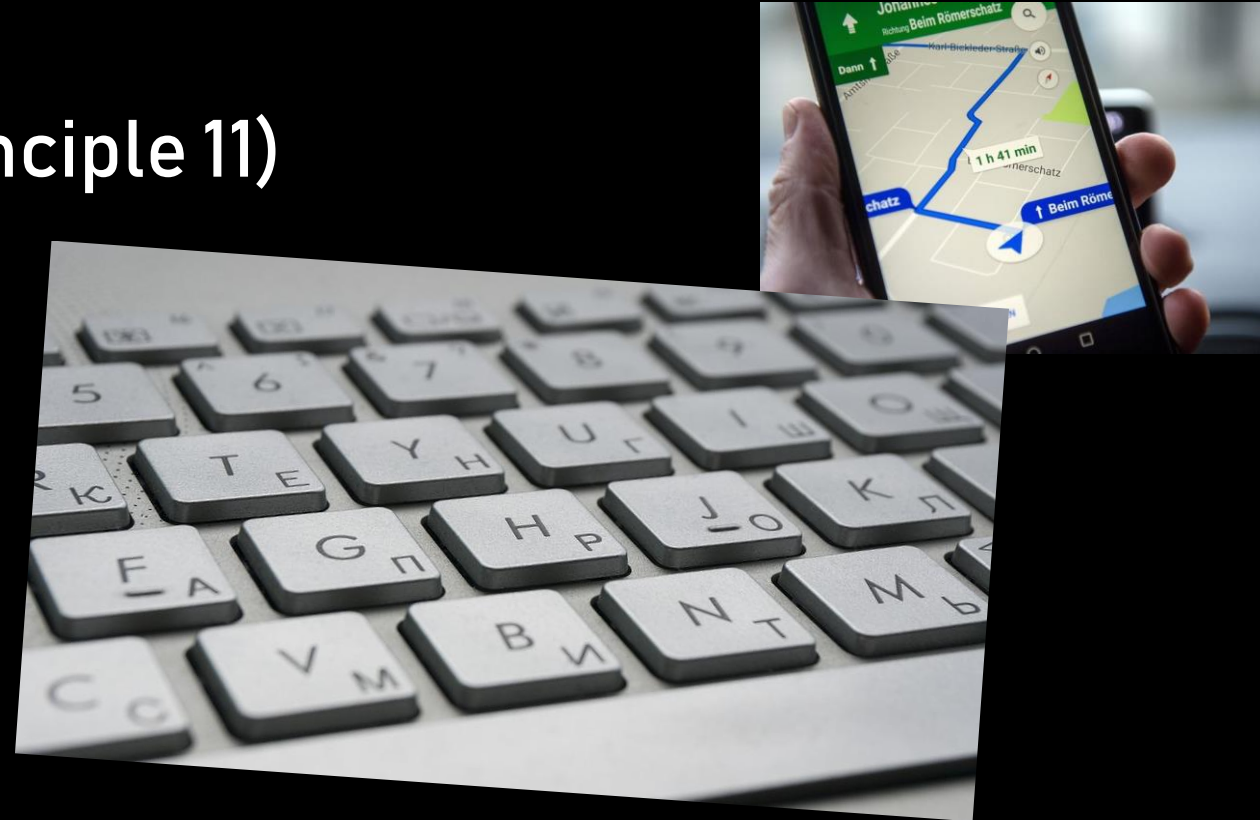8) Minimize access cost (i.e., navigating from one important location to another shouldn't take effort)

9) Proximity compatibility

10) Divide processing load among the senses

Memory

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12) Aid predictions (same as principle 11)

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Perception

1)   Reduce signal–to–noise ratio   (SDT!)
contrast, size, illumination, etc.

2)   Don't refer to more than 5 things with a single sensory dimension

3)   Take top-down processing into account

4)   Redundancy gain: convey information in multiple ways

5)   Make things discriminable

Attention

8)   Minimize access cost (i.e., navigating from one important location to another shouldn't take effort)

9)   Proximity compatibility

10)   Divide processing load among the senses

Expectation

6)   Realism: display elements should correspond to the real world

7)   Realism – moving edition

Similar things in Ch. 14 Table 1

Memory

11)   Balance memory and perception: we do not have to memorize what we can see, and vice versa

12)   Aid predictions (same as principle 11)

13)   Safeguard consistency

Not all environments are designed for our benefit...

6 topics

Come up with a design improvement
(that would benefit <u>us</u>)

1) What would the ideal, perfectly navigable supermarket look like?

6 topics

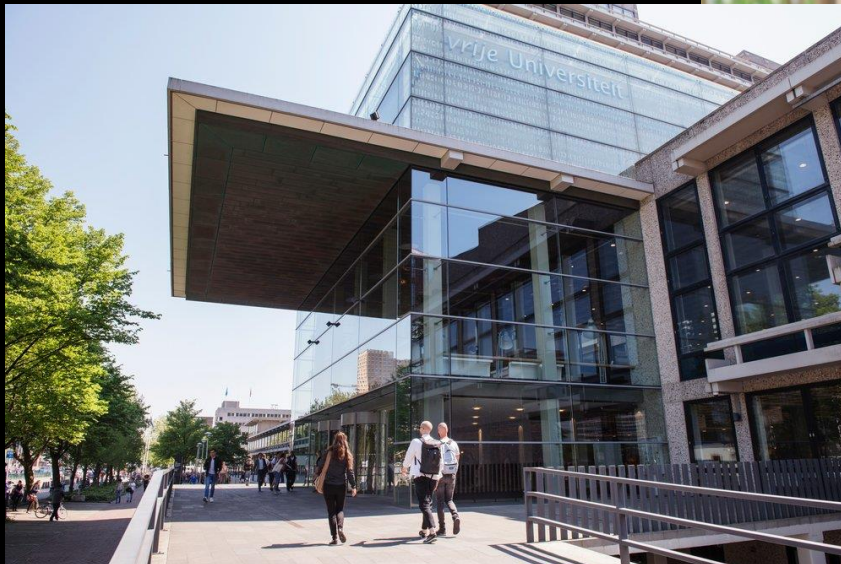**Come up with a design improvement**
(that would benefit <u>us</u>)

**2) Can touchscreen dashboards
   be successful and safe?**

6 topics

Come up with a design improvement
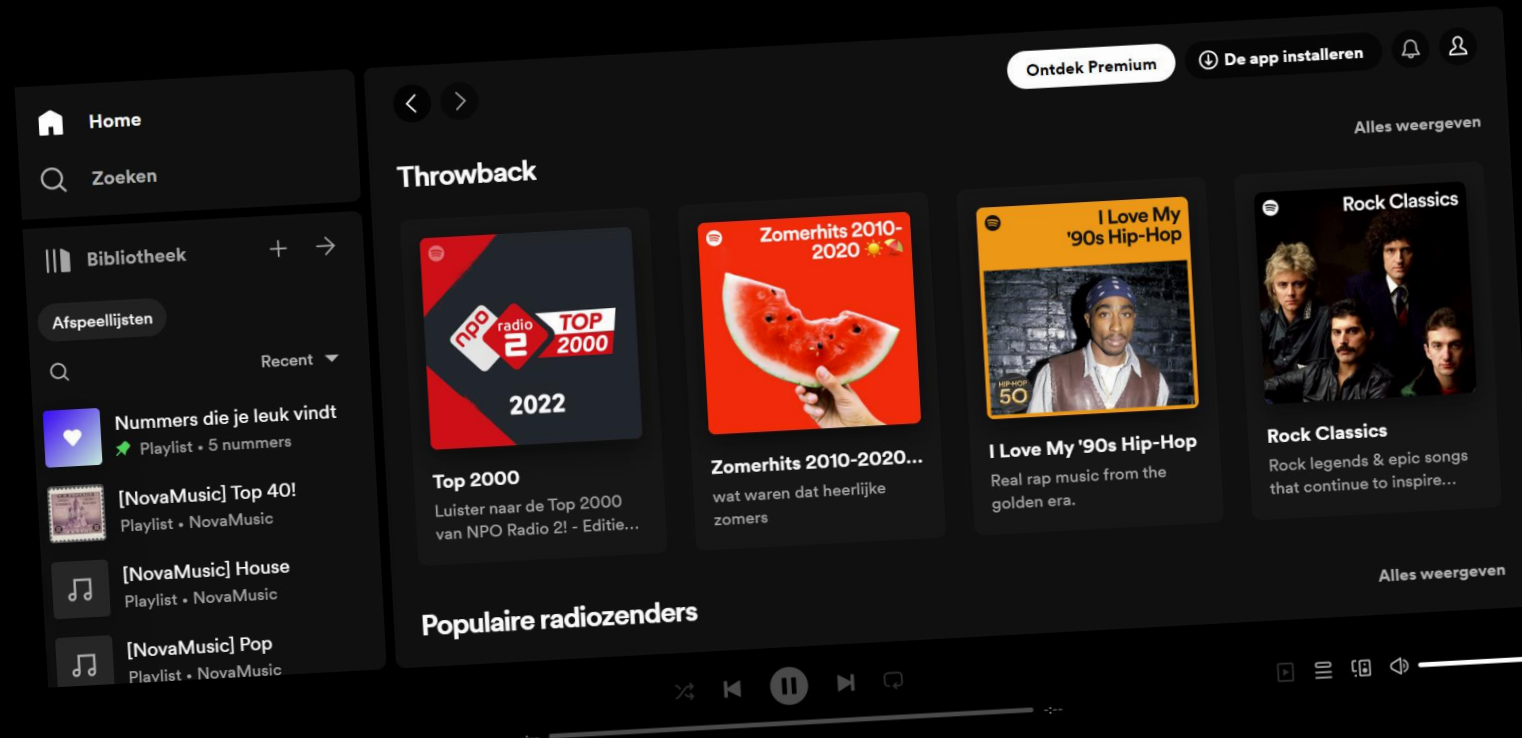*(that would benefit <u>us</u>)*

**3) Can the VU entrance be
       improved?**

6 topics

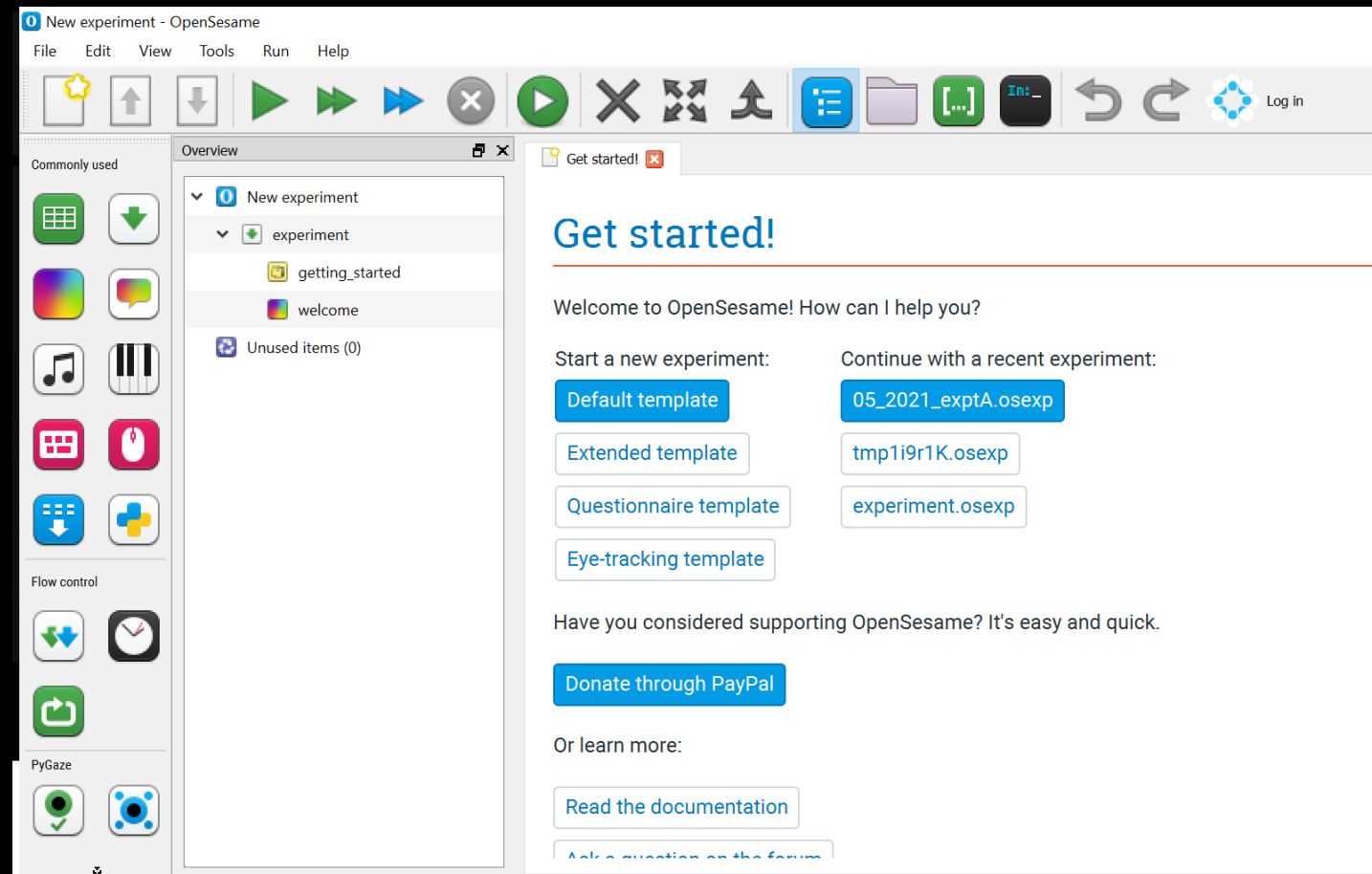Come up with a design improvement
(that would benefit us)

4) Is Spotify a good
   interface? Can it be
   improved?

6 topics

Come up with a design improvement
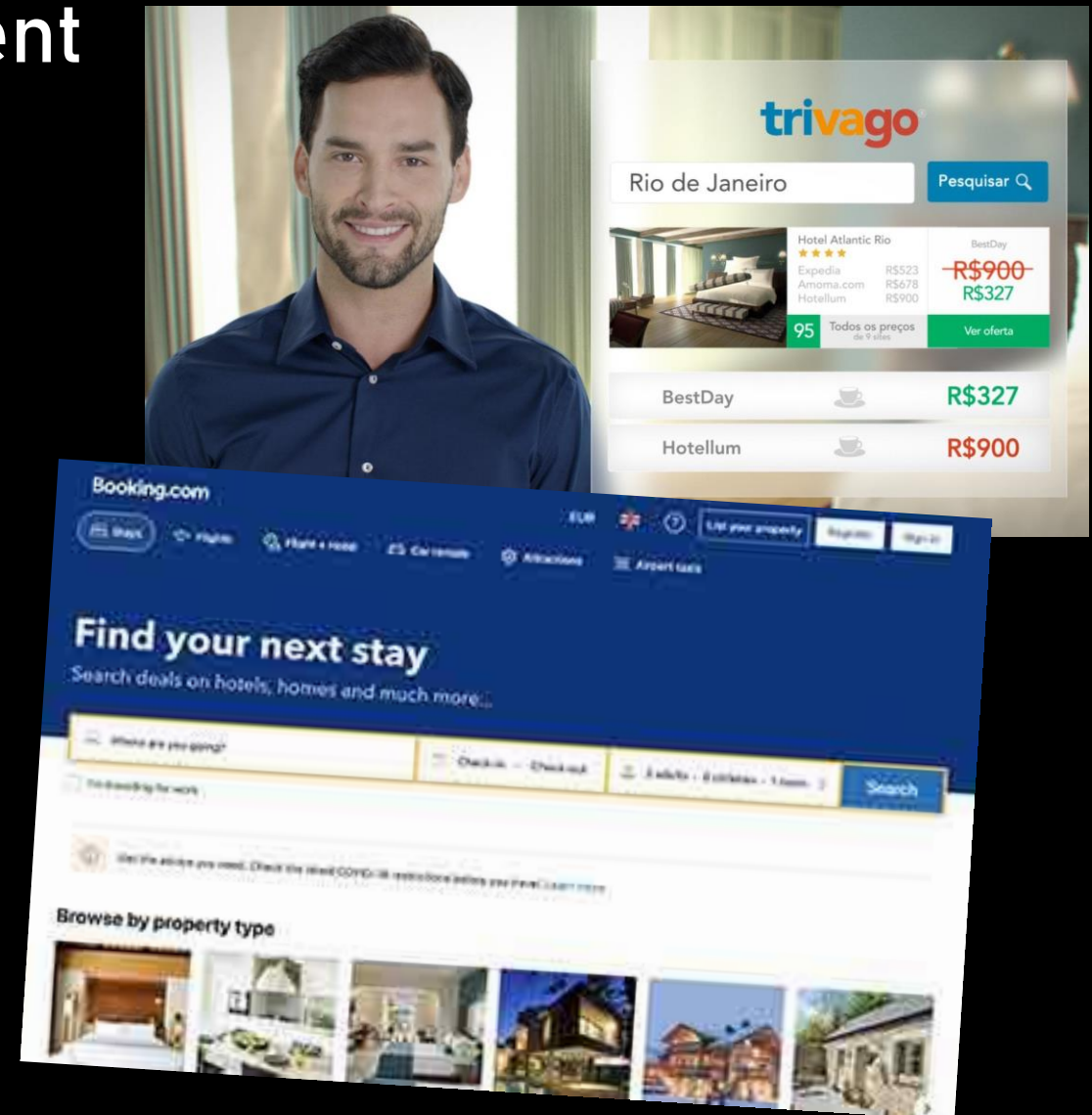### *(that would benefit <u>us</u>)*

5) How good (or bad) is the OpenSesame interface?

6 topics

Come up with a design improvement
(that would benefit <u>us</u>)

6) Which travel broker is better,
   Booking.com or Trivago?

6 topics

1) Ideal supermarket

2) Touchscreen car dashboards

3) VU entrance

4) Spotify

5) OpenSesame

6) Travel brokers