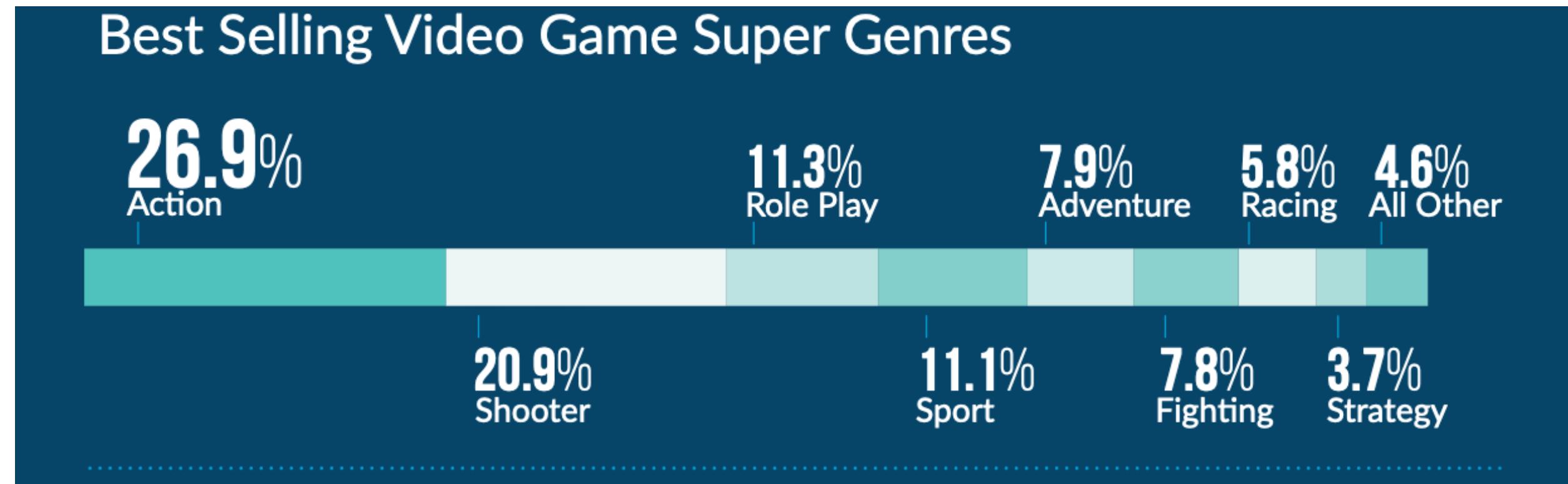


# Game Menu

[p.g.t.huitema@saxion.nl](mailto:p.g.t.huitema@saxion.nl) / [m.m.klostermann@saxion.nl](mailto:m.m.klostermann@saxion.nl)

# Empathize with players

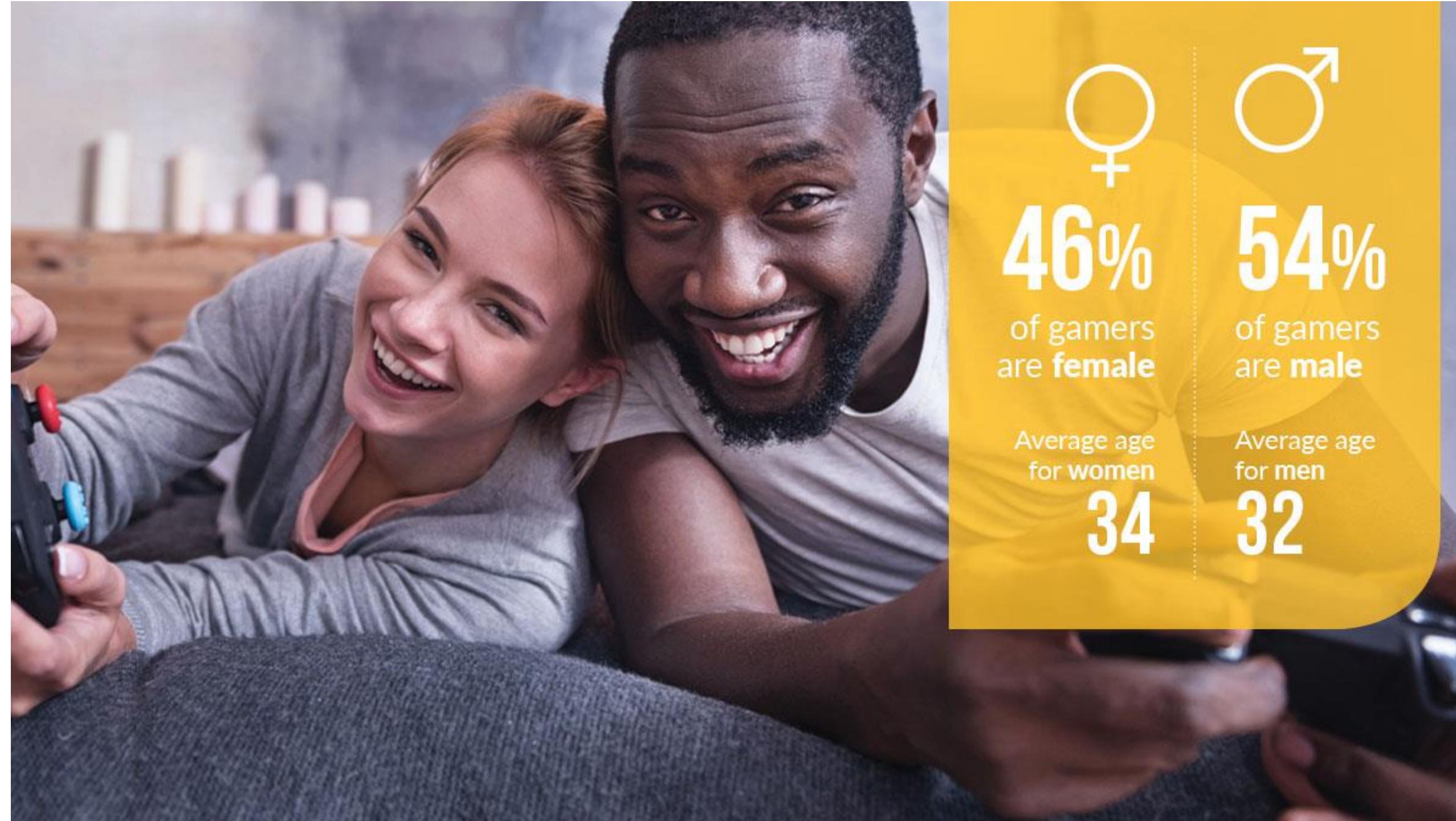


Check blackboard for original file

- Content market USA: \$35.5 Billion on content
- Best selling: Action
- Prominent decision: Price & Quality of graphics (incl. menu and ui)



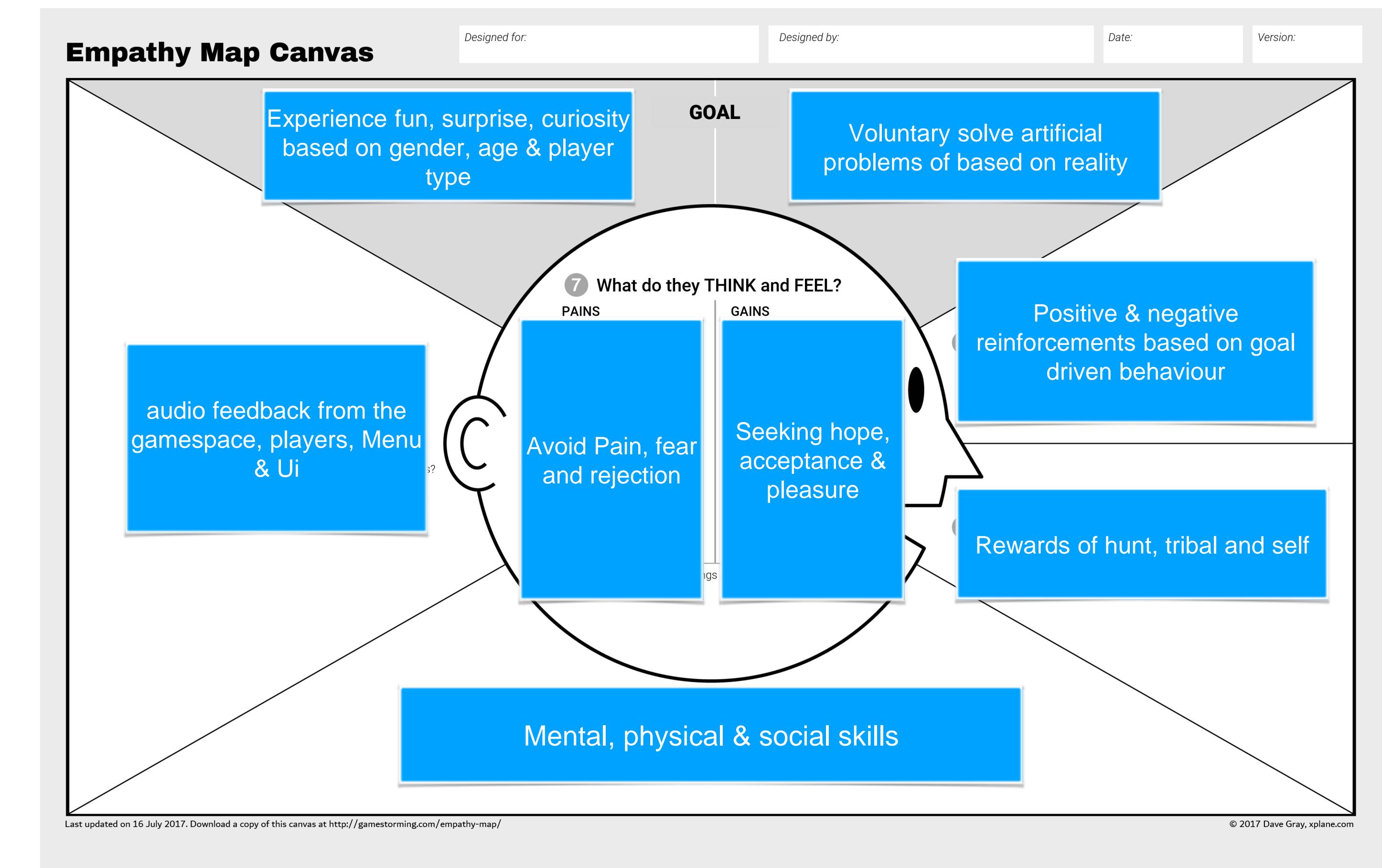
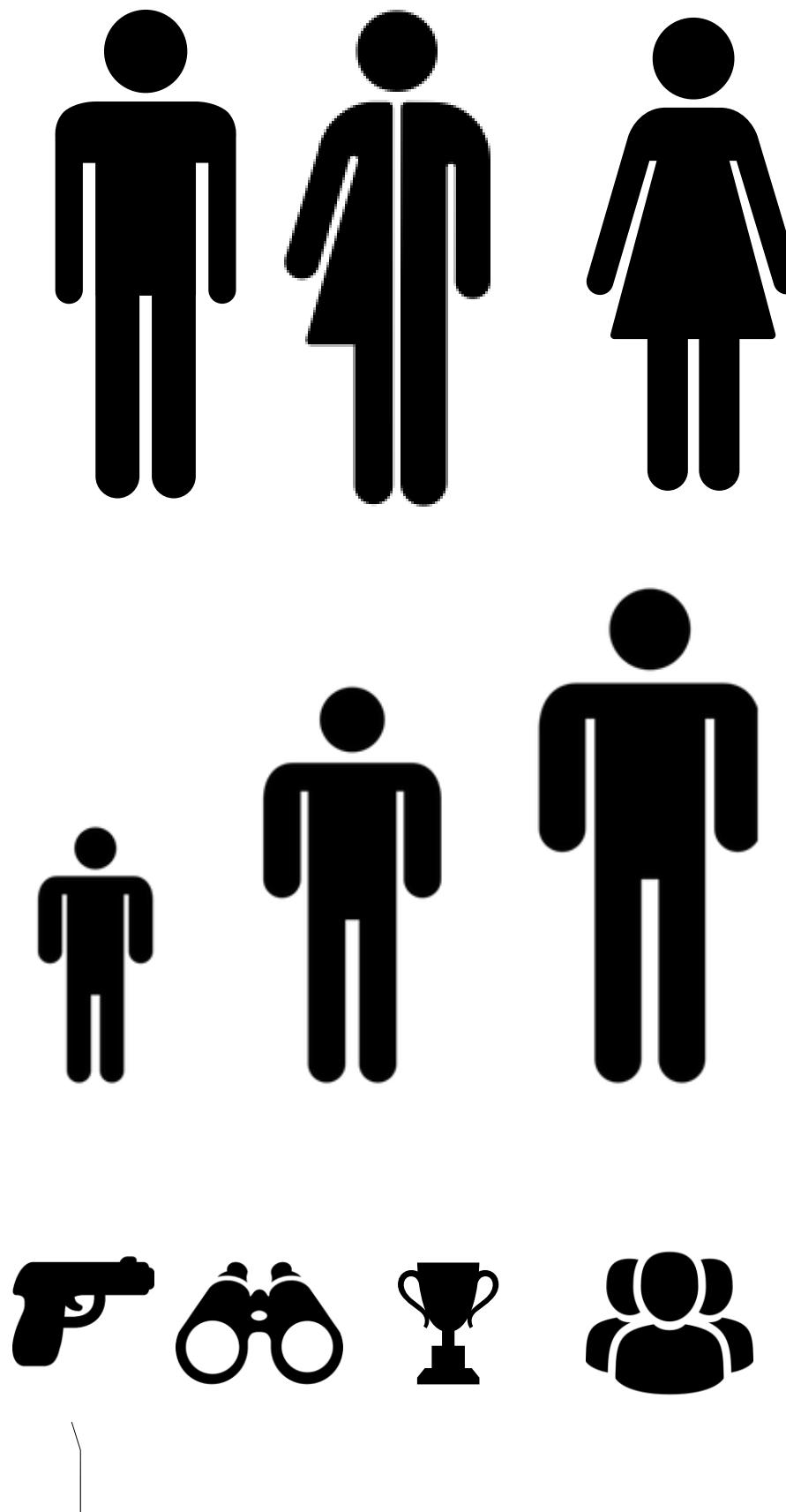
# Empathize with players



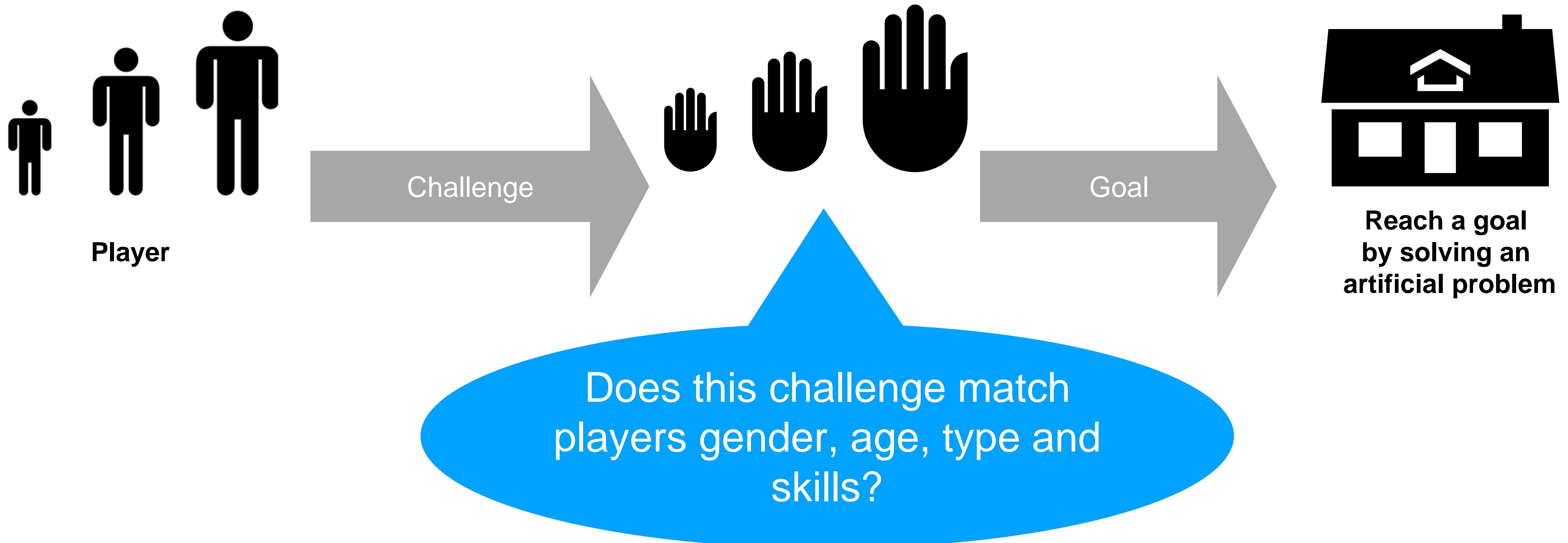
- Average age: 32-34
- Popular device: Phone with Casual games



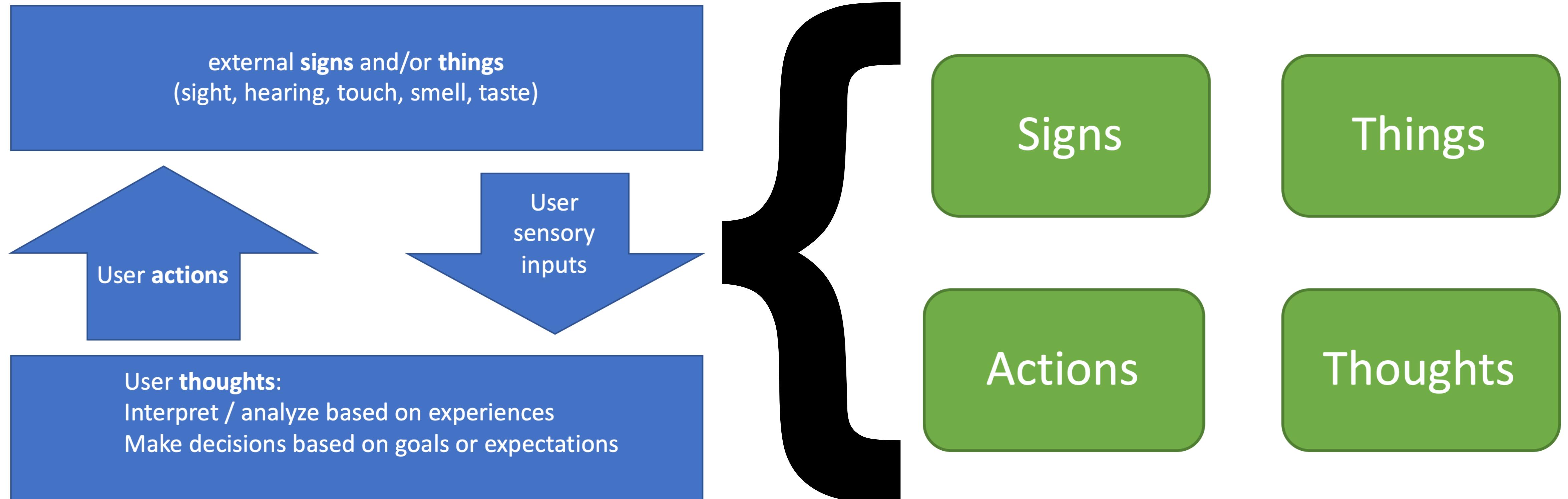
# Empathise with gamers



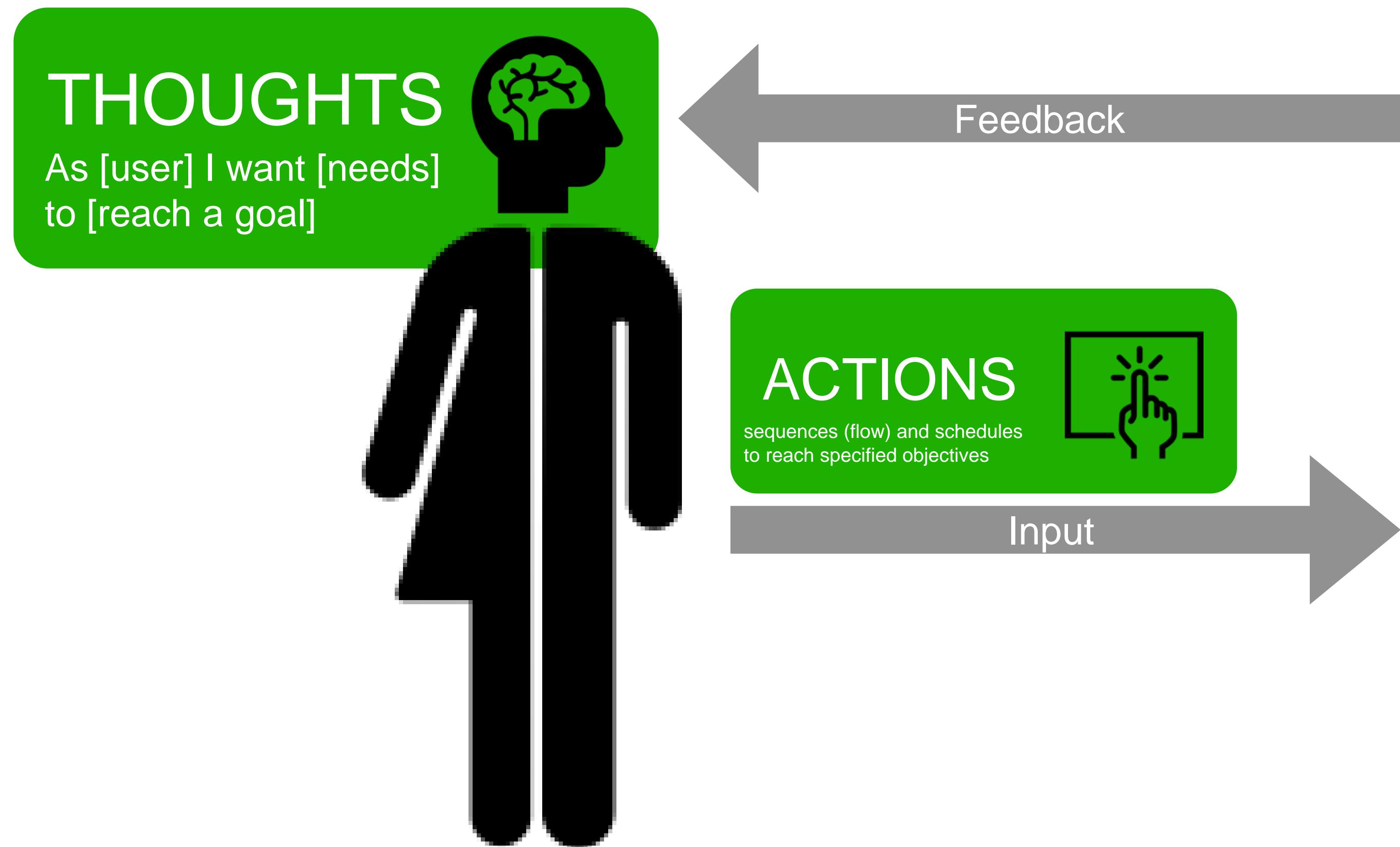
# Define problem



# Define problem of interaction



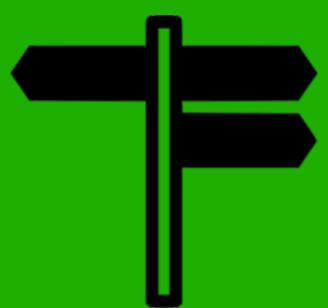
# Ideate space



Virtual, mechanical and/or activity based interactive system

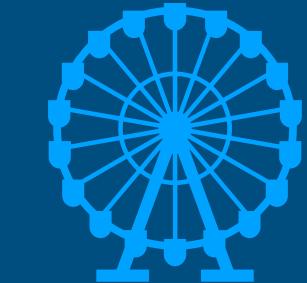
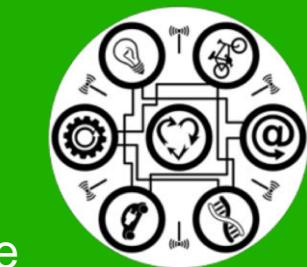
## SIGNS

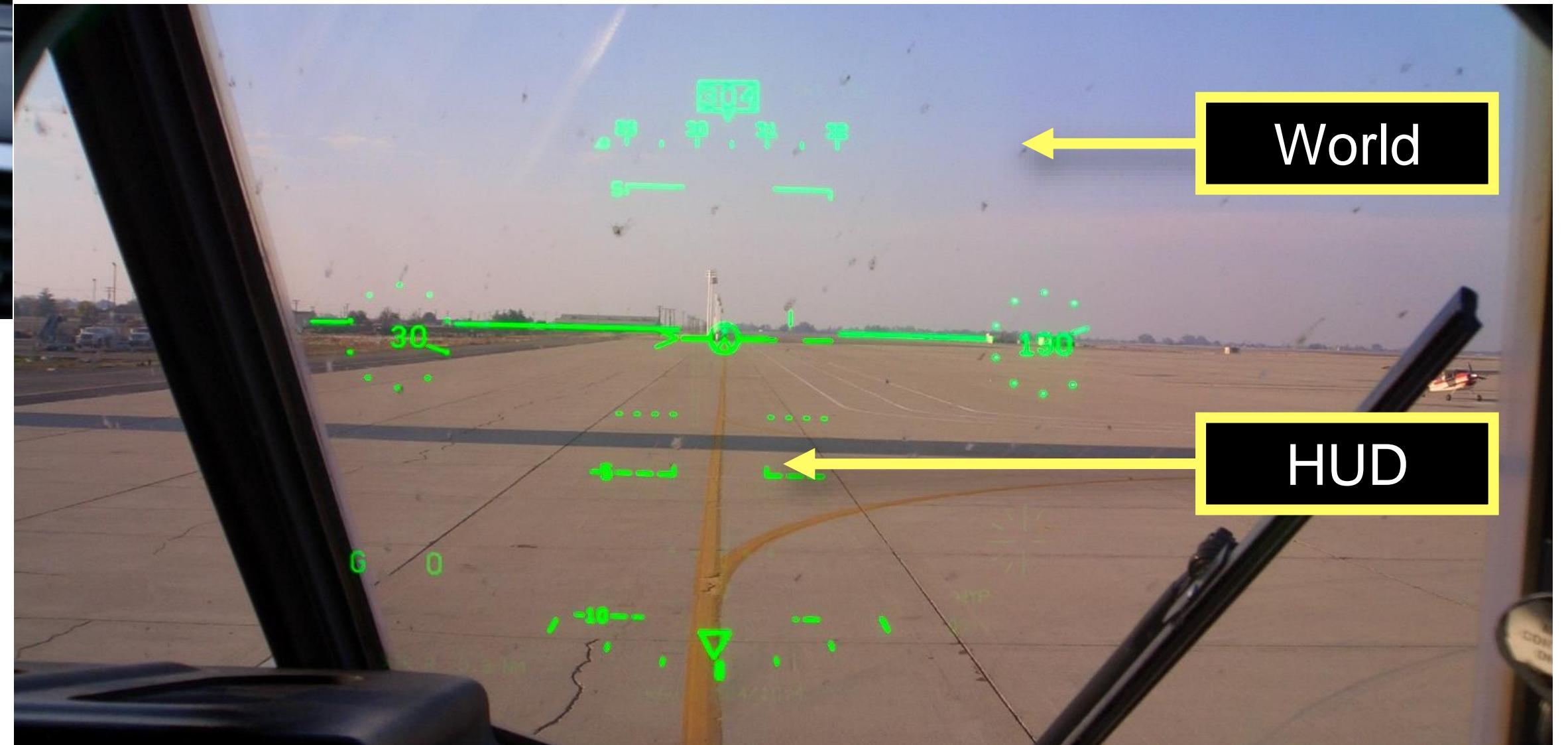
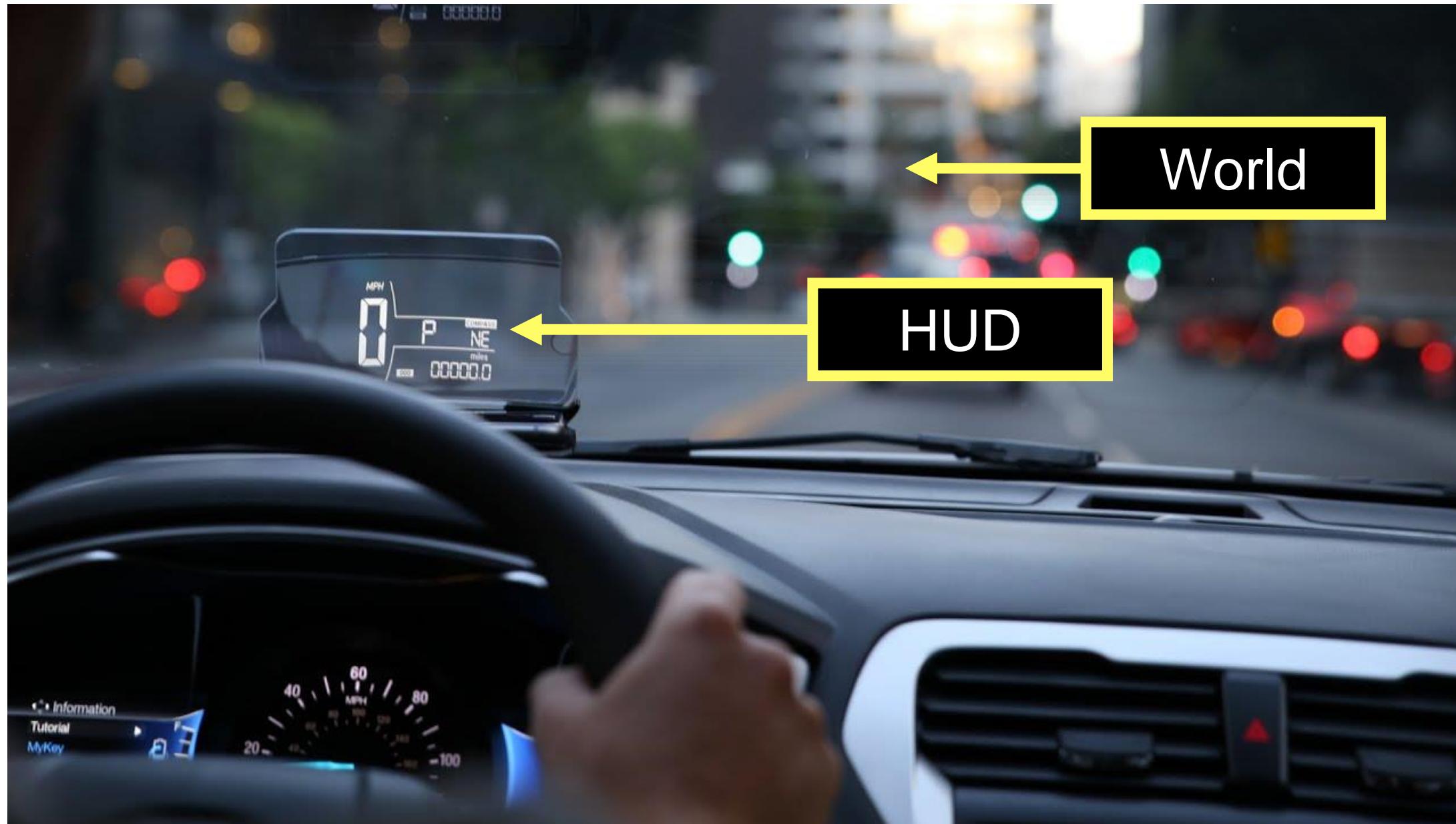
Sight, hearing, touch, smell, taste



## THINGS

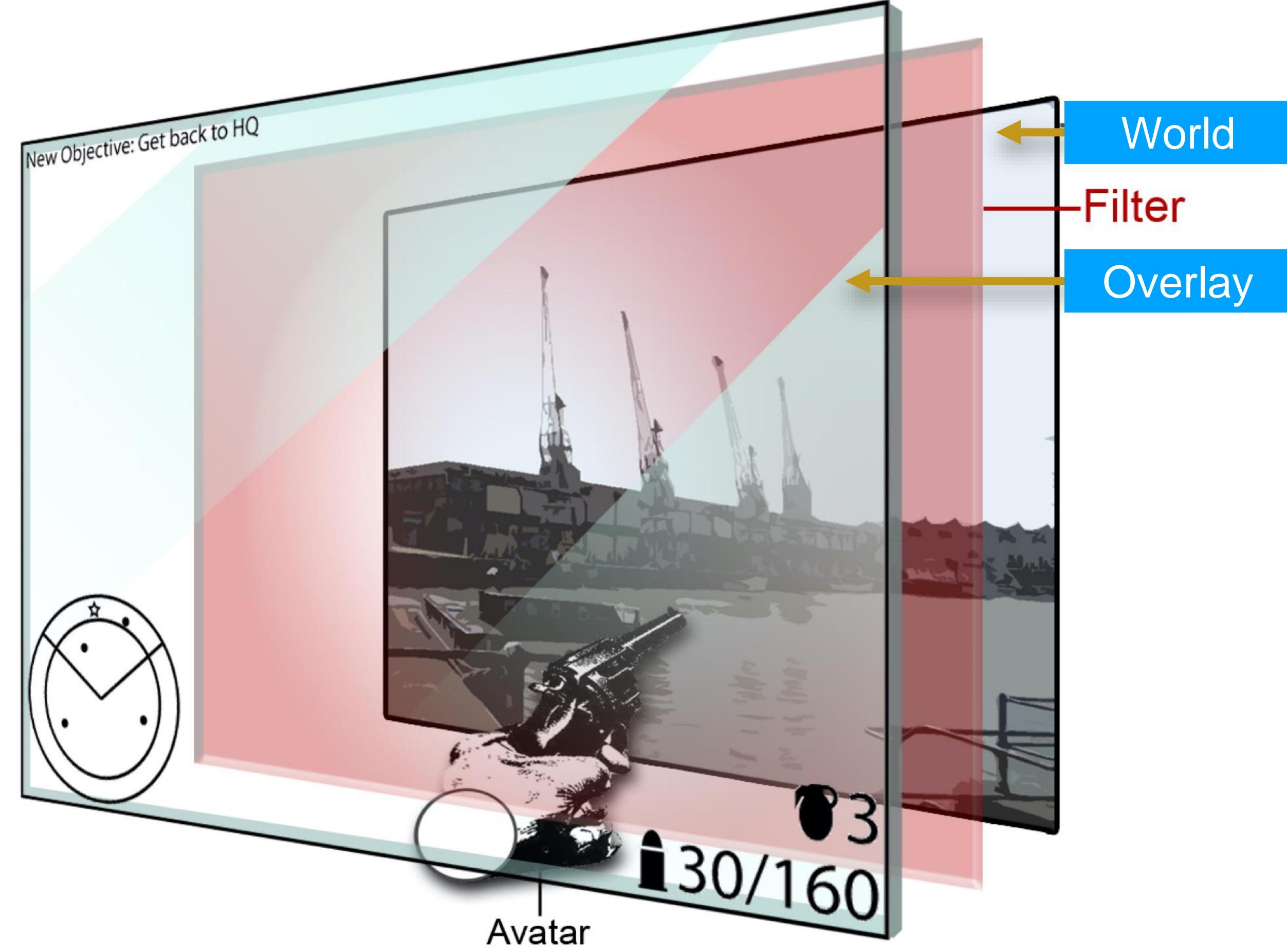
form and visual appearance





# HUD ?

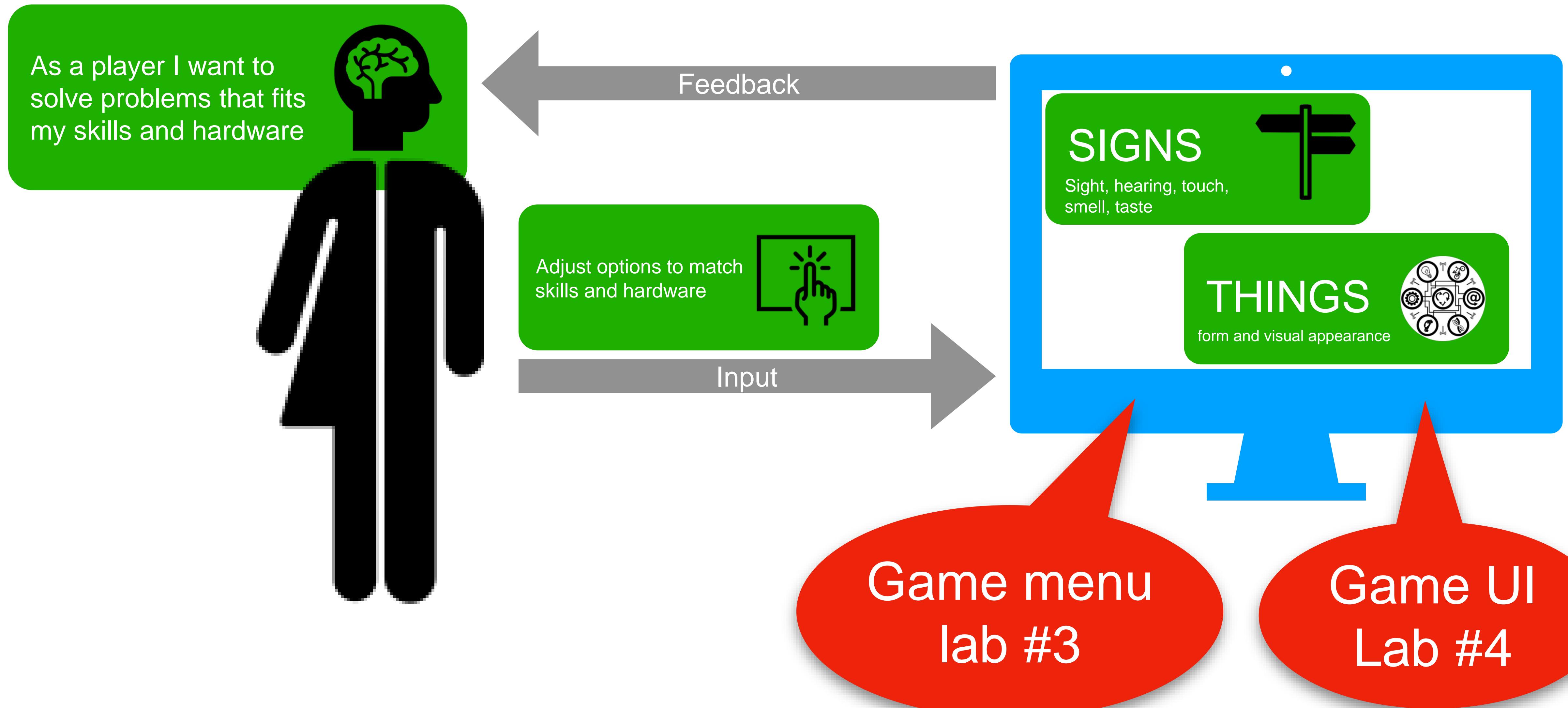
Heads up display



# HUD in games?

## Communicate with players

# Ideate space Game menu & UI



Installing update to  
system memory...

Do not turn off the power.

The Auto Power-Down function  
has been temporarily disabled.

Time remaining:

Under 1 min.



Wii U Menu



# Lab 3: Fix a game menu

- Empathize with the player
- Define menu problems
- Ideate (Wireframe) Game Menu
  - Menu pages (lecture & lab 3)
    - Main & Game menu
    - Controls options
    - Sound and visual Options,
- Prototype menu improvements (invision, marvel app, adobe XD)
- Test menu improvements
- report on problems, improvements and test results (including interactive prototype)



# Lab 4: Fix a game UI

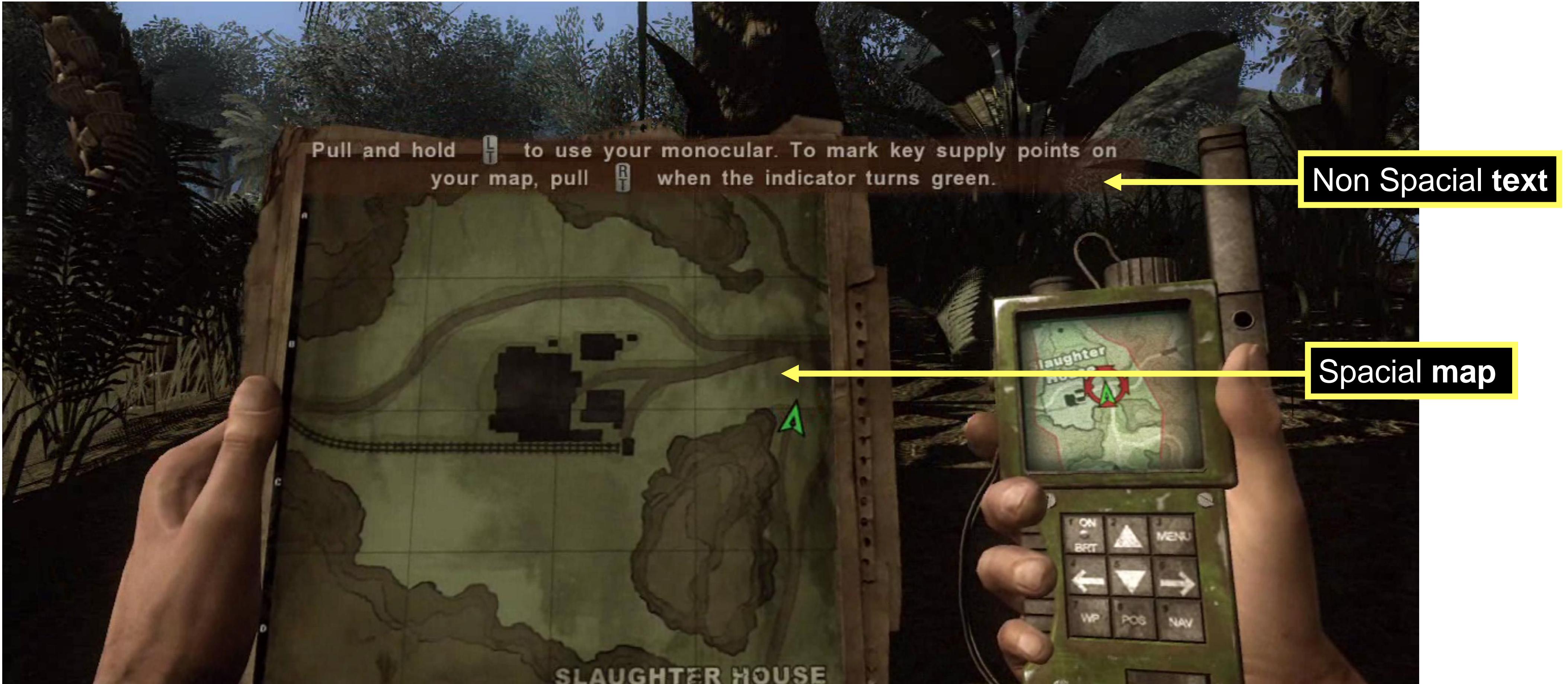
- Empathize with the player
- Define UI problems
  - UI pages (lecture & lab 4)
    - Goal, task & orientation elements
    - Ability and resource elements
    - Achievements & Progress elements
- Prototype UI improvements (invision, marvel app, adobe XD)
- Test UI improvements
- report on problems, improvements and test results (including interactive prototype)





# Spacial & Non spacial

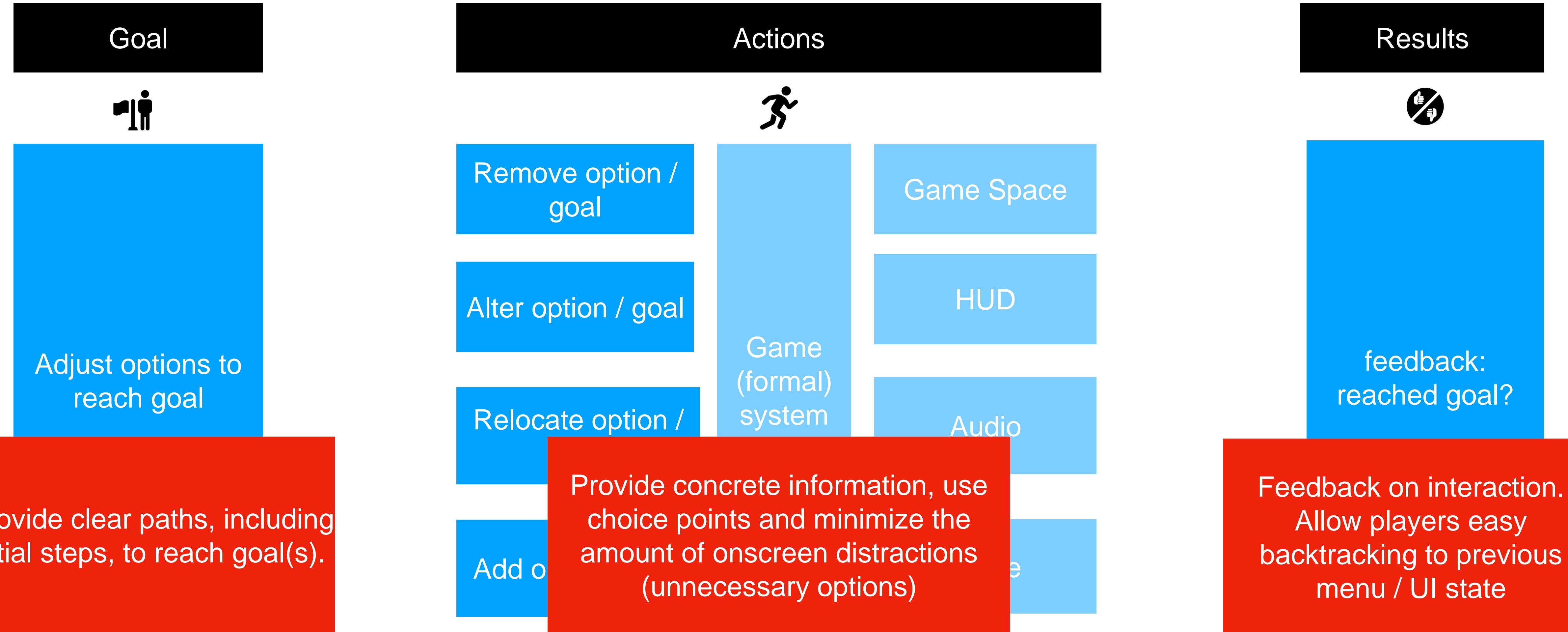
Ideate using spacial or non spacial



# Spacial & Non spacial



# Spacial & Non spacial

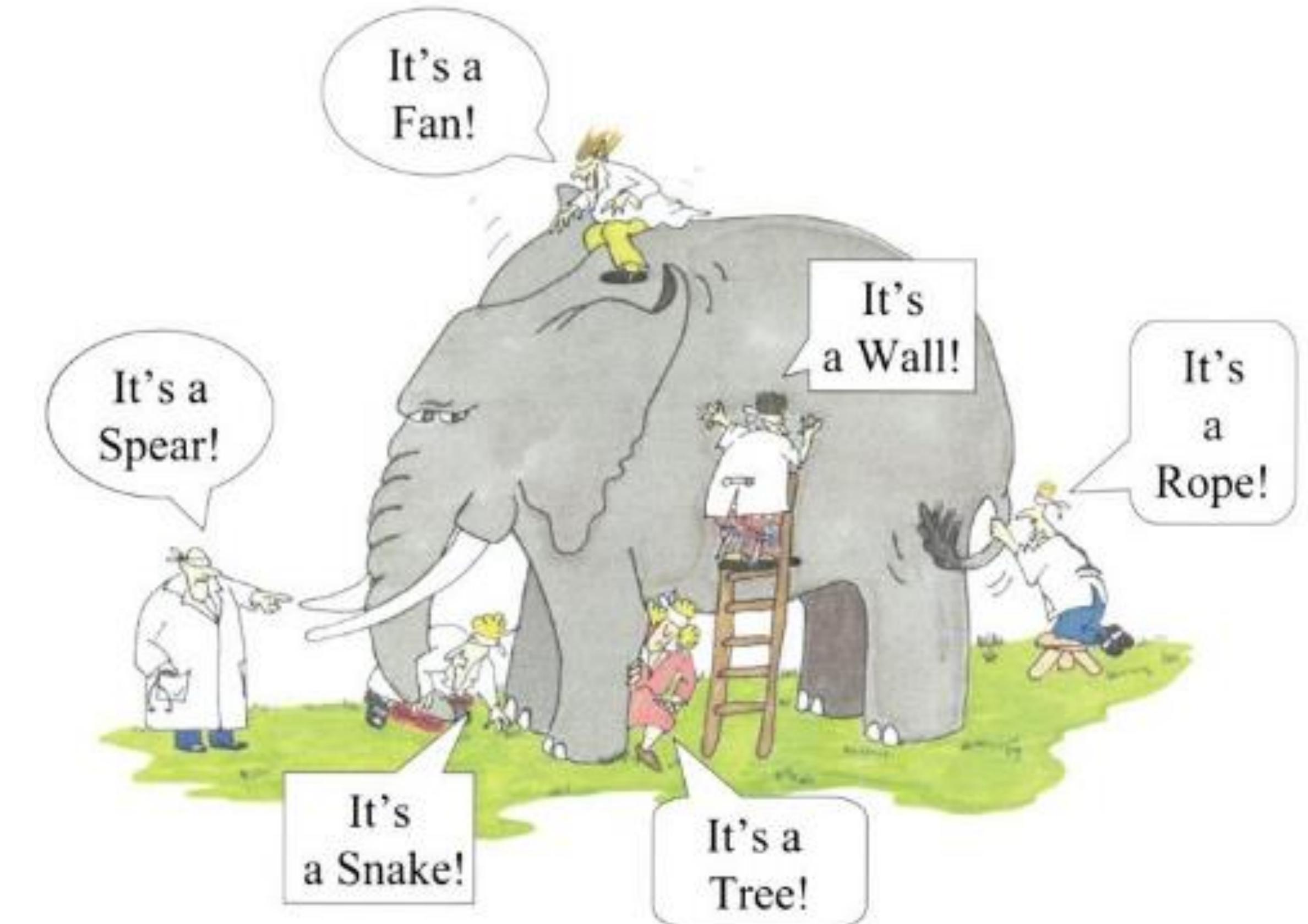


# Ideate on user journey

User experience of players: use heuristics!

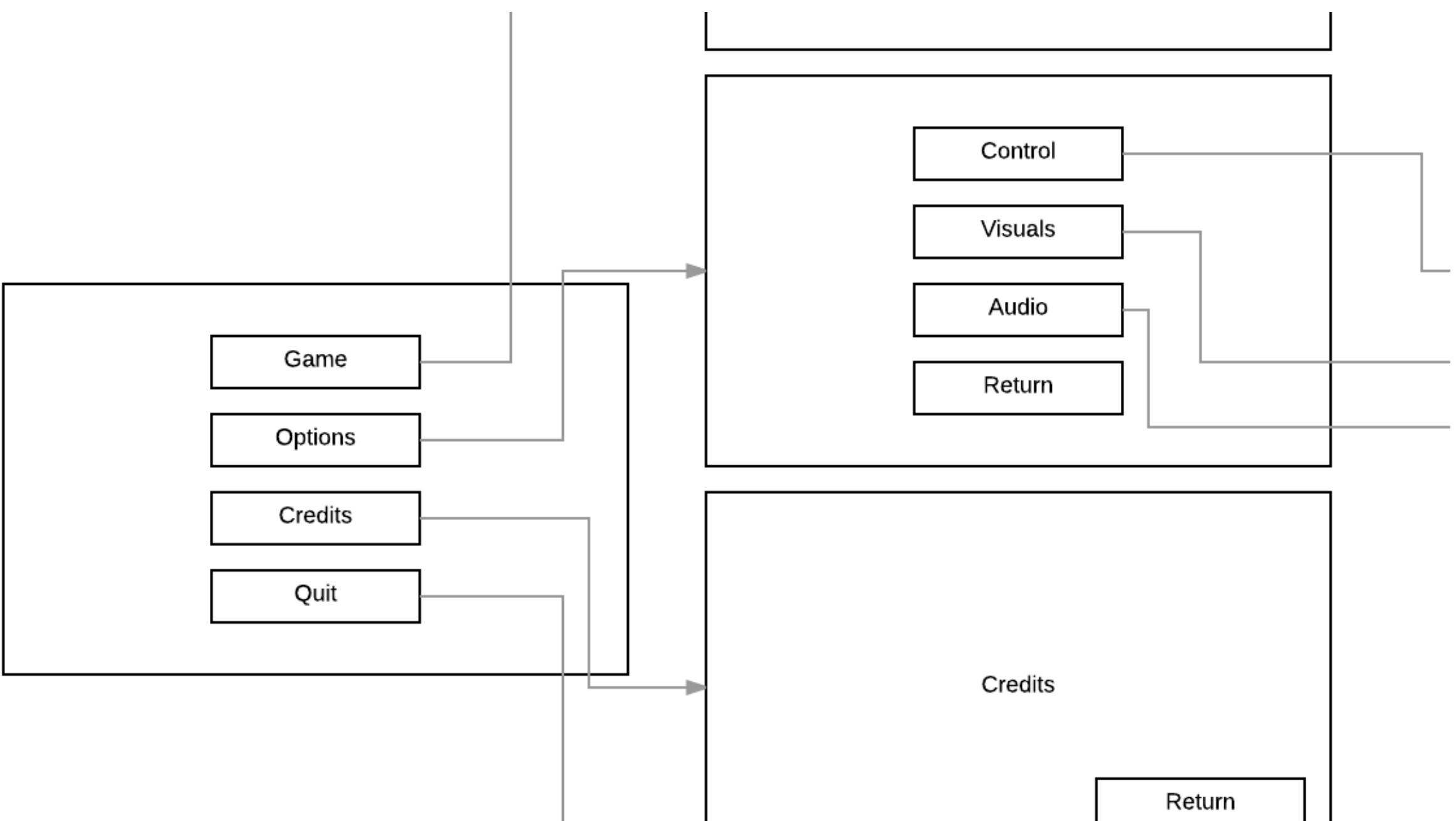
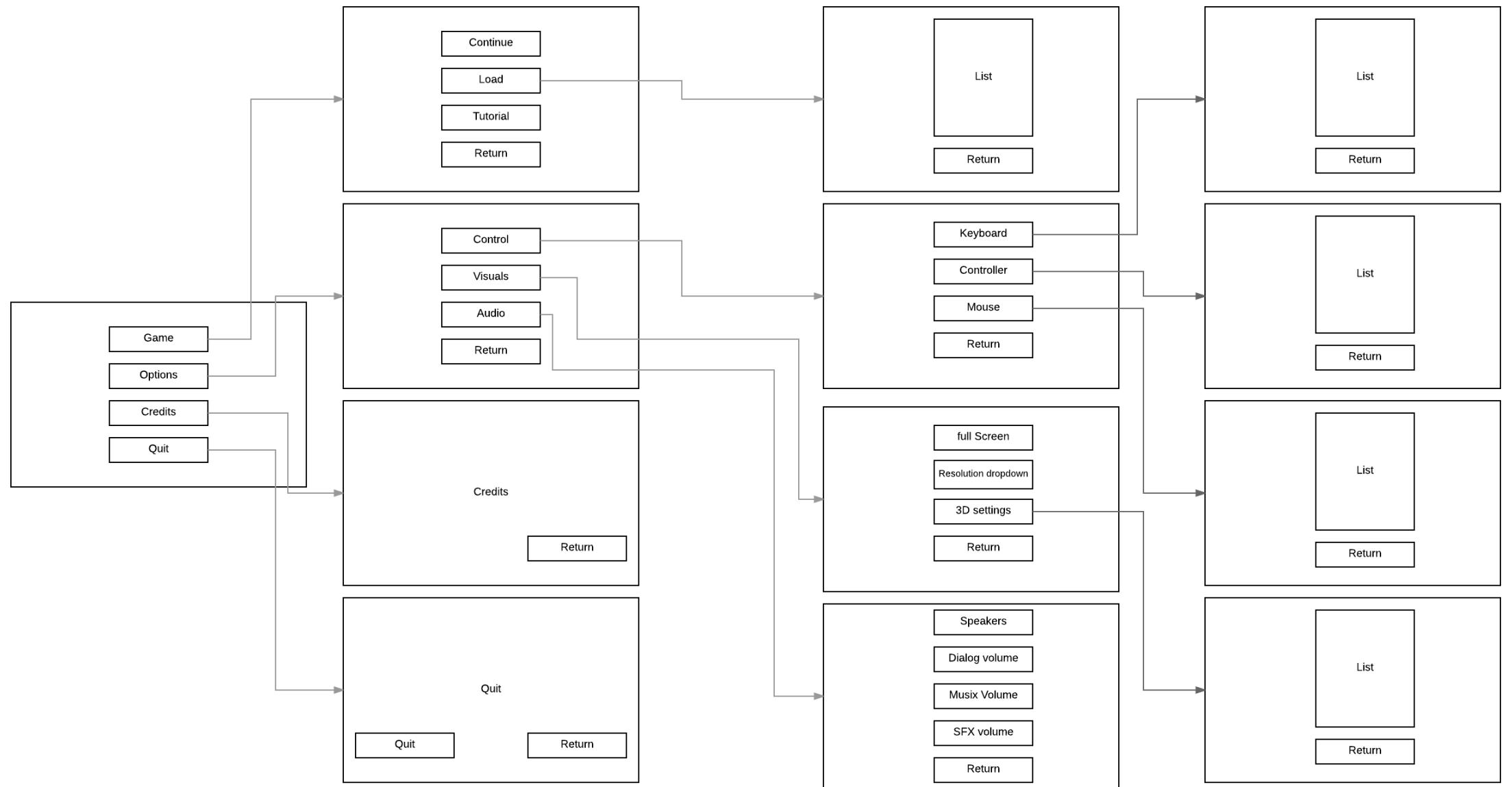
# User stories

- *Game menu / introduction*
  - As player I need to modify the game accessibility so I can interact using my current skills and hardware
- *Settings*
  - As player I want a manageable settings so I can interact with the game
- *Difficulty*
  - As player I want to alter difficulty so I can reach mastery and flow based on my skills

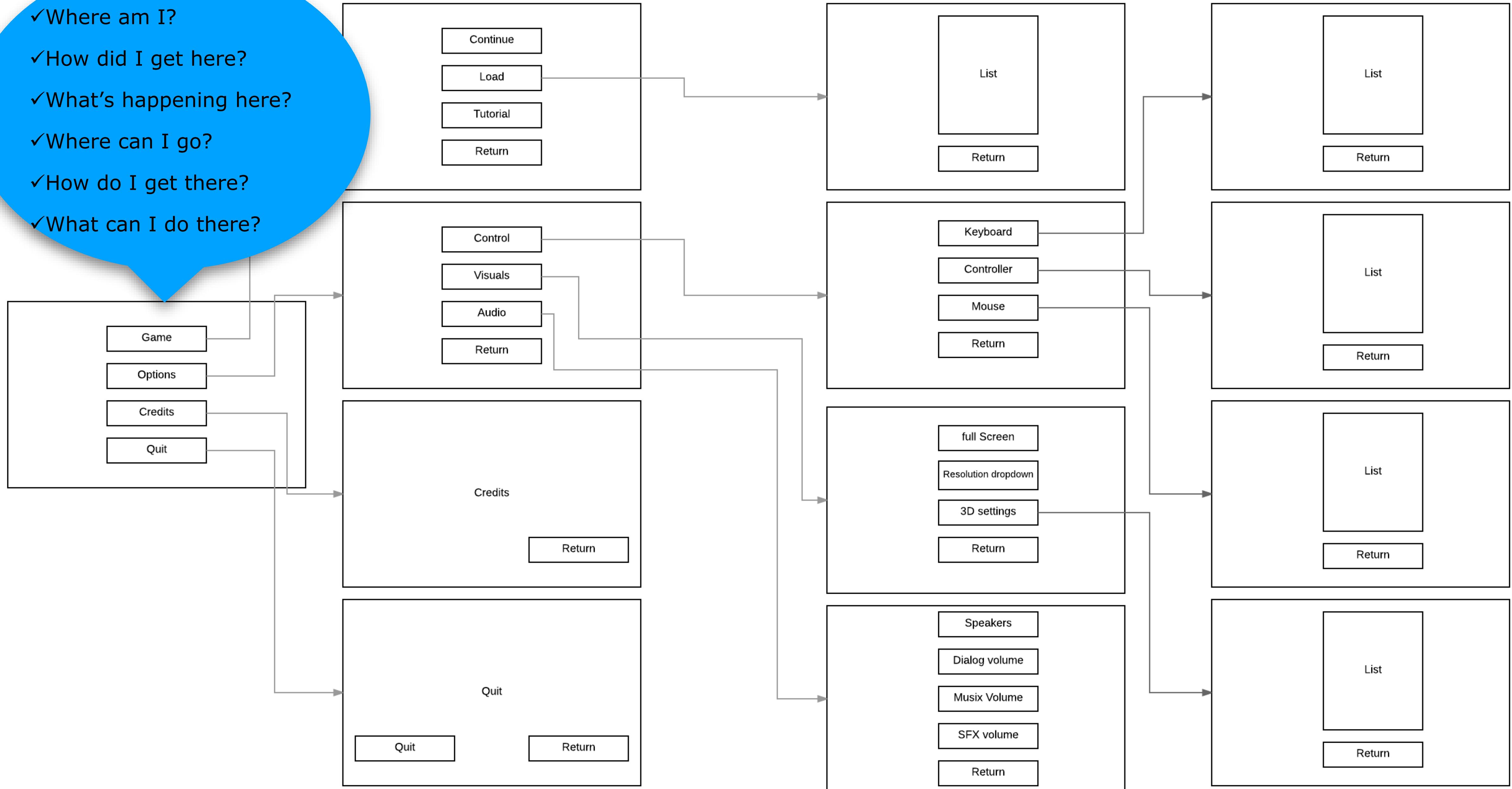


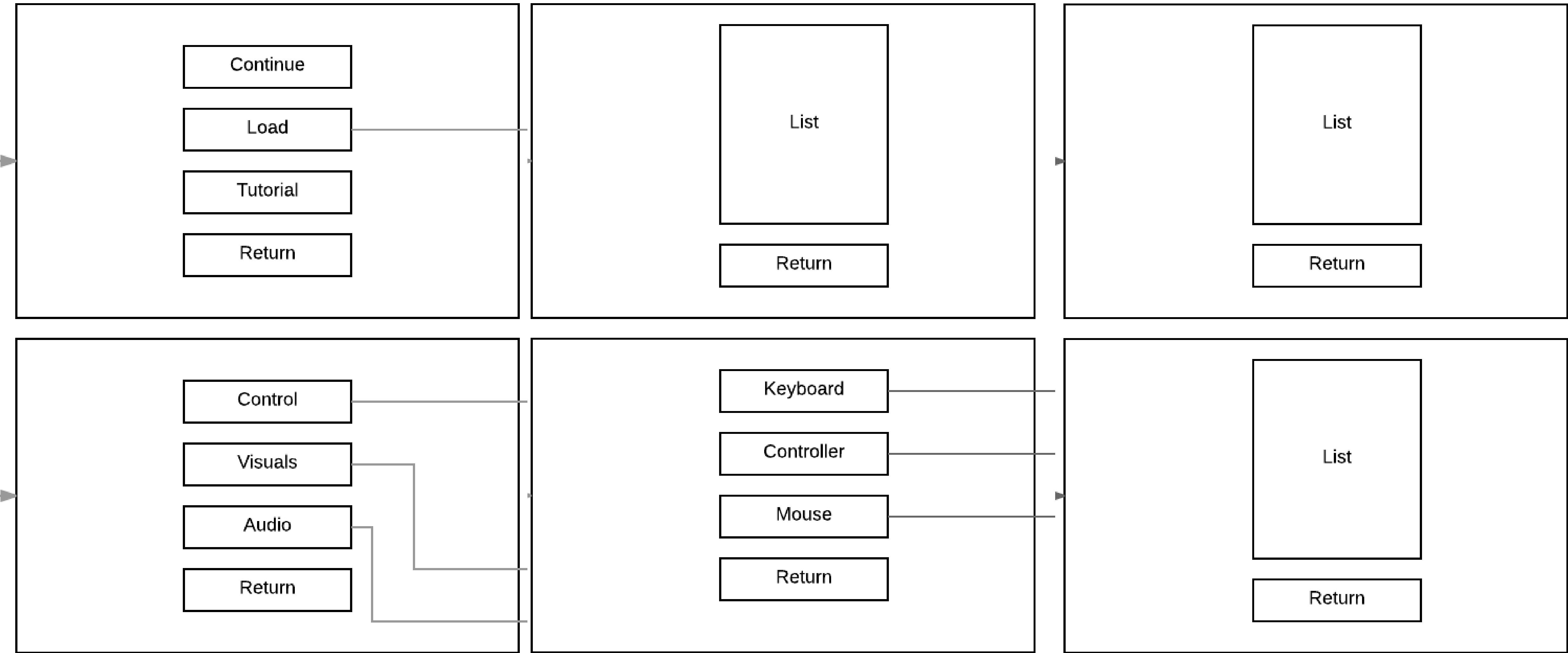
# Ideate using Wireframe

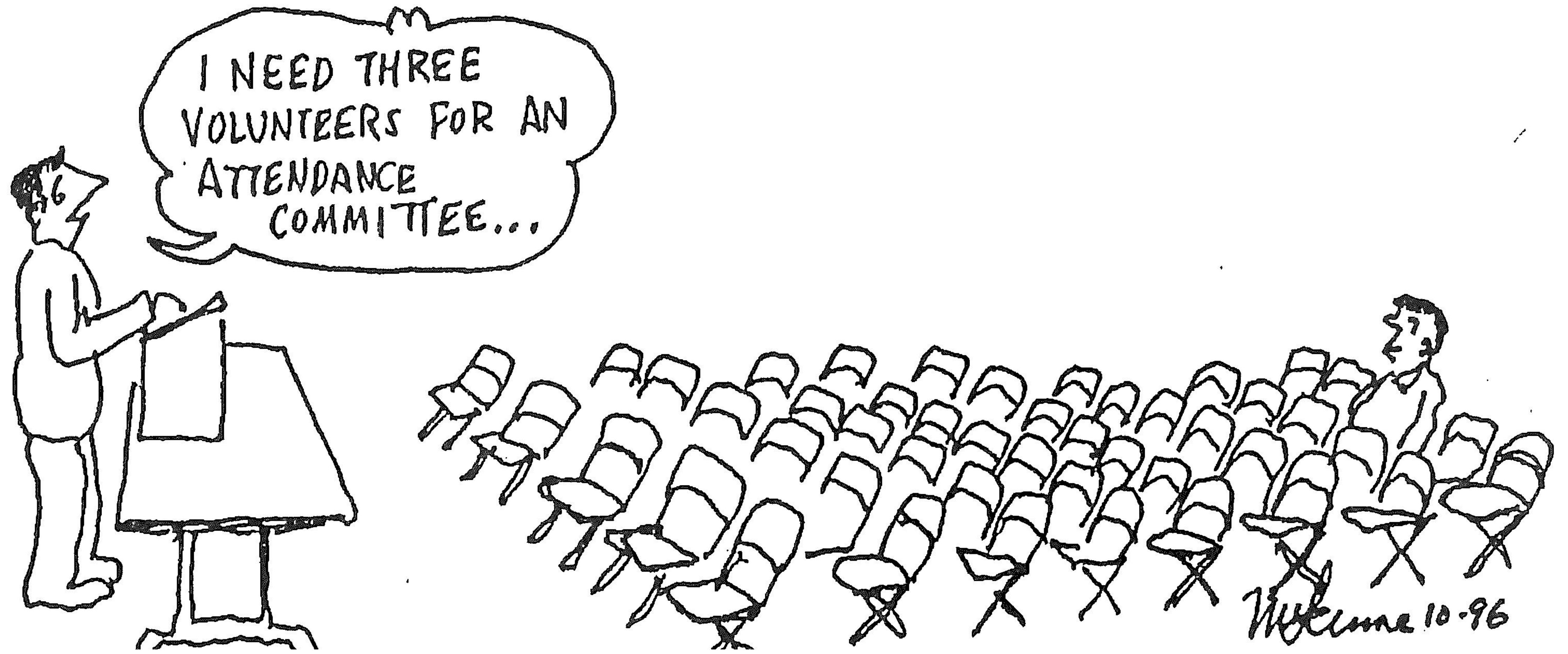
- Overview of menu structure
- Flow
- Pages, sub-pages



- ✓ Where am I?
- ✓ How did I get here?
- ✓ What's happening here?
- ✓ Where can I go?
- ✓ How do I get there?
- ✓ What can I do there?





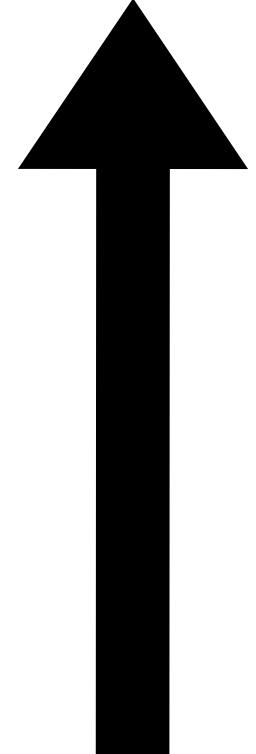


# Online experiment

Experiment #1: hit your target with your finger / mouse

Start here

How do I search on google ?



Hit the search icon  
Experiment 1

Start here

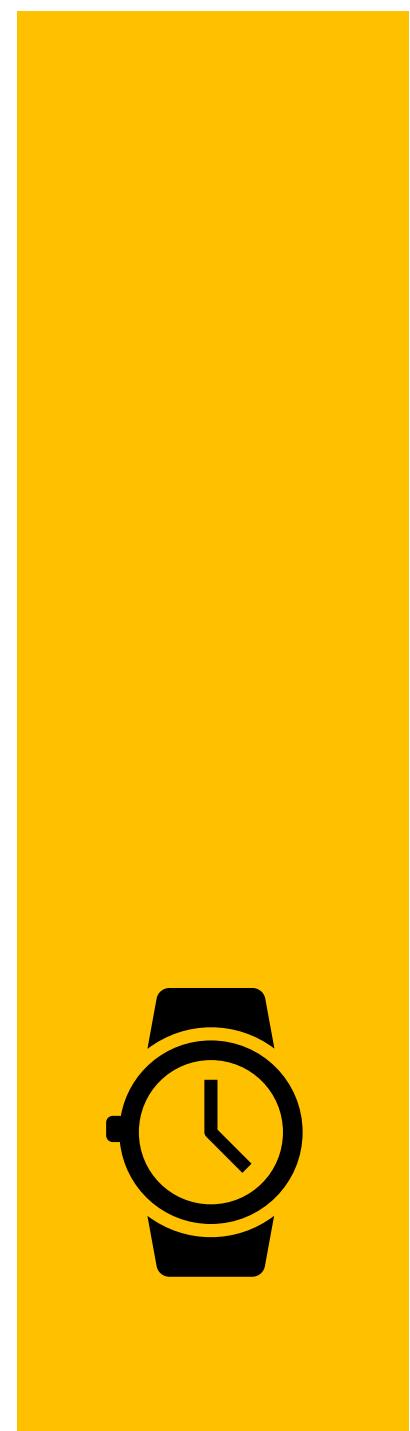
How do I search on google ?



Hit the search icon ↑  
Experiment 2



**Used time**



**Enormous unrealistically  
large search button**

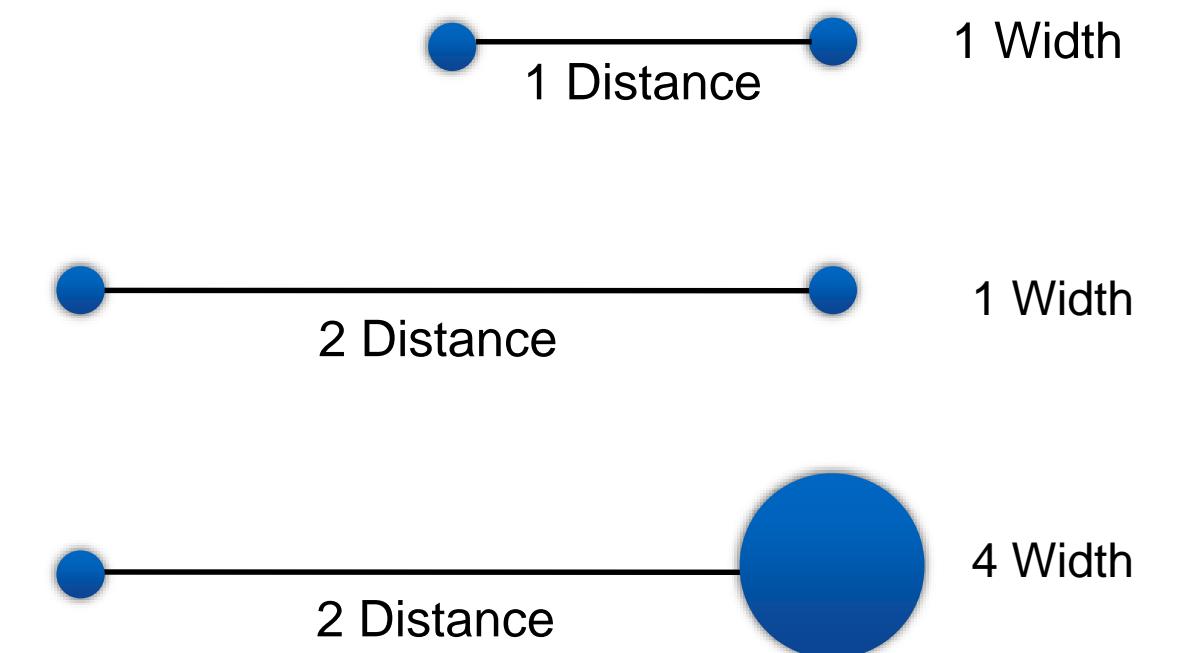
# Fitts Law

- It is faster to hit larger targets closer to you than it is to hit smaller targets further away from you
- Official Formula, not useful while designing UI
- Key indicators: size object and used time
- Poor man solution, inaccurate but useful
  - difficulty (2x1 distance )/1 Width = 2
  - difficulty (2x2 distance )/1 Width = 4
  - difficulty (2x2 distance )/4 Width = 1

$$T = a + b \log_2 \left( 1 + \frac{D}{W} \right)$$

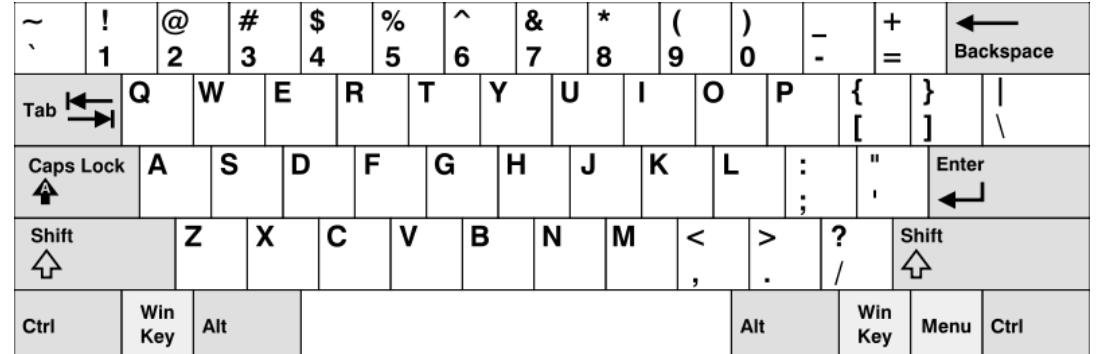
movement time  
speed of the device  
distance to target  
start/stop time of device  
width of target

$$\text{Difficulty} = \frac{2 \times \text{Distance}}{\text{Width}}$$

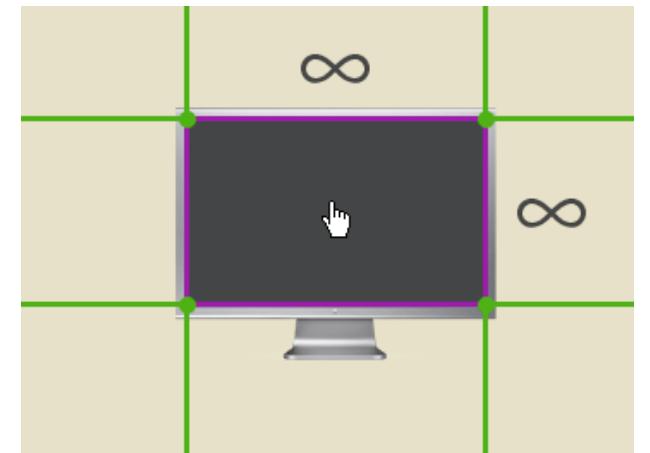


# Fitts Law

- Keyboard: important keys are Space, Backspace, Enter, Shift, caps lock, tab

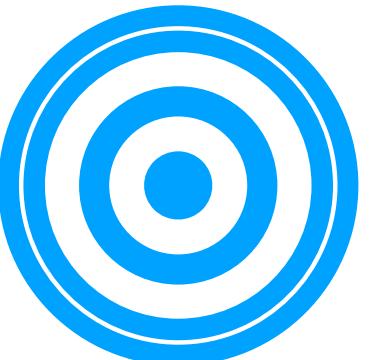
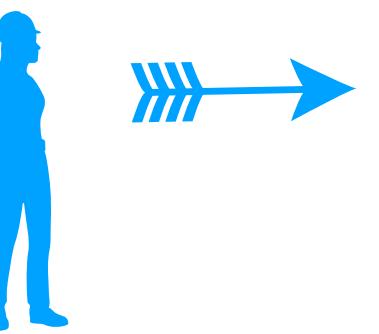


- Objects placed on the edges screen essentially have infinite width or height.

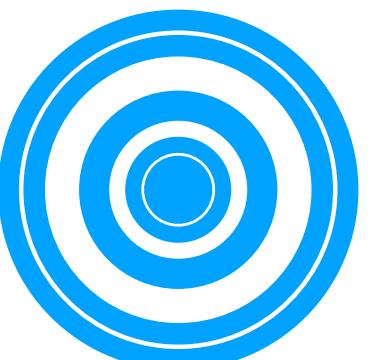
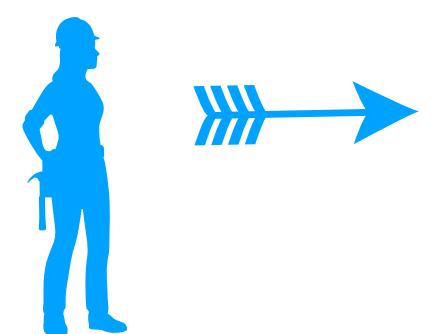


- Level design

- decrease or increase distance toward targets



- decrease or increase size of targets





Fitts Law

# Fitts law

## Menu options



# Experiment 3 & 4

Select player avatar

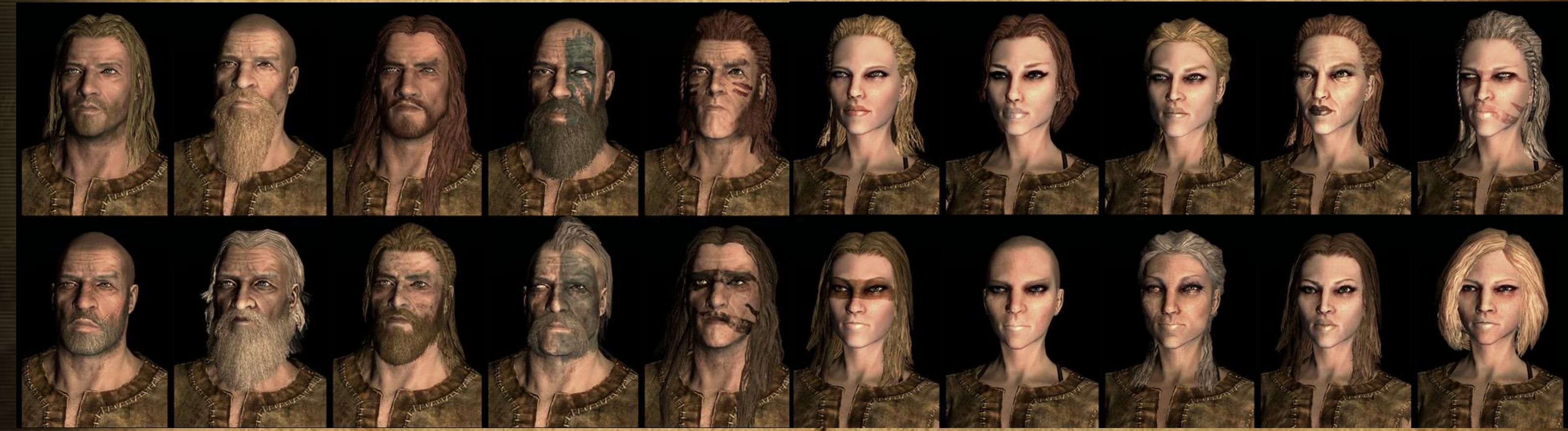
# Select your avatar



# Experiment #3

Volunteer #1

# Select your avatar

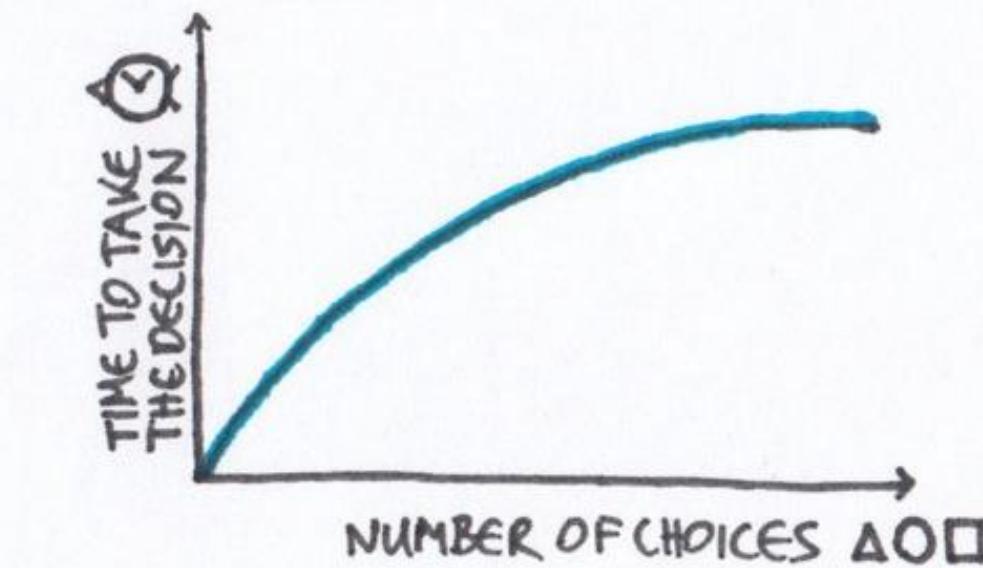
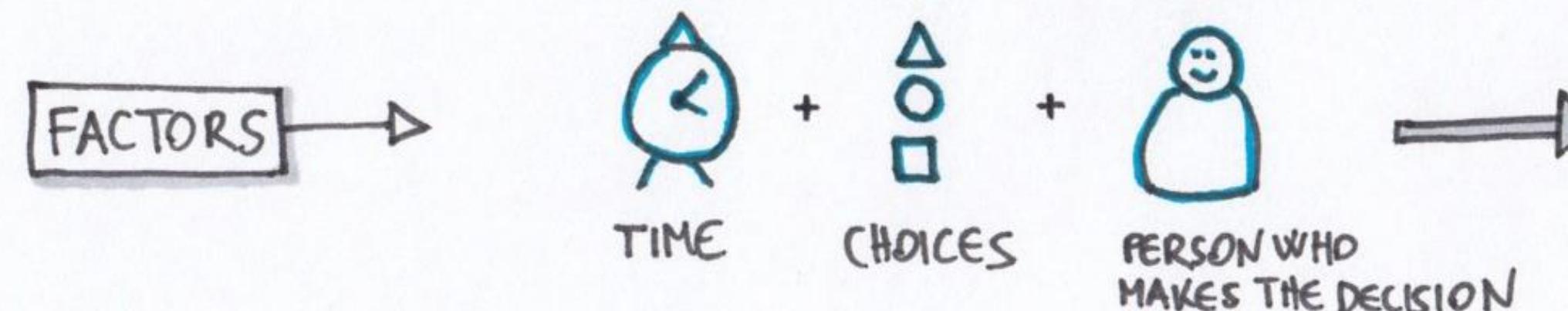


# Experiment #4

Volunteer #2

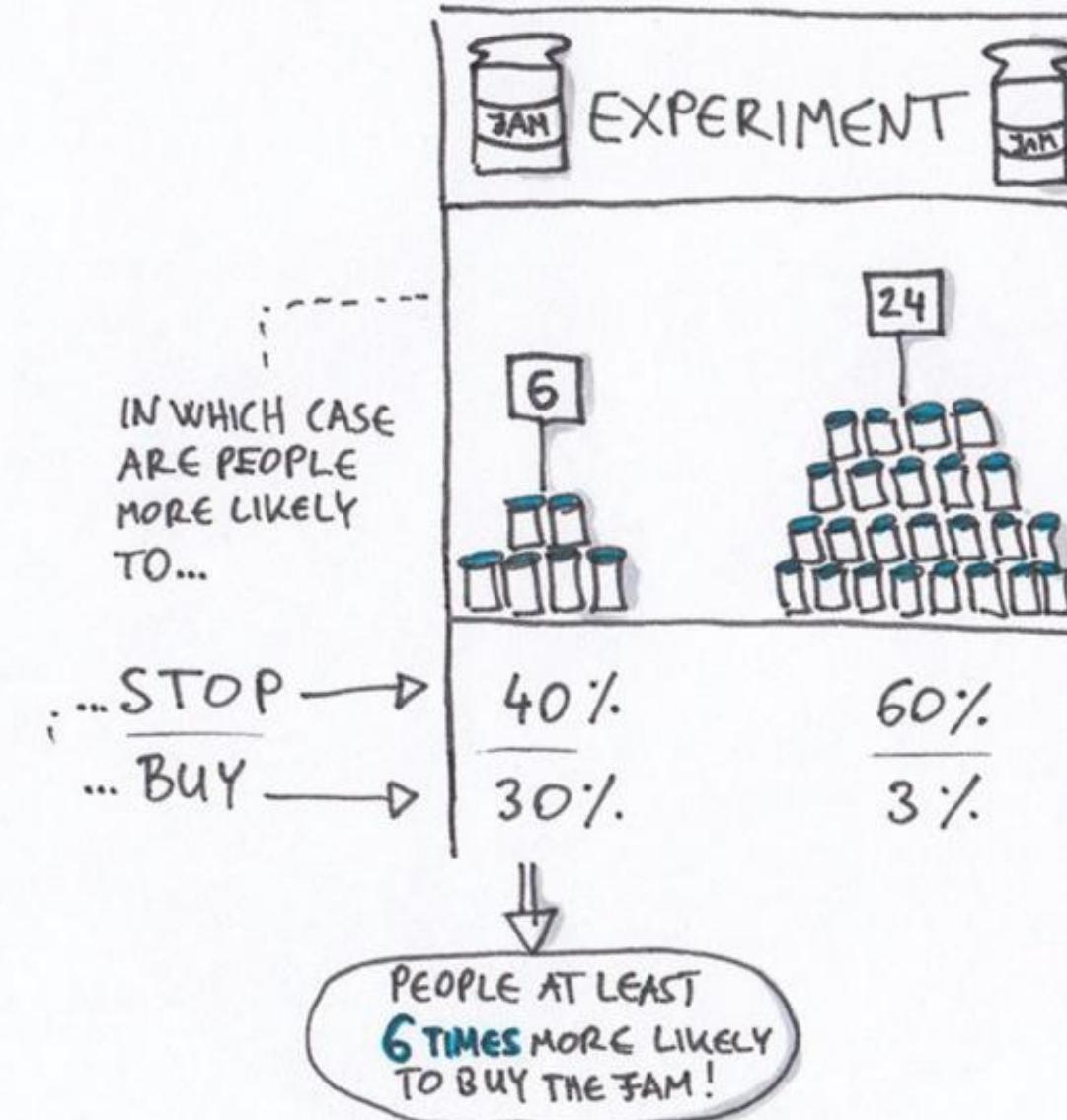
# HICK'S LAW

UX Knowledge-Base Sketch #5

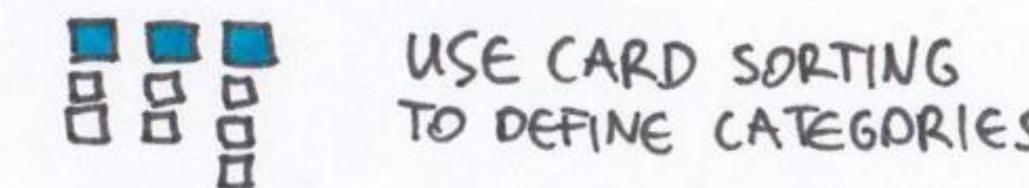


GOAL: REDUCE COMPLEXITY → DON'T OVERSIMPLIFY! ← BALANCE

## THE FAMOUS JAM EXPERIMENT



## HOW TO APPLY?



USE CARD SORTING TO DEFINE CATEGORIES



DIVIDE THE PROCESS INTO MANAGEABLE CHUNKS (~ PROGRESSIVE DISCLOSURE)



CAREFULLY DESIGNED INFORMATION ARCHITECTURE IS KEY!



HIDE THE OPTIONS ONLY FOR EXPERT USERS / EDGE CASES



MAKE THE MOST IMPORTANT OPTIONS STAND OUT!

INCREASING THE NUMBER OF CHOICES WILL INCREASE THE DECISION TIME LOGARITHMICALLY.



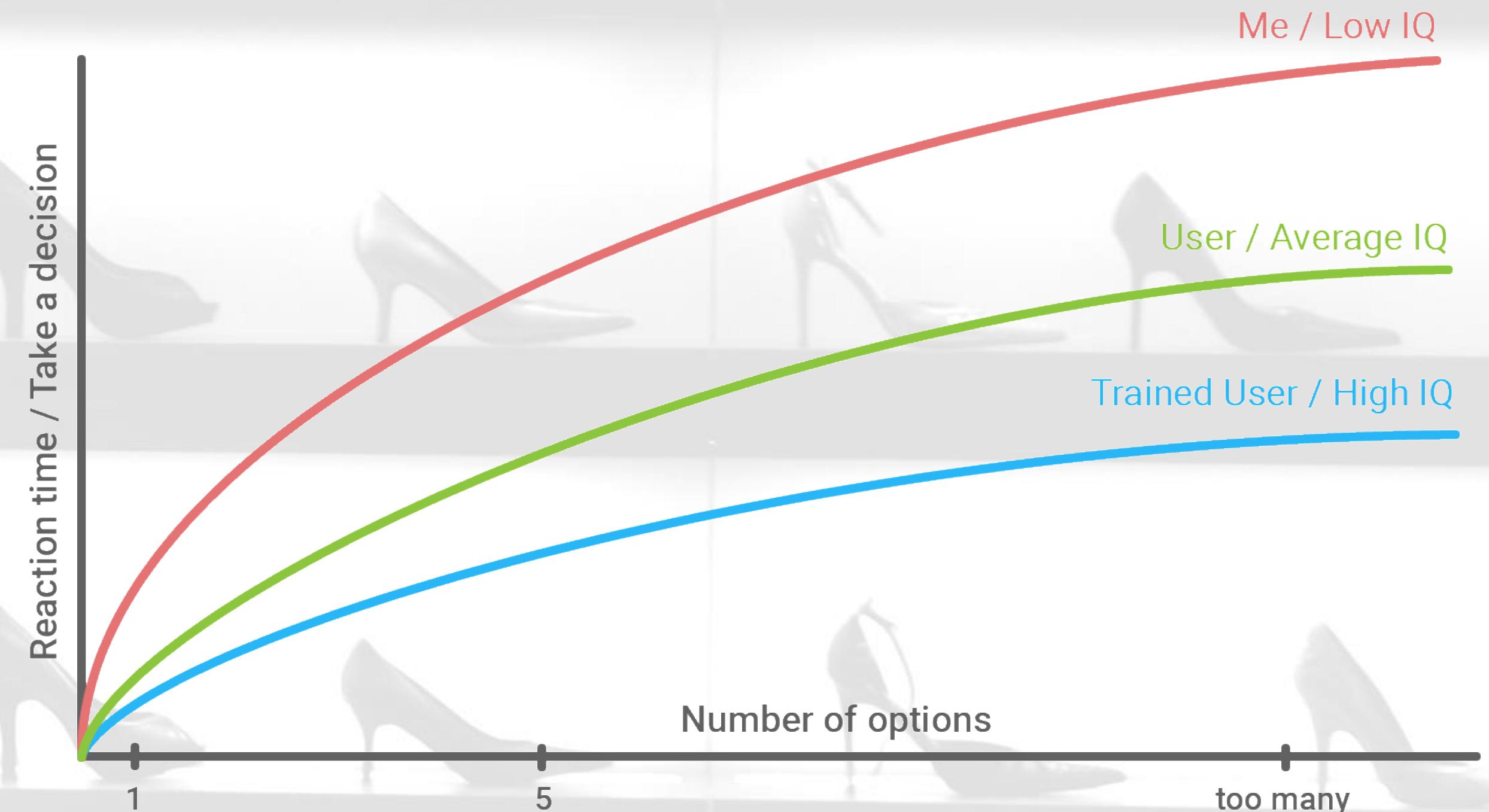
"BE CHOOSY ABOUT CHOOSING!"



SHEENA IYENGAR

# Hick's law & tips

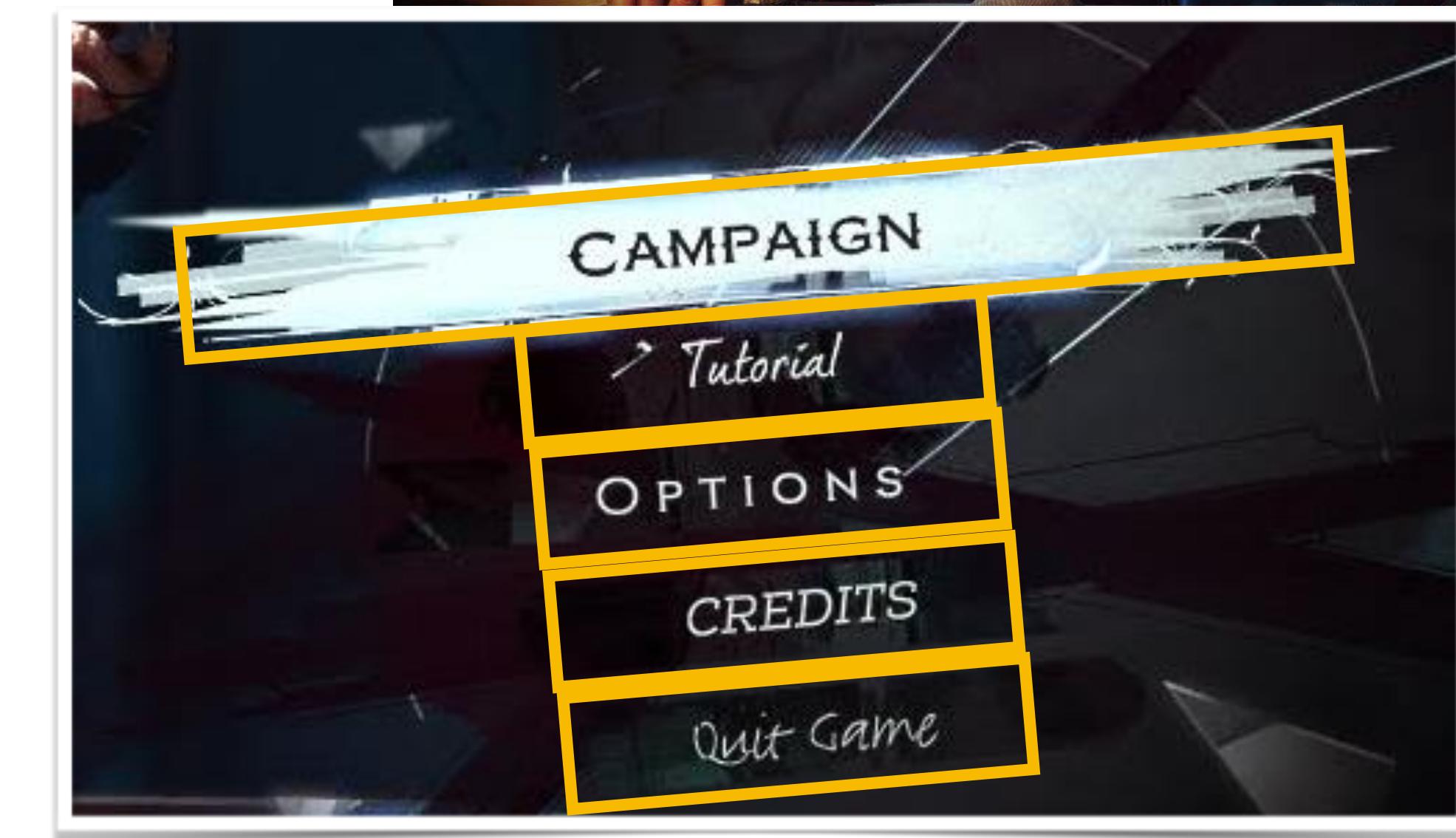
- the more choices you provide, the longer it will take to reach a decision
  - Minimize HUD and Menu objects and actions: use grouped task categories (progressive disclosure)
- Provide clear information: use choice points to guide player to their goals.
  - Western world reads left to right, top to bottom: Important choice(s) (ok / cancel) bottom right
- Use animation to communicate change
- Background is usually related to the overall task / category
- more onscreen options = Lower background clutter / distraction



OK

# How is hicks & fitts applied?

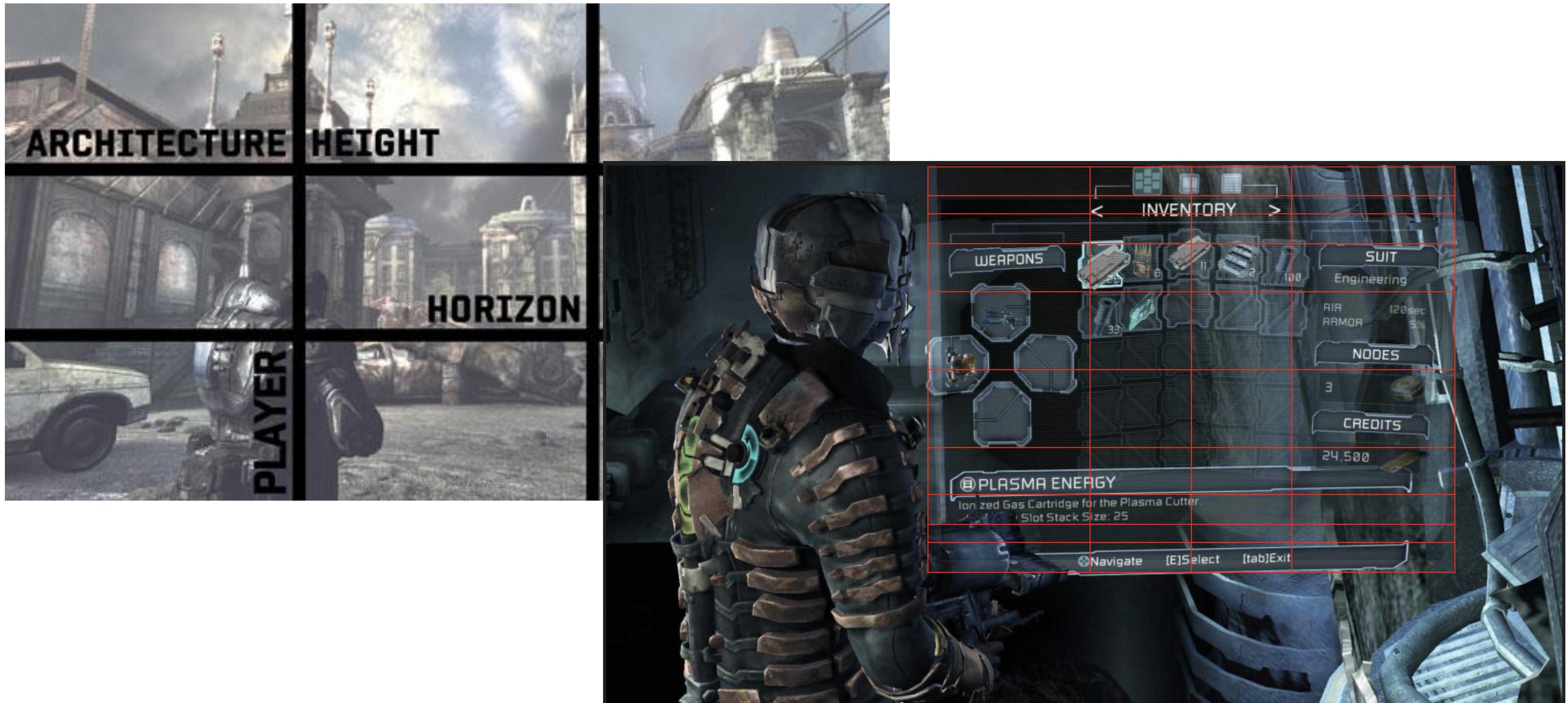
- Menu communicates atmosphere
  - main characters
- Hicks:
  - Restricted options based on task(s)
- Fitts
  - Selected option is bigger
  - Travel distance and size of other options are equal





# Golden Ratio / Phimatrix

## Composition rules



# Golden ratio



Hi man!

Hyman?

(<https://www.youtube.com/watch?v=pbTOzArcWQ>)

# Gestalt

- **Figure/Ground:**

- making the figure stand out from the background

- **Proximity:**

- grouped elements

- **Symmetry:**

- distance between options, mirrored composition

- **Similarity:**

- font and alignment (half life), color and rotation (dishonored)





# Hicks & Fitts law

Menu options (video)



# Group assignment: 5 minutes

Find 3 or more improvements



Fitts: important,  
selected

Fitts: Title and sub-title more  
important than menu?

Hicks:  
required options  
?

# Group assignment: 5 minutes

Find 3 or more improvements

# Lab #3 assignment: Ideate / Prototype

- Create update **MENU** Design (Wireframe / Mock-up)
- Make interactive prototype (use your wireframe)
- Test

Goal/Output #1	Easy to adjust audio/visual setting, select difficulty, start game
Input	
Assumptions	
Steps	
Success criteria	
Notes	

# Lab #4 assignment: Ideate / Prototype

- Create updated **UI** Wireframe / Mock-up
- Make interactive prototype (use your wireframe)
- Test

Goal/Output #1	Check your progression and resources, select specific ability to for the upcoming challenge
Input	
Assumptions	
Steps	
Success criteria	
Notes	

# LAB #3

- Empathise with the player
- Define menu & UI problems
- *Ideate (Wireframe) Game Menu*
- Testing / Feedback

✓Where am I?  
✓How did I get here?  
✓What's happening here?  
✓Where can I go?  
✓How do I get there?  
✓What can I do there?



The menu page

Quit

Start

# LAB #3

- Empathise with the player
- Define menu & UI problems
  - Lab assignment #3 : Pick a game with menu problems,
  - Define game menu problems
    - heuristics (goal-action-feedback), figure/ground, proximity, similarity, symmetry, Hicks, Fiits, Gestalt



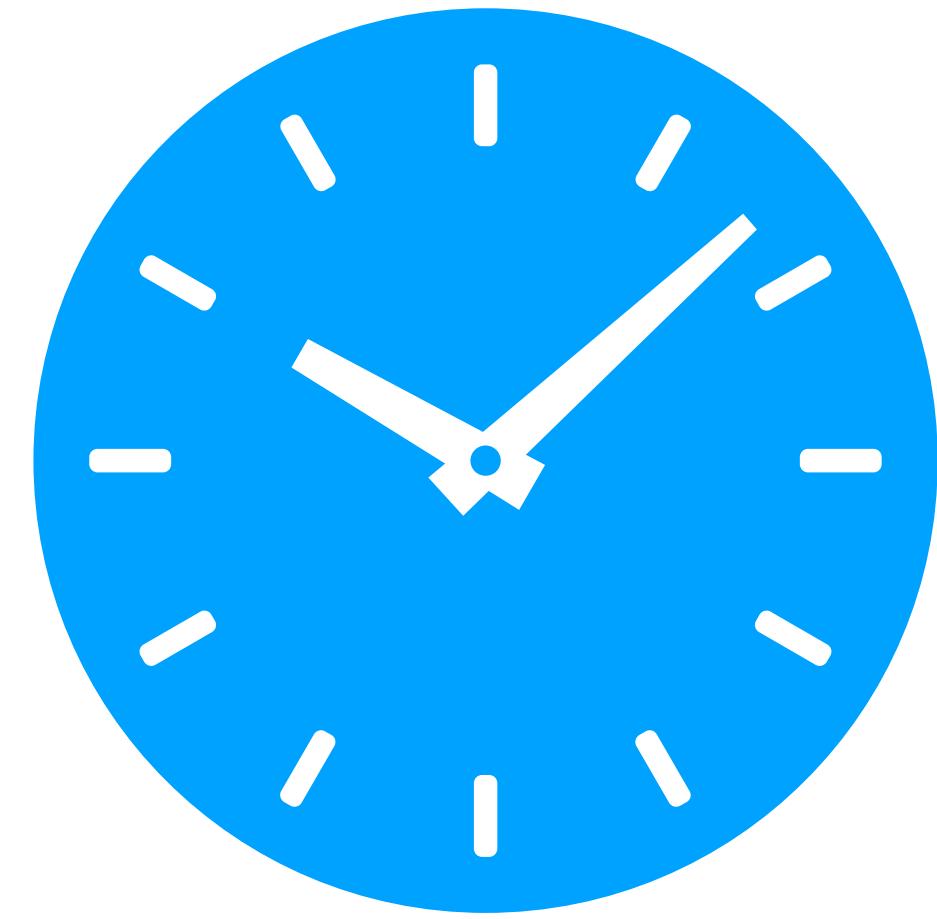
**30 minutes**

# Lab #3 assignment: empathize / define

Checkpoints	Describe Problems
Figure/ground	<i>unclear distance/segmentation between background &amp; interactive elements?</i>
Proximity	<i>are grouped elements close to each other?</i>
Similarity	<i>Grouped or linked elements using same font/shape, alignment, colour, position and rotation?</i>
Symmetry	<i>Symmetrical distance between options, mirrored, composition based on golden ratio?</i>
Hicks	<i>onscreen options are using clear task(s) / categories</i>
Fitts	<i>Selected/important option(s) are bigger, Travel distance and size of other options are equal (easy to reach)</i>

# LAB #3

- **Ideate (Wireframe) Game Menu**
  - Menu pages (lecture & lab 3)
    - Main & Game menu
    - Controls options
    - Sound and visual Options
- *Prototype* menu & UI improvements (invision, marvel app, adobe XD)
- Create test method and feedback / survey forms
- **Feedback during Lab #3 or 4**
  - *Test* menu & UI improvements (30 minutes)
    - Use interactive prototype(s)
    - report on problems, improvements and test results



**90 minutes**

# LAB #3

- **Feedback during Lab #3 or 4**
  - *Test* menu & UI improvements (30 minutes)
    - Use interactive prototype(s)
    - report on problems, improvements and test results



**30 minutes**

Click  
here

Click  
here



Click  
here



Click  
here

Click  
here

**End of lecture, click**



Click  
here



Click  
here