

# GNG 2101 C - Intro. to Product Development

## **Deliverable C - Detailed Design and BOM**

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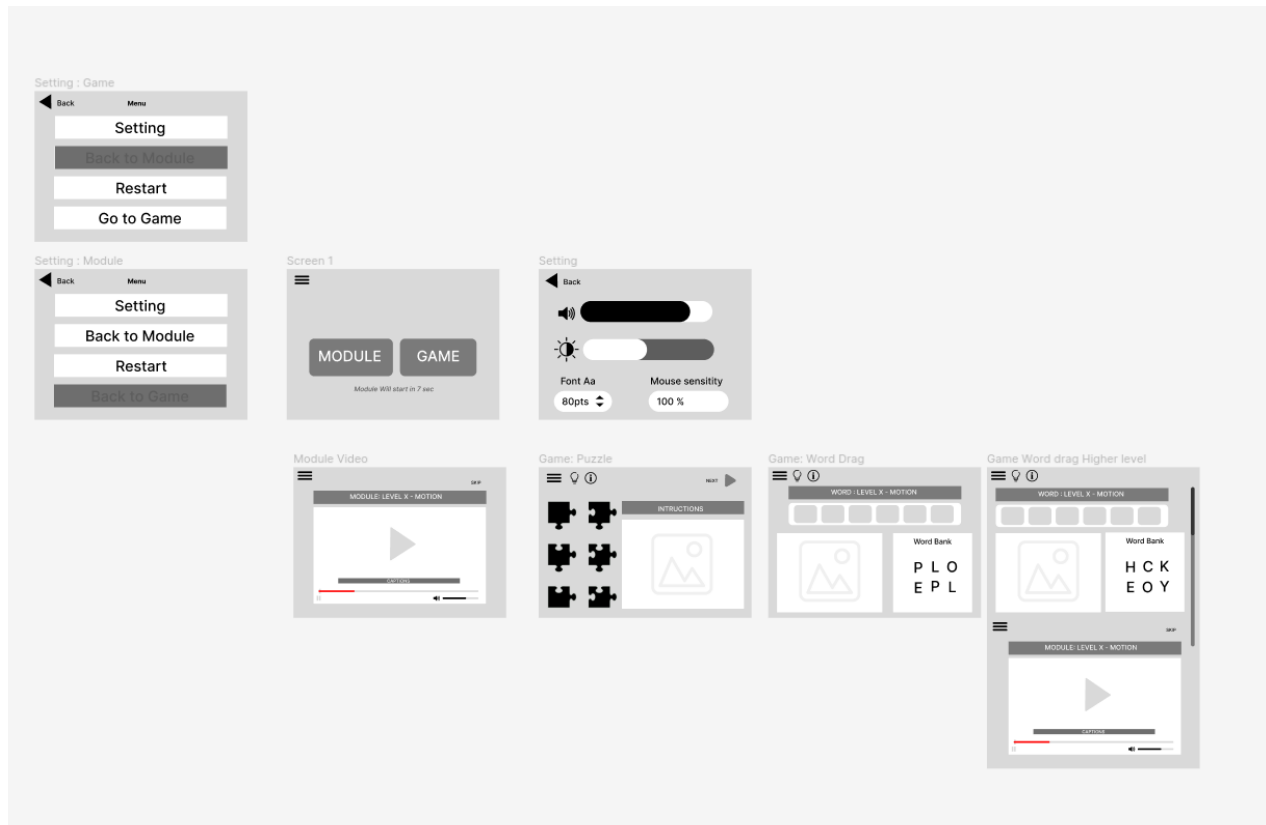
## Client Meeting 2 Feedback

During the meeting with our client, we presented our global concept along with three particular design ideas for the game component of the app. The client expressed his interest towards the video games but did share that many of the users have a common interest in puzzles. He mentioned that our general concept idea met all the requirements and everything he is looking for. The only thing he mentioned that we needed to add was a double clicking option.

To improve the design, we will continue with our target specifications and find a way to implement the double clicking into our chosen game concept.

# Detailed Design

## Overall concept

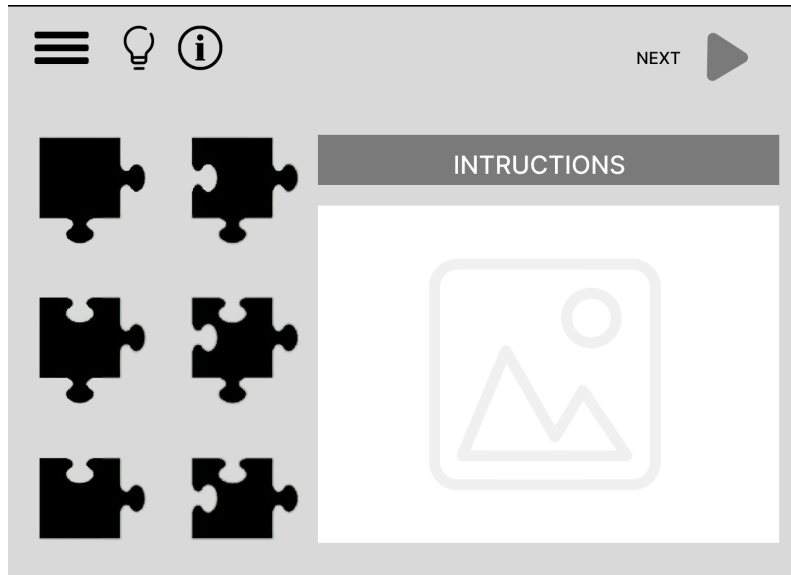


## Game

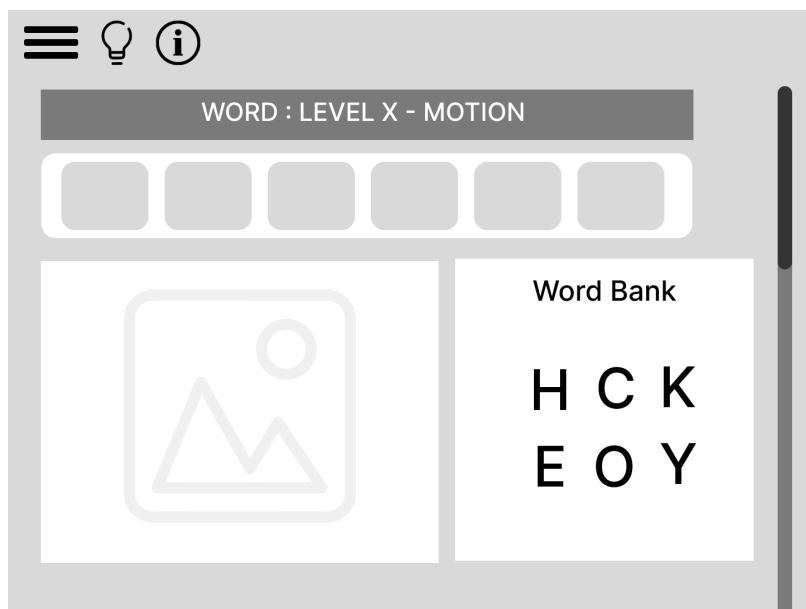
Level	Puzzle	Words	Comments	Module
1	6 pieces	1 word (letters separated)	Just drag + drop 1 whole word into the placeholder	<u>Before Game:</u> - left-click - left click drag
2	6 pieces ( include double click)*	1 word ( letters separated)	drag + drop puzzle pieces and letter to their appropriate places	<u>Before Game</u> - double-clicking to flip the puzzle piece <u>After Word Section</u> - Scrolling
3	12 pieces ( include double click)*	1 word (letters separated)	drag + drop puzzle pieces and letter to their appropriate places	Same as level 2 module
4	20 pieces (all functions)	1 word (letters are separated, but there are some missing so use COPY and PASTE)	drag + drop puzzle pieces and letter to their appropriate places	<u>Before Game</u> Copy and Paste (right + left)

## Game General Wireframe UI

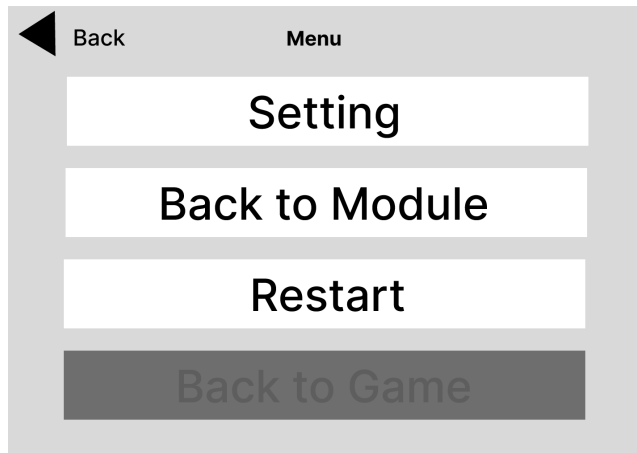
Puzzle :



Word:



Drop Down Menu :



## Game Level Details

### *Level 1*

Image/Word : Dog

- No rotations

Actions : Left click, Drag, Drop

### *Level 2*

Image/Word : Hockey

- Rotate 2 of the 6 pieces so that they fit

Actions : Left click, Drag, Drop, Double click

### *Level 3*

Image/Word : Universe

- Rotate 4 of the 12 pieces so that they fit

Actions : Left click, Drag, Drop, Double click

### *Level 4*

Image/Word : Nature

Actions : Left click, Drag, Drop, Double click, Copy paste(Right + Left click)

## Module

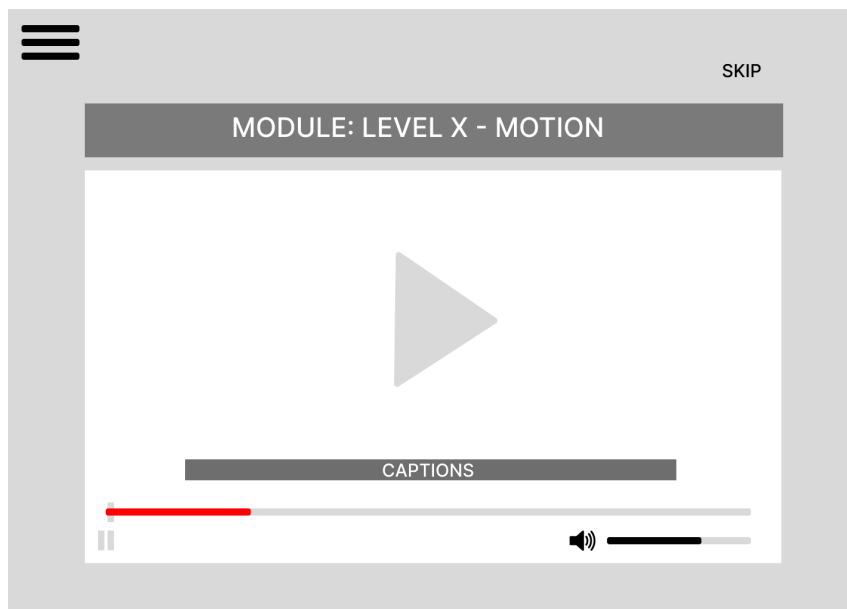
- each module is a video [ film ourselves] + caption + and skip options
  - practice after the video is played → play the game ( something to be defined)

## Module Wireframe

### Front Page

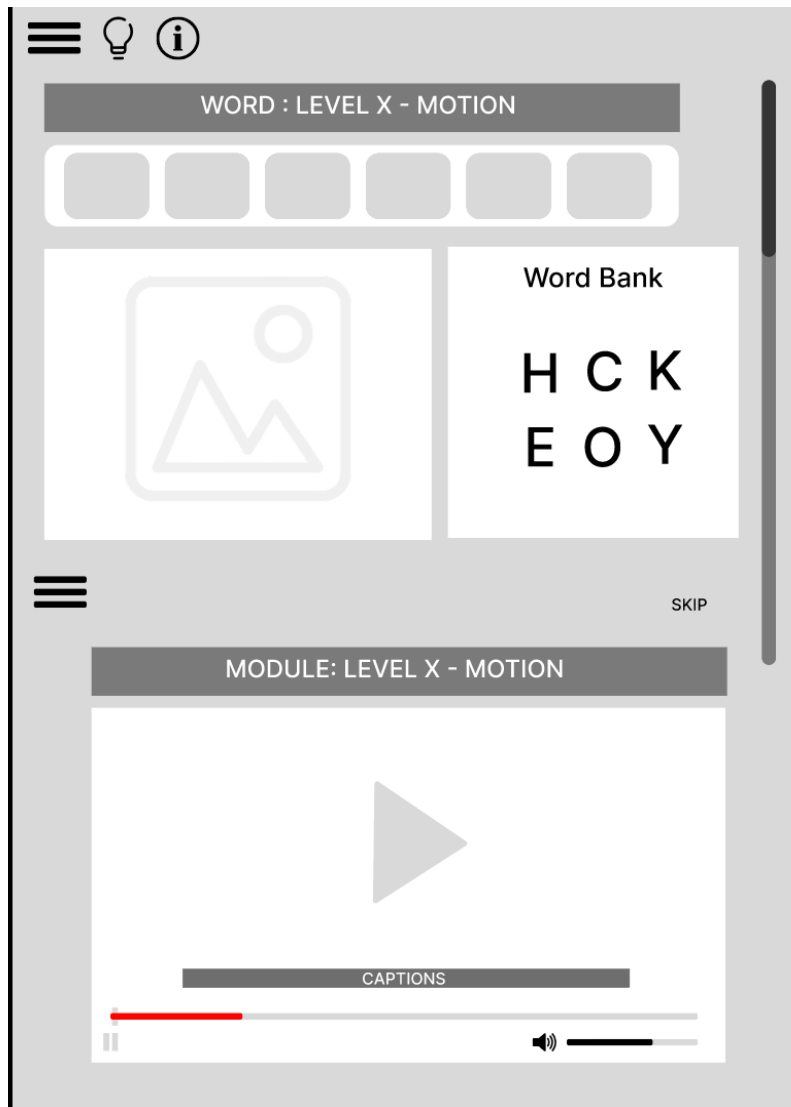


## Module





Word



```

graph TD
    Start([Start]) --> Setting[Setting]
    Setting --> Level1[Level 1: Module]
    Setting --> Level2[Level 2: Module]
    Setting --> Level3[Level 3: Module]
    Setting --> Level4[Level 4: Module]
    
    Level1 --> Level1Game[Level 1 Game]
    Level1Game --> P1((6 puzzle pieces))
    P1 --> T1((1 word all together))
    T1 --> Level2
    
    Level2 --> Level2Game[Level 2 Game]
    Level2Game --> P2((6 puzzle pieces))
    P2 --> T2((1 word together))
    T2 --> S2[Scoring]
    S2 --> Level3
    
    Level3 --> Level3Game[Level 3 Game]
    Level3Game --> P3((12 puzzle pieces))
    P3 --> T3((1 word separated in letters))
    T3 --> S3[Scoring]
    S3 --> Level4
    
    Level4 --> Level4Game[Level 4 Game]
    Level4Game --> P4((20 puzzle pieces))
    P4 --> T4((1 word separated letters and some letter missing))
    T4 --> S4[Scoring]
    S4 --> END([END])
    
    Level1Game --> L1M[Level 1 Module]
    L1M --> L1G[Level 1 Game]
    L1G --> L1M
    
    Level2Game --> L2M[Level 2 Module]
    L2M --> L2G[Level 2 Game]
    L2G --> L2M
    
    Level3Game --> L3M[Level 3 Module]
    L3M --> L3G[Level 3 Game]
    L3G --> L3M
    
    Level4Game --> L4M[Level 4 Module]
    L4M --> L4G[Level 4 Game]
    L4G --> L4M
  
```

The flowchart illustrates the game design process, starting from a red diamond labeled 'Start'. A grey triangle labeled 'Setting' leads to a grey rounded rectangle containing the following settings: Sound, Color Contrast, Font size, Brightness, and Mouse sensitivity. The process then branches into four levels, each represented by a green rectangle labeled 'Level X: Module' and a yellow rectangle labeled 'Level X Game'.

- Level 1:** The 'Level 1: Module' (green) leads to a light green rounded rectangle with the text 'left-click, left click drag, right click drag'. This module leads to the 'Level 1 Game' (yellow), which involves '6 puzzle pieces' (orange circle) and '1 word all together' (orange circle). The 'Level 1 Game' leads to the 'Level 2: Module'.
- Level 2:** The 'Level 2: Module' (green) leads to a light green rounded rectangle with the text 'double-clicking' and another with 'left-click, left click drag, right click drag'. This module leads to the 'Level 2 Game' (yellow), which involves '6 puzzle pieces' (orange circle) and '1 word together' (orange circle). The 'Level 2 Game' leads to a yellow rounded rectangle labeled 'Scoring', which then leads to the 'Level 3: Module'.
- Level 3:** The 'Level 3: Module' (green) leads to a light green rounded rectangle with the text 'double-clicking' and another with 'left-click, left click drag, right click drag'. This module leads to the 'Level 3 Game' (yellow), which involves '12 puzzle pieces' (orange circle) and '1 word separated in letters' (orange circle). The 'Level 3 Game' leads to a yellow rounded rectangle labeled 'Scoring', which then leads to the 'Level 4: Module'.
- Level 4:** The 'Level 4: Module' (green) leads to a light green rounded rectangle with the text 'double-clicking', another with 'left-click, left click drag, right click drag', and a third with 'COPY and PASTE'. This module leads to the 'Level 4 Game' (yellow), which involves '20 puzzle pieces' (orange circle) and '1 word separated letters and some letter missing' (orange circle). The 'Level 4 Game' leads to a yellow rounded rectangle labeled 'Scoring', which then leads to a red diamond labeled 'END'.

Each level's 'Game' phase also has a feedback loop back to its 'Module' phase. For example, 'Level 1 Game' leads back to 'Level 1: Module'.

The users have little to no mouse skills; therefore, right off the bat, a module of basic skills are needed. Our team decided to have different modules throughout the game that teach different combinations of mouse needed for each level. Considering that the user may not be able to access the modules due to no mouse skills, after 10 seconds of no action in the menu, the application automatically takes the user to the first module.

The game will be split into 4 levels to accommodate for the progressive learning of the user. The 4 levels, as described in the flowchart, will be linked to an appropriate learning module.

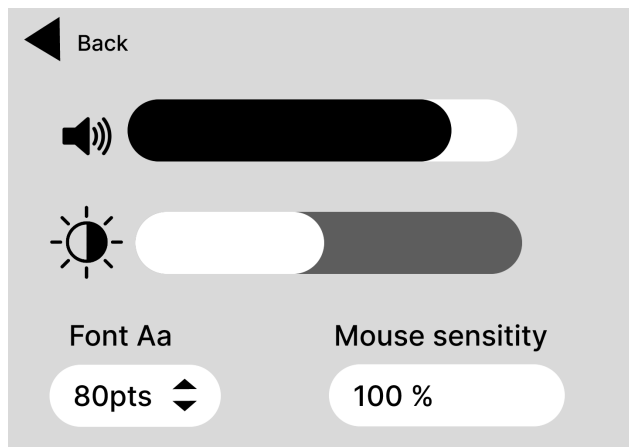
The puzzle will be accommodated to each level difficulty by adding more puzzle pieces as the levels progress. The puzzles will also have significant features such as needing to flip certain pieces.

## Subfunction 2.2: Word Guessing

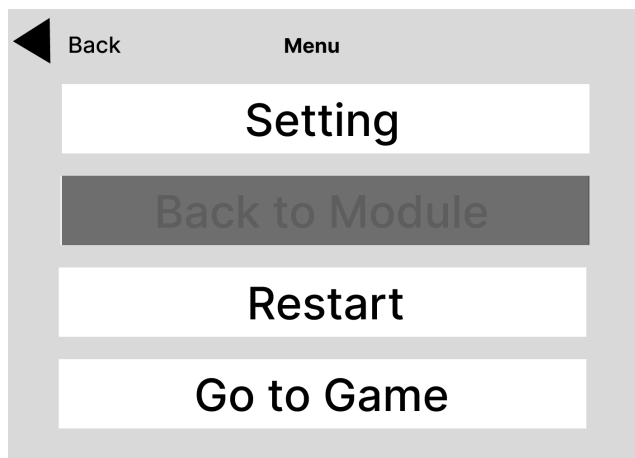
The word guessing part of the game is an added feature to stimulate the user's cognitive thinking and to make it entertaining while retaining their attention span. This part of the game also has a simulation of the copy paste function. The user will also get to use their fine motor skills in a different context than in the puzzle.

## Subfunction 3: Menu options

### Subfunction 3.1 : Settings



### Subfunction 3.2 : Game to Modules



## Skills & Resources

Since this is a software project, many of our available resources are on the internet. No actual physical resources will be needed for this project. Our skills and resources include :

- Coding knowledge and experience
- Online game making resources
- Language Libraries
- Communications

## Assessment

Time Estimate : 6 weeks

Based on all the tasks we need to complete, we can divide our project into three phases : design, implementation and testing. The design phase includes developing the design concept in detail for the chosen global concept. This phase is long and should be done thoroughly.

Time available : 8 weeks

For this project to go over smoothly, we are assuming that :

- App is adaptable to users different level of needs
- Font size 30 - 40 is readable for the user
- Childishness
- Simple content and easy to understand
- Teach fundamental mouse skills ( left click, right click, dragging)
- Minimal lagging and logical errors
- The users can spell and are literate

# Bill of Materials

Material	Type	Cost	Description
Construct 3	Software	\$28.99 / month	Game making software.
Figma	Software	Free	Wireframe maker

# Project Plan

Wrike Snapshot Link :

<https://www.wrike.com/frontend/ganttchart/index.html?snapshotId=XhRMuhgOsyP0S2fdS0xz1ehOL8vXpHUr%7CIE2DSNZVHA2DELSTGIYA>