

Group C2.3

Mouse SkillsApp

Mouse Learning Game: Brain Teasers to Retain
Attention and Improve mouse skills



"Solution for people with difficulties to learn how to use a mouse. A need exists to design and program a versatile, attention-grabbing, mouse training game to teach people of all backgrounds computer knowledge, including those with mental and physical disabilities. These skills learned from the mouse game are to be later applied to their everyday tasks and internet activities using personalizable mouse training web applications."

Problem Statement



Uncovering Customer Needs

The Key to Delivering
Exceptional Experiences



Teach fundamental mouse skills : left click, right click, double-clicking, scrolling, dragging, text selection (5)

Learning fundamental mouse skills is the main goal of this web application as stated in the mandate

Not childish: Age appropriate(5)

The client placed great emphasis on not making this solution childish

Designed for people who have little to no mouse skills (5)

To accommodate for a large range of skill sets, capabilities and disabilities

Simple content and easy to understand (5)



Uncovering Customer Needs

The Power of Empathy:
Understanding Customer
Needs at a Deeper Level



Accomodate visually in writing size and color (4)

Mention of visual difficulties especially concerning color, contrast as well as font size

Has a visual demonstration of instructions (4)

Help users gain more independence with their mouse skills (4)

More Needs Identified :

Can retain the user's attention span for a long duration (3)

Different levels of difficulties (3)

Accommodate with Audio (2)

Software to install (1)

Accommodate for different attention spans (3)

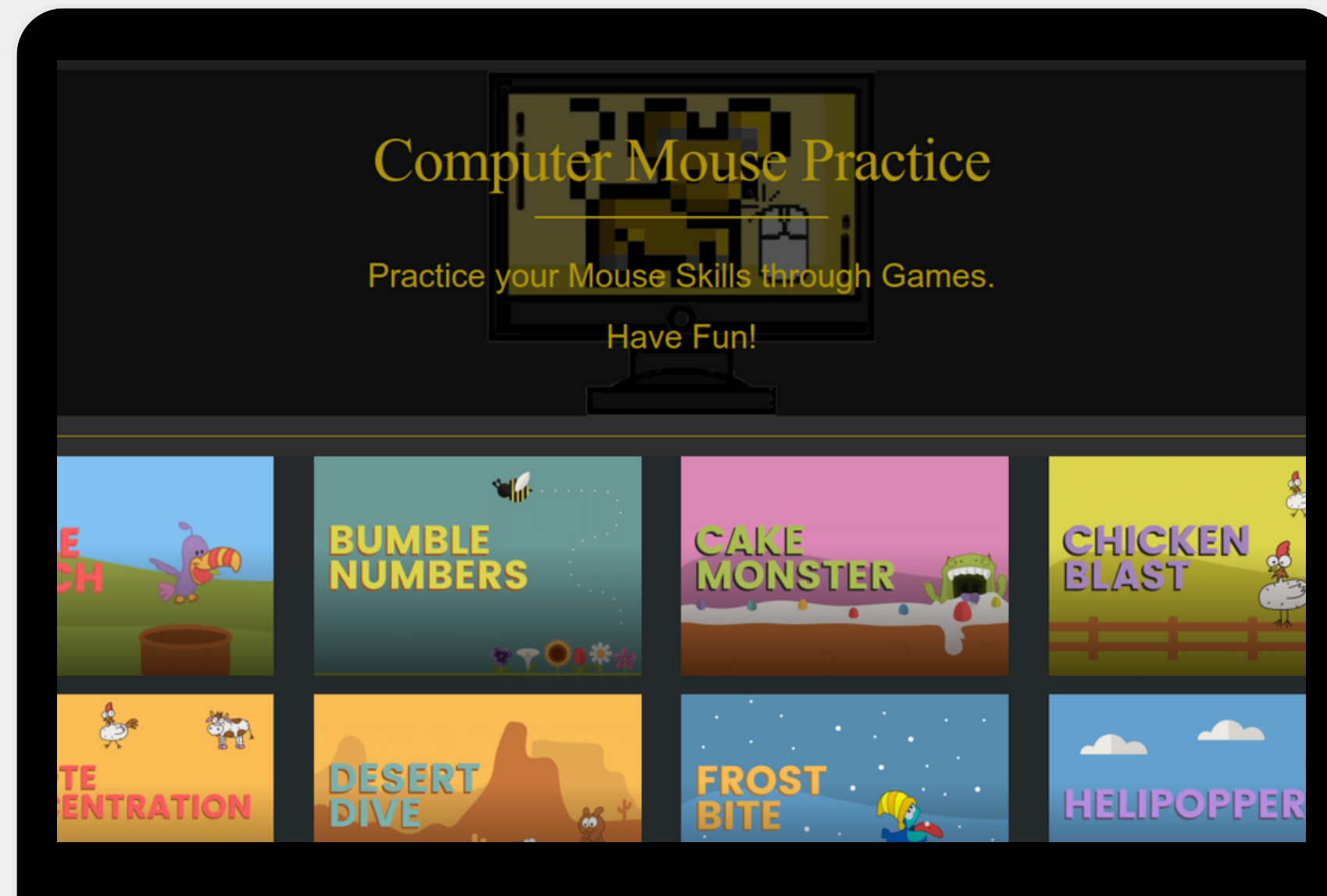
Benchmarking

Comprehensive Benchmarking Analysis

01 Kids Games

02 Requires a pre-understanding of how the mouse works

03 A small range of Mouse functions

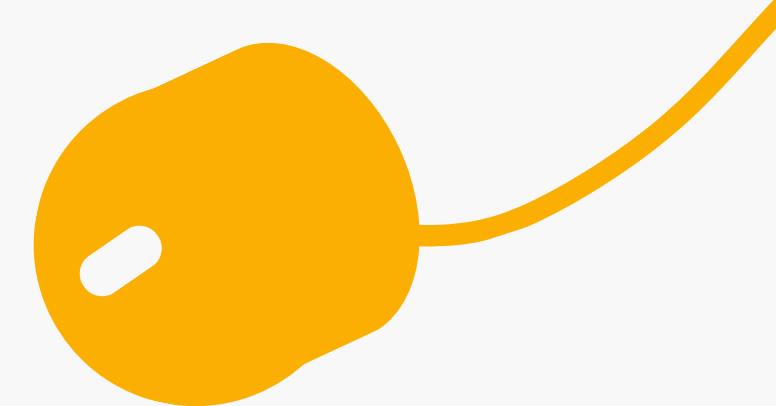


06 Increasing level of difficulty and repetition

05 Involved multiple lessons and levels

04 Different game type including, Cognitive skills Games, never-ending games

Target Specifications



Needs	Metric / criteria	Specification	unit
Teach fundamental mouse skills (left click, right click, scroll, dragging, text selections and combination of movements)	Multiple functions	Yes	Binary (Yes/No)
Not childish : Age appropriate	Age appropriate	Yes	Binary (Yes/No)
	Age range	20-70	Years
Can retain user’s attention span for a long duration	retention rate		time
Has a visual demonstration of instructions	Visual Demonstration	Yes	Binary (Yes/No)
	Caption for videos	Yes	Binary (Yes/No)
Designed for people who have little to no mouse skills	For beginners	Yes	Binary (Yes/No)
Different levels of difficulties	Levels	>= 6	Levels
Accommodate with Audio	Audio	Yes/No	Binary (Yes/No)



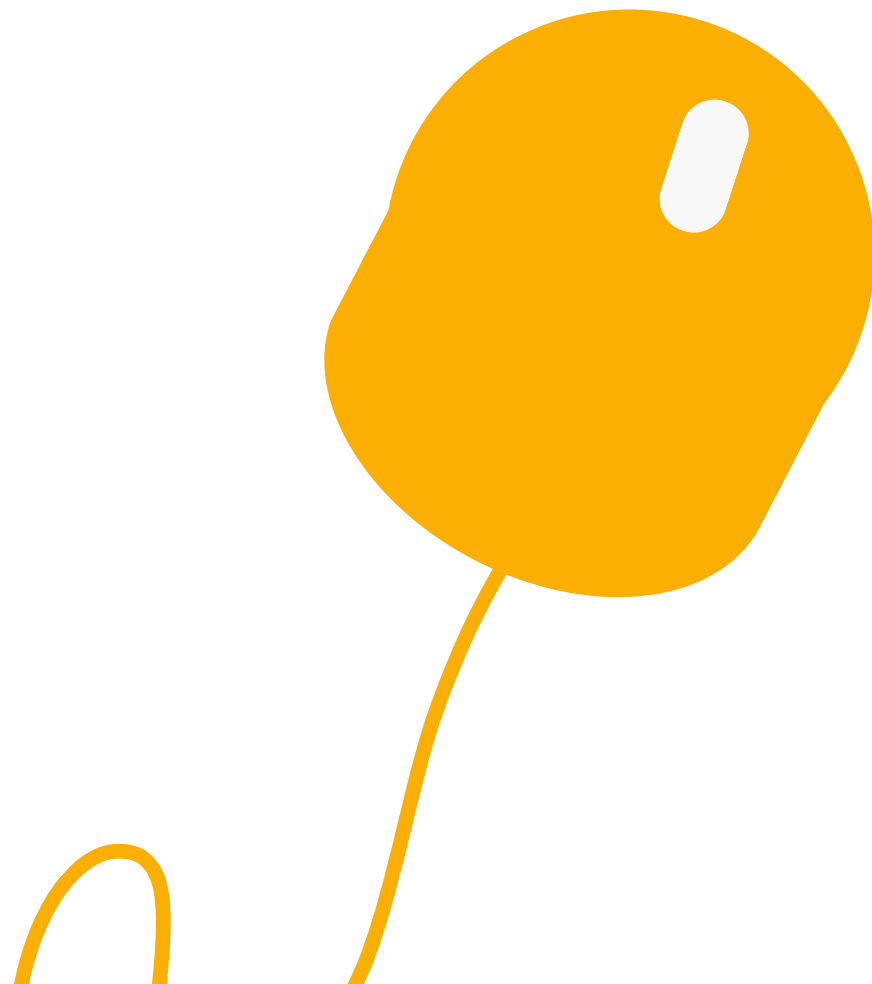
Target Specifications

Needs	Metric / criteria	Specification	unit
A software to install	software	No	Binary (Yes/No)
Accommodate visually the users writing size(font)	font size	30	pts
	Sentence length	< 75	characters
Simple content and easy to understand	Customer survey	1-5	scale
	Task Success Rate (number of attempts / total number of attempts)(shows the percentage of participants that successfully complete)	1-10	percent
Accommodate visually the users in term of color, and contrast	colors contrast (WebAIM's color contrast checker)	4:5:1 normal text	ratio
	brightness		levels
Help users gain more independence with their mouse skills	mouse sensitivity	800 +/- (500)	DPI
Accommodate for different attention spans	Maximum duration	15 - 30 mins	Minutes (mins)



Analysis Concepts

How it's impacting commerce in a big way.



Individual assesment against Metrics and target Specifications

Using a weighted scale, we have analyzed our concepts in a non-biased manner by analyzing a concept that is not our own

Team Evalution

the team discussed each concept looking at their relative pros and cons. The most and least appreciated aspects of each concept were also discussed.

Final Vote Top Concept

The top 3 were presented to the client to get his opinion and thus make a final decision





3 Major Concepts

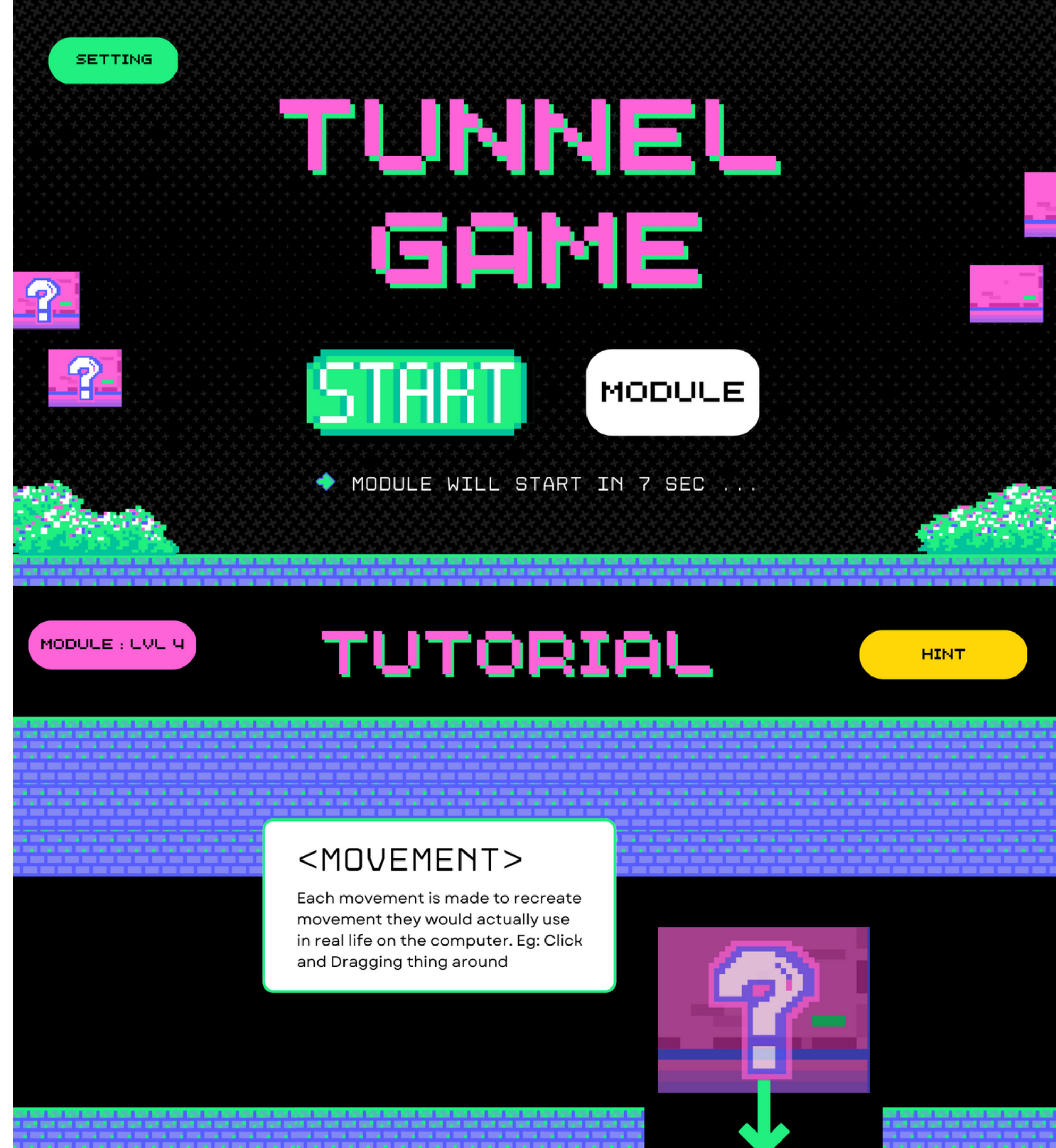
After analyzing all of the concepts generated by the team members, the team came up with three final solutions that were presented to the client.



Concept 1

Tunnel Game

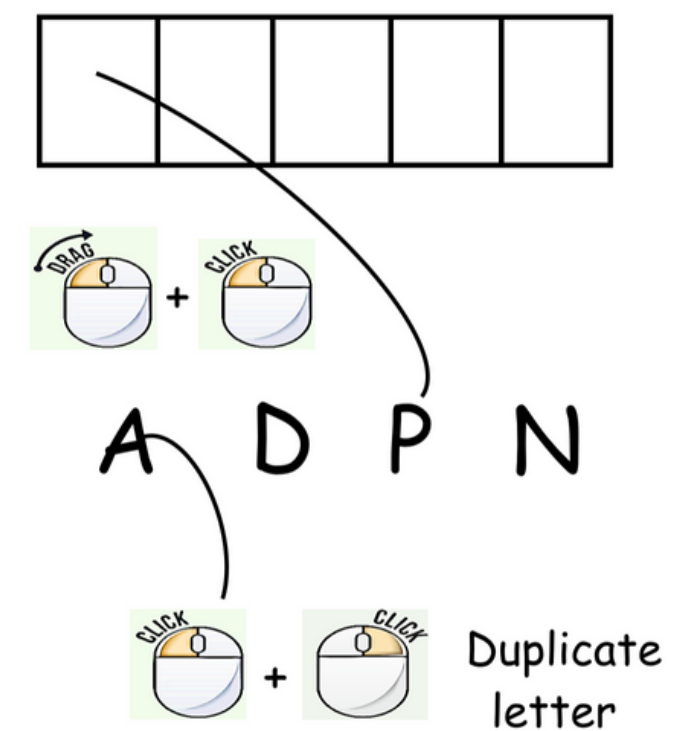
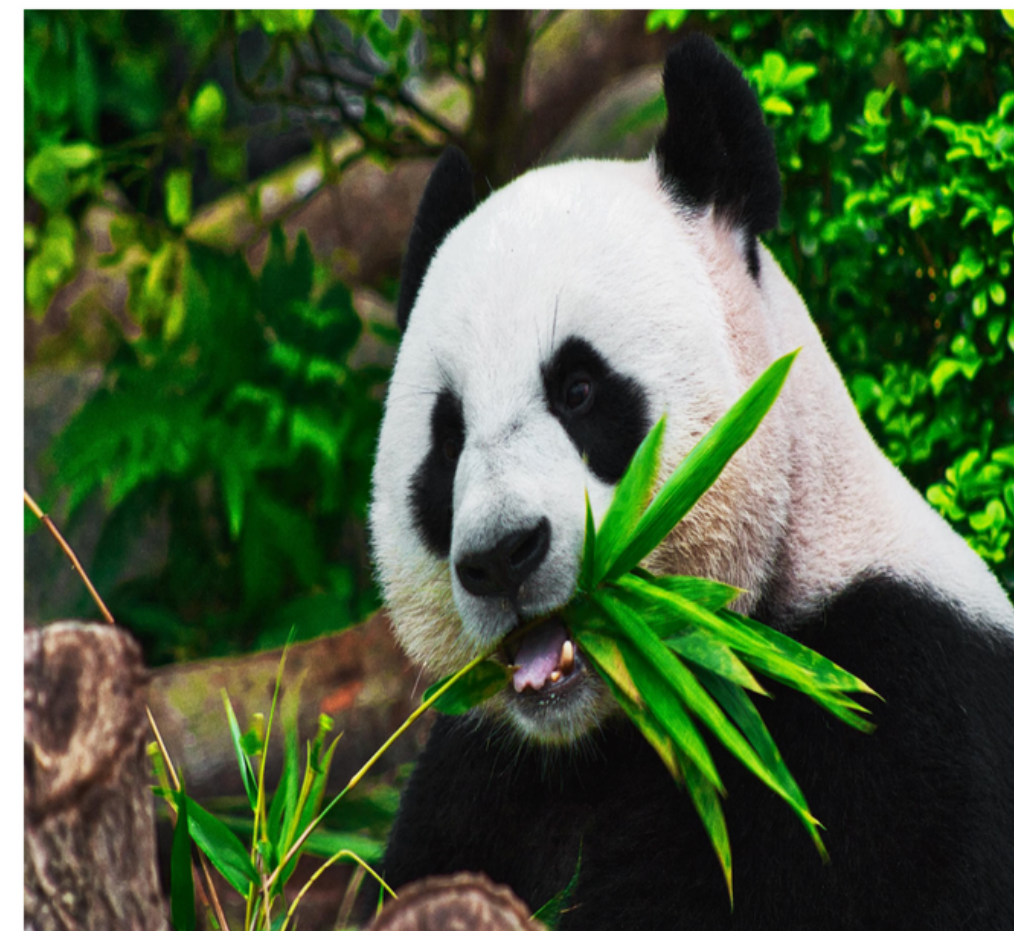
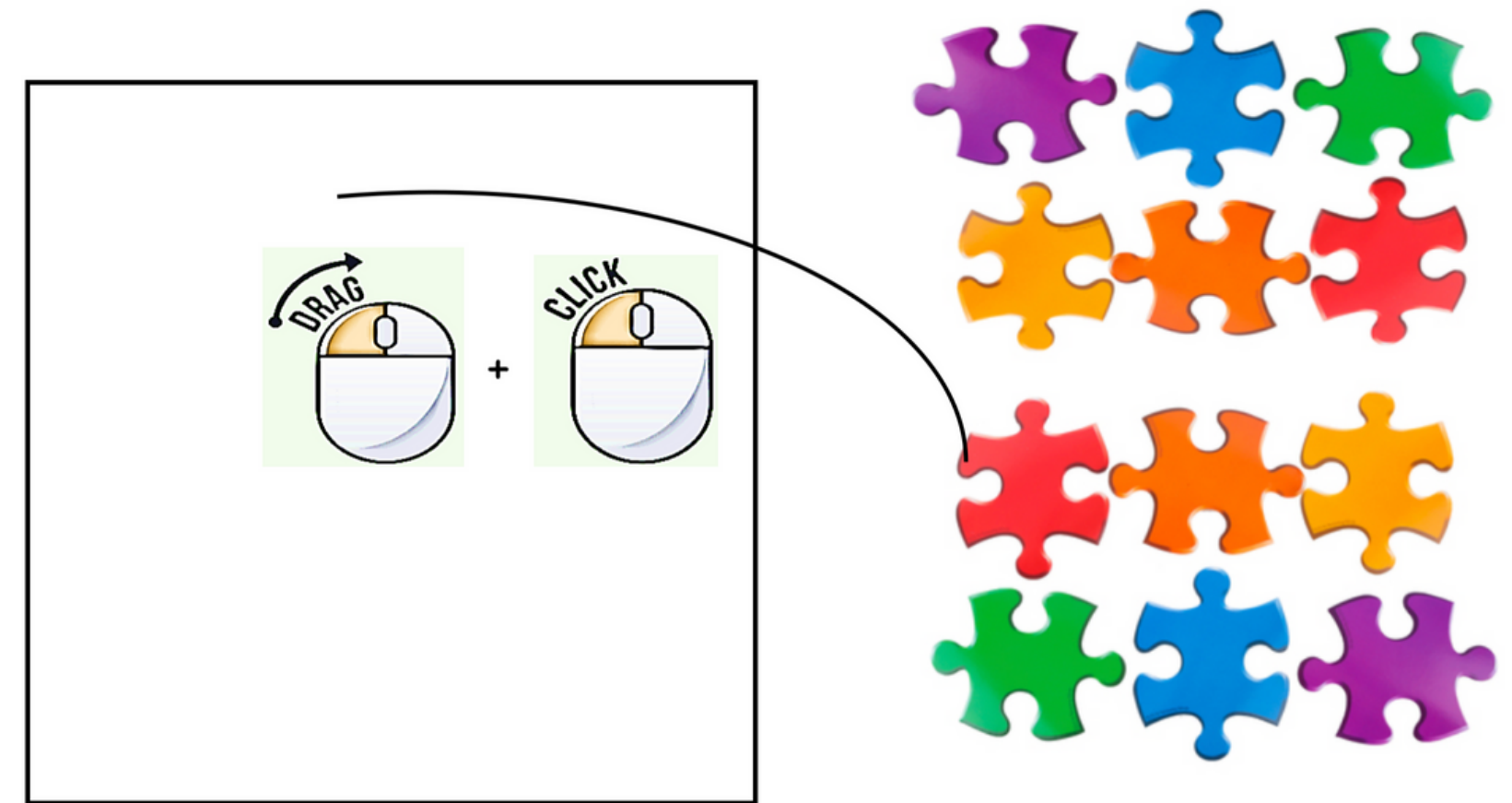
1. Combination of tunnel game and tutorial concept
2. Includes both game and tutorial modules
3. Covers basic to complex mouse actions with video, captions, and auditory assistance
4. Increasing levels of difficulty using real-life mouse movements
5. Players progress by collecting items and mastering mouse skills in a fun and interactive way.



Concept 2

Puzzle Based Game

1. The game is a brain teaser to retain the user's attention.
2. Tutorial video for basic mouse functions.
3. Progressive puzzle-solving levels with increasing difficulty.
4. Use of mouse functions (left-click, drag, right-click) to manipulate puzzle pieces.
5. Adjustable settings (audio, contrast, font size) for a comfortable learning experience.



Concept 3

Minecart escape



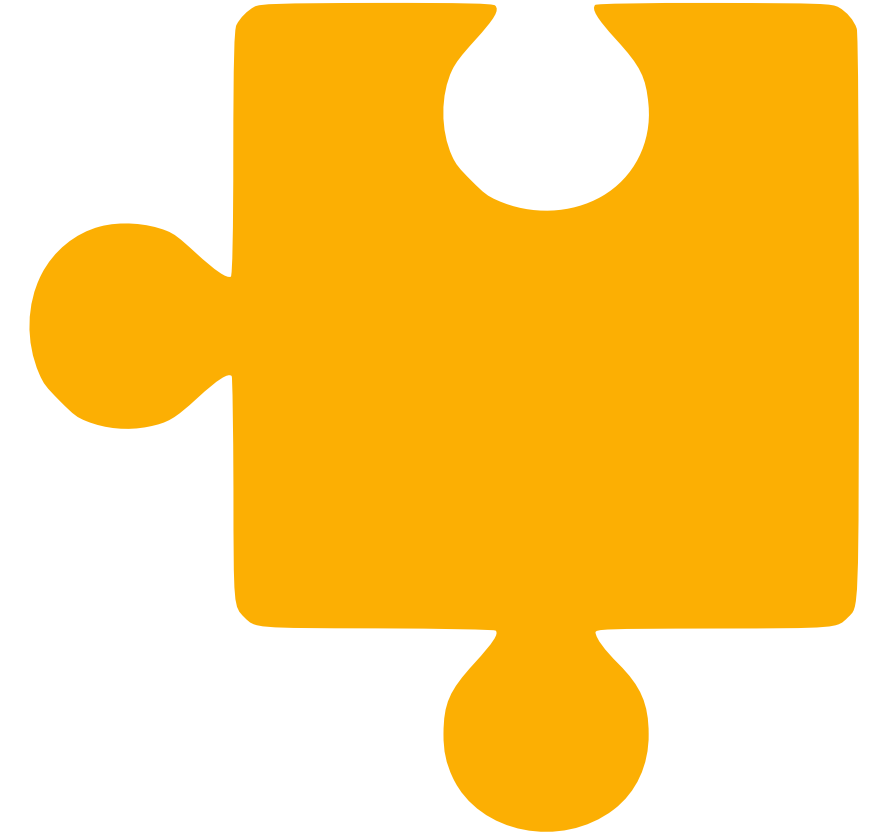
1. Objective is to escape a collapsing coal mine
2. Gameplay involves using the correct mouse function to overcome obstacles in an automatically running minecart
3. Character customization and display of required mouse function for each obstacle
4. Game speed increases as player progresses, challenging reaction speed
5. Inclusive design allows certain mouse functions to be turned off for a slower pace of learning.



"Puzzle-Based Mouse Learning Game with Adjustable Settings to Improve Functionality & Keep User Engaged while Familiarizing with Basic Mouse Skills"

SubSections

Different settings will also be included to ensure the user learns comfortably. Namely, audio, contrast and font size settings will be included and the user will have the possibility to change the settings anytime during the game.



Modules

- Application automatically takes users to the first module after 10 seconds of inactivity in the menu
- Includes video [filmed ourselves] + caption + skip options + exercices

Puzzle

- 4 Levels total
Level 1 & 2 have 6 pieces
Level 3 has 12 pieces
Level 4 has 20 pieces
- Functions include drag + drop puzzle pieces and letter to their appropriate places

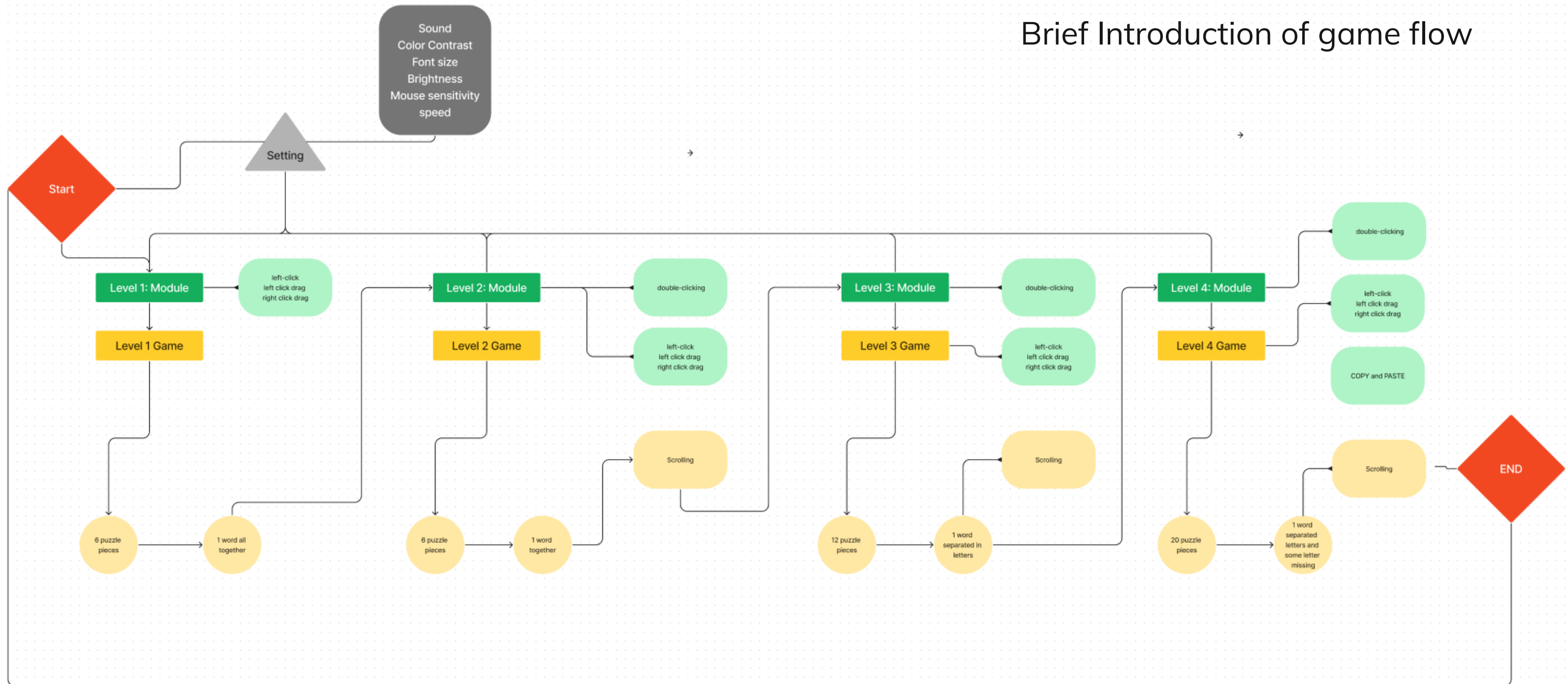
Word

- The last level of this section of the game also has a simulation of the copy-paste function.
- The user will also get to use their fine motor skills in a different context than in the puzzle.

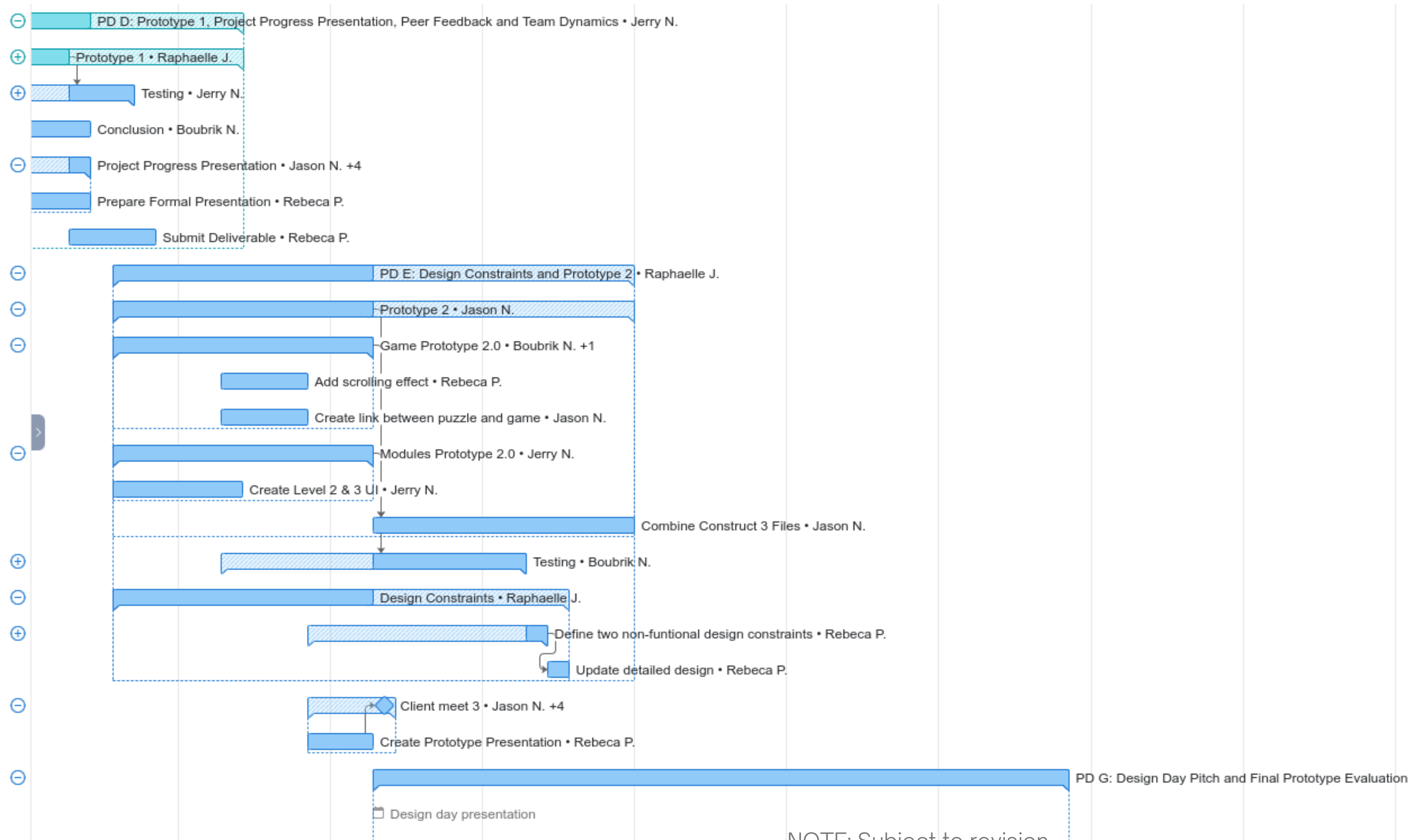


The User Flow

Brief Introduction of game flow



Future Plans

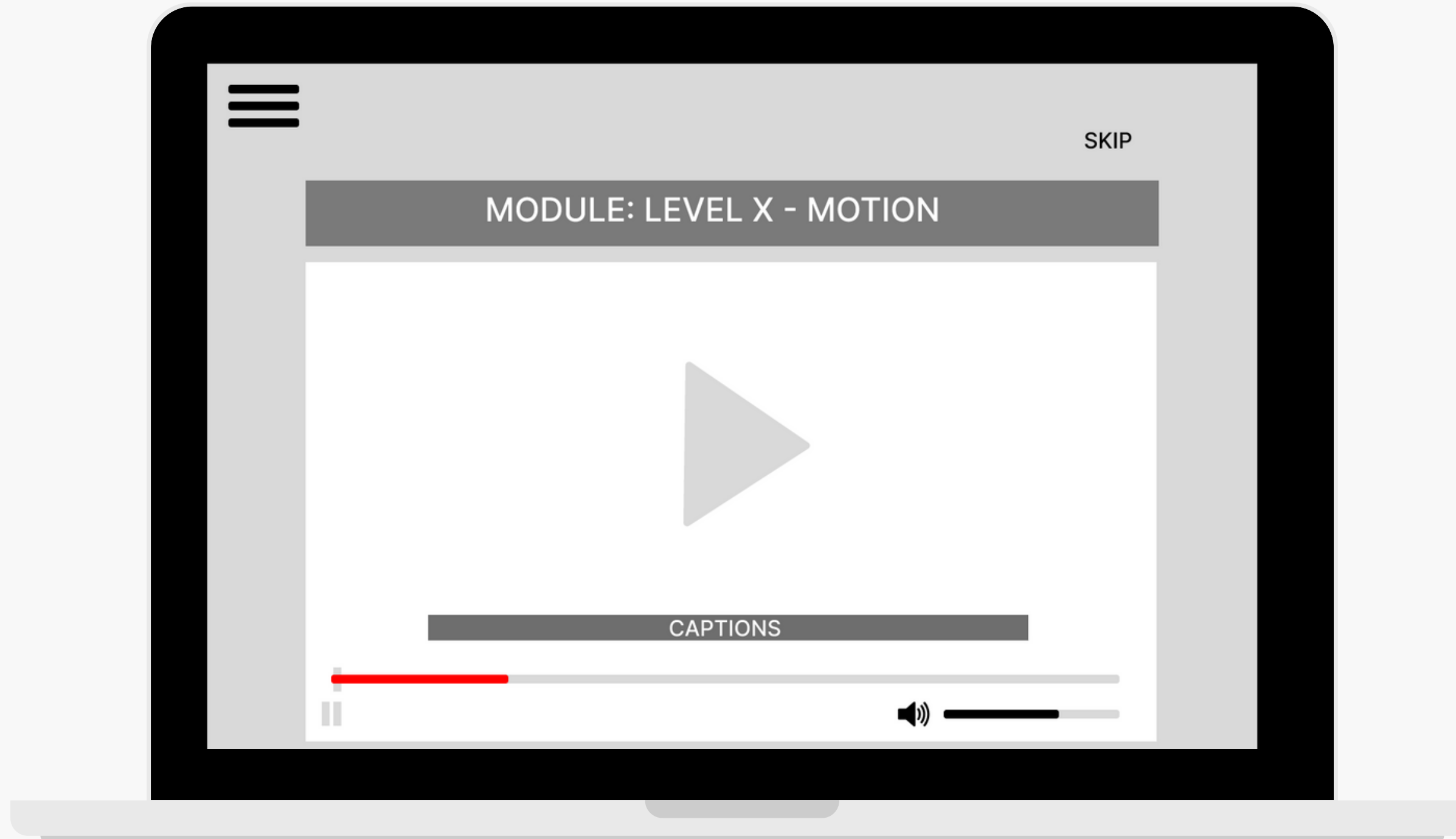


PUZZLE

Final Concept

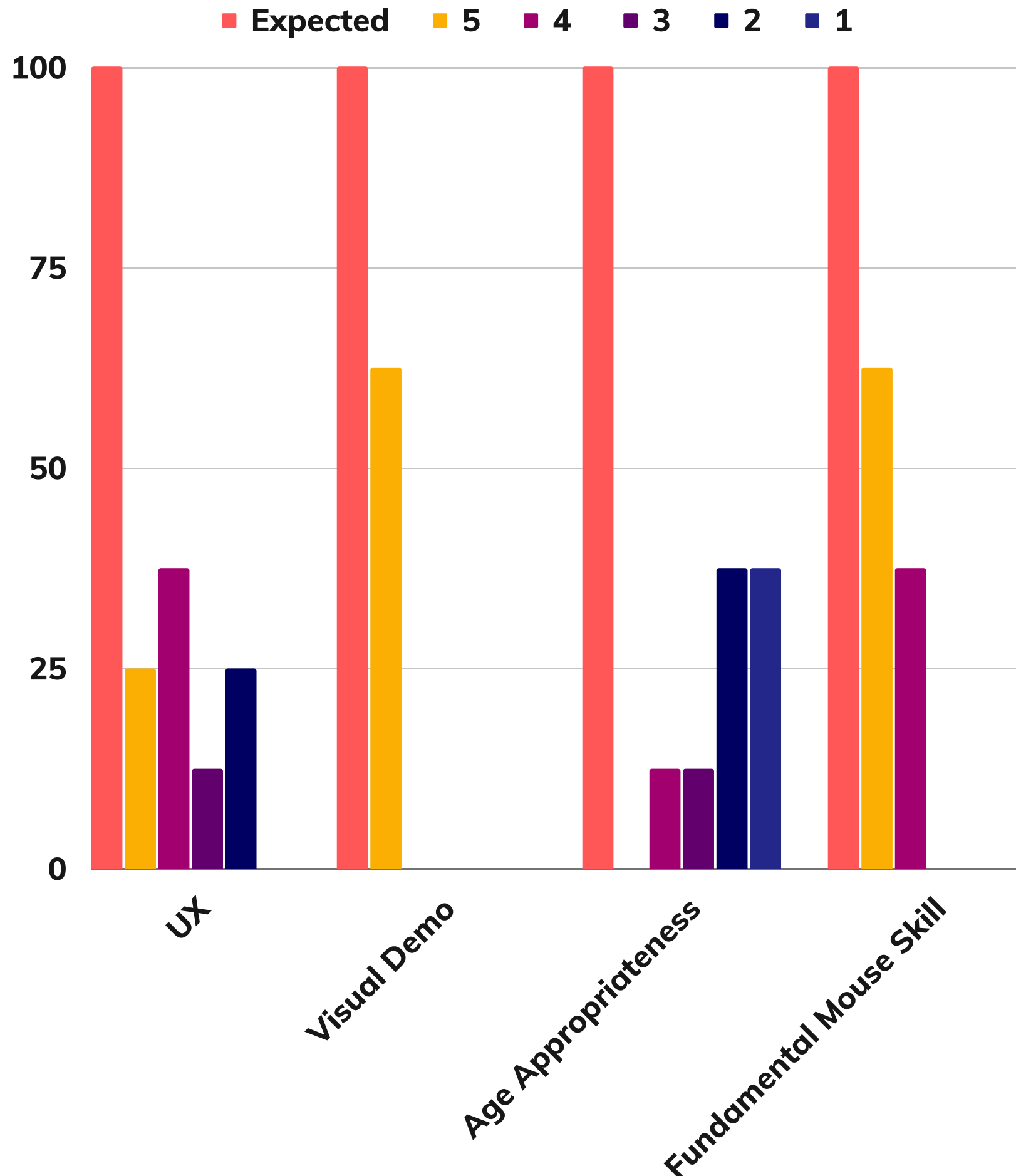
Game-Based Concept that teaches Basic Mouse Functions Through Engaging Puzzle Solving and Word Formation

- 01** Module + Exercices for each level.
- 02** Functionality applied through "Puzzle Solving and Word Formation".
- 03** Customizable Settings for a Comfortable Learning Experience.
- 04** Keeps User Engaged while Familiarizing with Basic Mouse Skills.
- 05** Progressive puzzle-solving levels with increasing difficulty.
- 06** Automatic transition to the lesson after 8 sec if user cannot use the mouse at all.



Testing vs Target Specifications

Test #	Objective	Test Method Description	Test method	Expected Result	Actual result	Units
6	Module - Minimal lagging and logical errors	Each Module is testing for edge case, logical error and lagging. All function	Team runthrough	Some logical errors to be detected and debugged YES	For the exercise, any mouse-clicking motion is accepted and seen as successful despite being a left-click exercise Characters can get lost in the far right and far left of the screen. The letters can go behind each other in-game and hide each other in the click+ drag exercise YES	Binary
7	Puzzle- Minimal lagging and logical errors				Overlapping pieces in puzzle can be stacked on top of each other and be hidden YES	
8	Word - Minimal lagging and logical errors				The snapping feature prevents the user from making error; Automatically snapping even if you are not very close to the letterbox. The letters have the ability to be behind the picture and be hidden YES	



User FeedBack

From Feedback Survey

Since testing with the actual end user is currently not possible, the web application was tested with family and friends of different age ranges for feedback.

Feedback Comments

- Instruction and exercises are hard to understand
- Tend to focus on understanding what is asked instead of practicing mouse skills
- Pictures get hidden behind the object
- Word game word automatically goes to the right position when you move





Client Feedback 2.0

Usability, accessibility and UX

Does the product meet the client's needs and expectations? How does it feel to use the product, and what can be improved?

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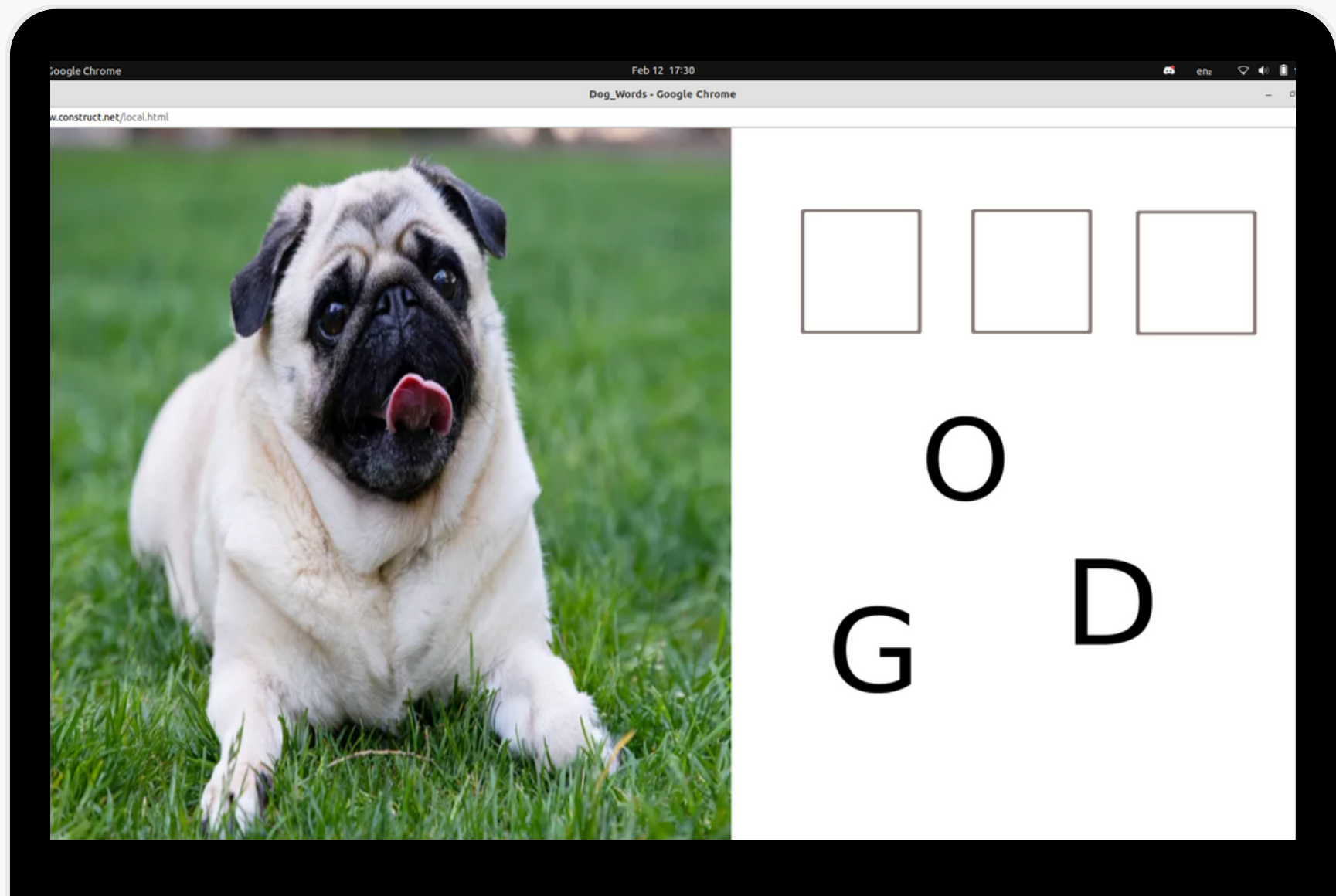
Design and aesthetics:

Does the design meet the client's aesthetic standards? What changes, if any, would the client like to see in the design? Do the colors contrast enough for the end user? Are the fonts readable?

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Functionality and features

Does the product have all the necessary features and functions the client needs? What additional features or improvements would the client like to see?





Thank You

