

Move Or Not

Game Design Document v0.1

1. Core Concept

The core concept of this puzzle-based motion game is to decode the logical expression on the screen and then move your body accordingly within a fixed amount of time.

2. Design Pillars

The design pillars for this game would be **Logic, Pace, and Diversity**.

Logic, as the game requires you to decode the logical expressions on the screen and move your body to the correct part of the screen as directed.

Pace, as the players must decode the logical expressions in a set amount of time to progress through.

Diversity, as each stage of the game will contain fixed primitive(s) which will be combined with logical operators to form expressions. The list of primitives, logical operators, and expressions that result from their combination, can be exceptionally wide-ranging.

3. Unique Selling Points

Innovative Gameplay: Fusing the dynamic element of motion with a static genre like puzzles, the game provides a unique and stimulating experience.

Simple Mechanics: Offering easy-to-understand, select-from-given mechanics make the game accessible to a wide range of players, including casual gamers.

Strategic Problem-Solving: Challenging the player's logical thinking and problem-solving skills, the game encourages players to analyze, make decisions, and implement them, all in a very short timeframe.

Wide Range of Difficulties: Offering a variety of levels to play through, each with a unique design, along with the scope to mix and match any two different levels, keeps the gameplay fresh.

4. Features and Mechanics

4.1 Expressions

Players must decode the expression on the screen and move accordingly to the correct section of the screen in a fixed amount of time to confirm their selection.

There will be functions such as "not not", "or" and many more, that will take an input of a primitive such as "color", "direction" etc. to produce an expression like "not not yellow", "blue or green".

4.1.1 Primitives

These will be the fundamental block of the game and these will define a chapter (explained in 4.4.1). There can be a variety of primitives such as colors, directions, animals, shapes, countries, emojis, seasons, fruits, etc.

4.1.2 Functions

A function is a rule that takes primitive(s) as input and outputs an expression for the player to decode.

Every level (explained in 4.4.2) will have 4 fixed functions:

- Null
- Not, Not Not, and Not Not Not

- Nothing
- And, and Or

Apart from these 4, every chapter will have some special functions of its own. For example, The color chapter can include a change-color function that, when given a color input, changes the color of the expression that mentions that color in the output.

For example, the input of RED will result in an output of RED, likewise BLUE will become BLUE, etc.

4.2 Screen Divisions

The screen will be divided into multiple sections. As of now, we have implemented 3 vertical sections; Left, Middle, and Right. Each section represents a selection for the player to make. While some levels will have all three sections to choose from, others may use only two, with the remaining one always being an incorrect response.

4.3 Player Core

A figure representing the player's body will display on the screen. When the player moves in real life, the figure in the game will follow suit. Whatever screen section the figure moves into will be considered the selection. Ideally, it can be thought of as the player core.

4.4 Chapters, Levels, and Rounds

4.4.1 Chapters

In the chapter mode of the game (more about modes in 3.6), there will be different stages that will contain different levels. Each chapter will be determined by the primitive(s).

4.4.2 Levels

Each level within a stage will have several functions that will take the chapter's primitive as input to form different expressions. Every level will contain a fixed amount of rounds. All the levels in a stage will have an increasing difficulty level.

4.4.3 Rounds

A round is a time-bound entity during which the player has to make a selection. At the end of the round, the player will receive visual feedback on the core indicating whether the selection was correct or incorrect, and the total number of incorrect selections will be displayed on the screen after the level is completed.

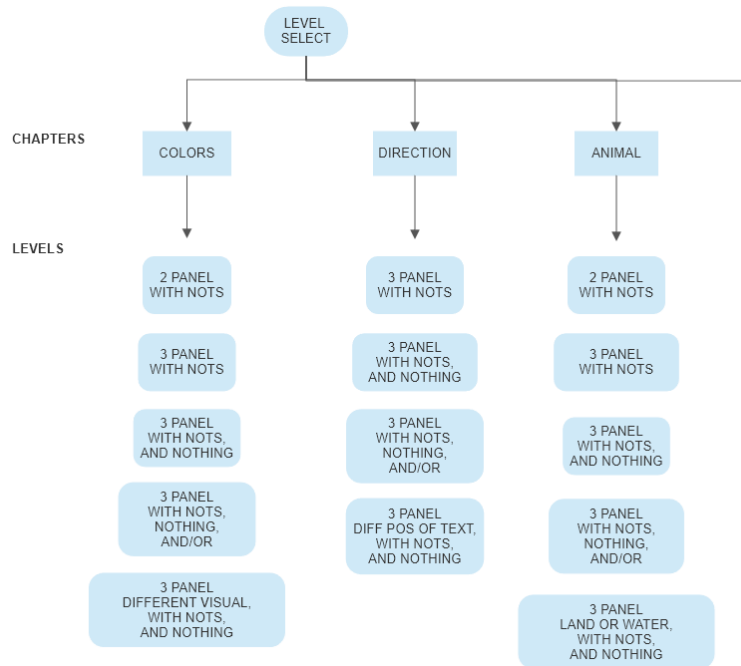


Figure 1: Level Select Example

4.5 Timer

While playing a level, there will be a Timer that will be displayed on the border of the screen. This timer is the round timer that represents the maximum amount of time the player is allotted for a round before the detection happens automatically, to check whether a correct move is made or not.

- Once the timer ends, the section where the core is considered the answer, and after the visual feedback, the next round starts, and the timer restarts.
- Once the player completes the final round, the level ends.
- The default duration will be 3 seconds, and it will be fine-tuned once enough data has been collected via analytics.

4.6 Controlled Randomness

Because each level has its own set of expressions, each expression that appears on the screen is chosen at random from that set. It can be the same twice in a row or more, but the likelihood is low, and it will be balanced out by the randomness with which the correct section of the screen is selected.

The correct section of the screen to move to will be chosen at random each time. It will be implemented so that the same section cannot be the answer more than twice in a row to ensure that the player doesn't stay in the same place for too long, and has to move.

4.7 Game Modes

There will be 3 modes: the stage mode, the endless mode, and the time trial mode.

4.7.1 Stage Mode

There will be different stages, each with a certain number of levels.

4.7.2 Endless Mode

This mode will combine expressions from all the stages and will only end once a player has done a certain number of incorrect moves. To unlock this mode, players must progress through the stage mode until they reach a certain point.

4.7.3 Time Trial Mode

For each level in this mode, instead of having a fixed amount of rounds, players will have a fixed amount of total time. Players would be able to play many rounds depending on how fast they complete a round. After the time ends, they will be given a score based on their accuracy and the number of correct moves they made.

For the levels in this mode, there will be one for each stage from the stage mode, and each level will include instructions from all levels of that stage from the stage mode.

4.8 Scores

There will be a single type of scoring in the game as of now. The number of correct moves you made will be your score. After completing a level, this will be represented visually through a rating system, under which the score value will also be shown in the text.

4.9 Game Analytics

We'll track the number of active users, the average session duration of a player, and the user engagement rate. We'll also track the average amount of time the player takes to move across panels so that we can find the sweet spot for the timer. The player's personal information will not be stored anywhere.

5. Target Platform and Audience

5.1 Target Platforms

Our target platforms will be Android and iOS mobile and tablet devices with front-facing cameras, having at least 4 GB of RAM and screen sizes ranging between 5.5in - 7.1in (6.3in $\pm$ 0.8in) for mobile devices and 8.3in - 12.9in for tablets.

5.1.1 Android Devices

We are targeting mobile and tablet devices with Android version 10 or above. The game will be available for free on the Google Play Store.

5.1.2 iOS Devices

We target iPhones and iPads with iOS 15 or above. The game will be available for free on the Apple App Store.

5.1.3 Aspect Ratios

With all the devices considered, we need to consider the following aspect ratios, 16:9, 18:9, and 4:3. The game will run in Landscape mode all the time.

5.2 Target Audience

The target is a broad audience, including casual gamers, puzzle enthusiasts, and anyone looking for a fun and challenging mobile game.

Both men and women play games in the puzzle-based motion game genre, but there is a slight skew towards men. This genre is popular with players of all ages but favored more by younger players. This genre is popular in all countries, but the audience is mainly from USA and East Asian countries such as Japan and South Korea.

6. Interface and Controls

6.1 User Interface

The UI will feature vibrant and modern buttons with chiptune-like audio feedback on every click along with visual feedback like glowing. The Players' interaction with the screen will be with the buttons only. The gameplay will be purely motion based.

In the game, the player's camera view will be semi-visible during gameplay as the screen-section panels would overlay on it.

If the Player moves out of the camera range for a few seconds, a pause menu will appear, asking them to get back into the silhouette provided to resume the game, and there will also be a menu button to take them back to the title screen.

The expressions in the game will be shown in black text and the number of rounds left will be shown behind the colors in a faded yet visible manner.

The game scene will feature the camera output of the player in the bottom layer, upon which there will be a semi-transparent black layer, upon which there will be rounds left text, and upon that will be the color panels, instructions, and the timer will come on top of it.

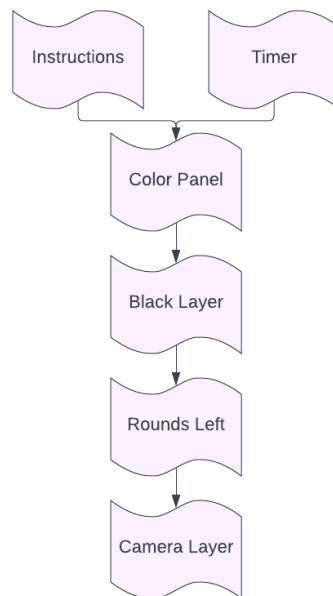


Figure 4: UI Layering ([Link](#))



Figure 5: Game UI from Prototype

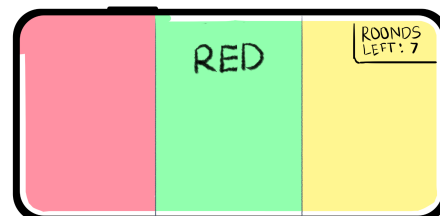
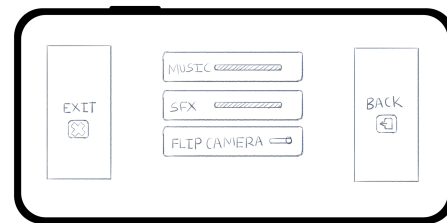
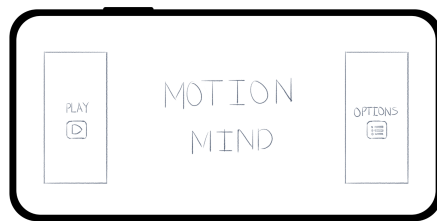


Figure 6: Game UI Wireframe

6.2 Game Flow

The game will have a simple game flow, as represented in Figure 7

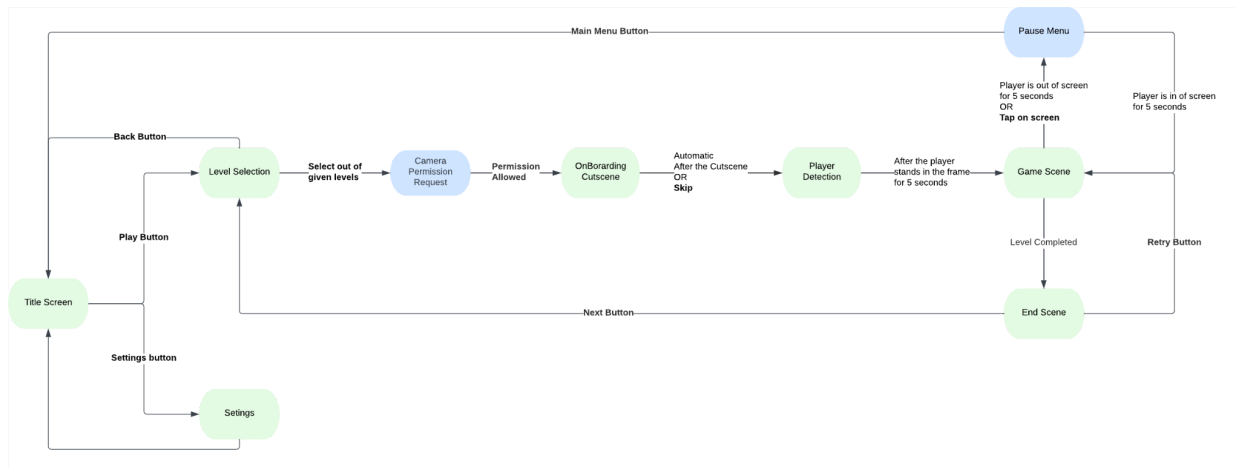


Figure 7: Game Flow Chart [\(Link\)](#)

6.2.1 Level Flow

The level flow of the game will be linear as shown in Figure 8

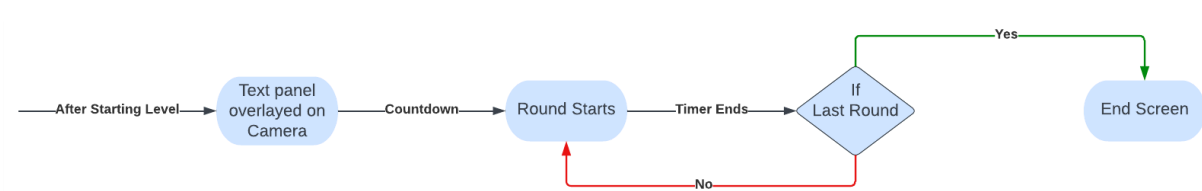


Figure 8: Level Flow Chart [\(Link\)](#)

6.2.2 Round Flow

The round flow of the game will be very simple as shown in Figure 9

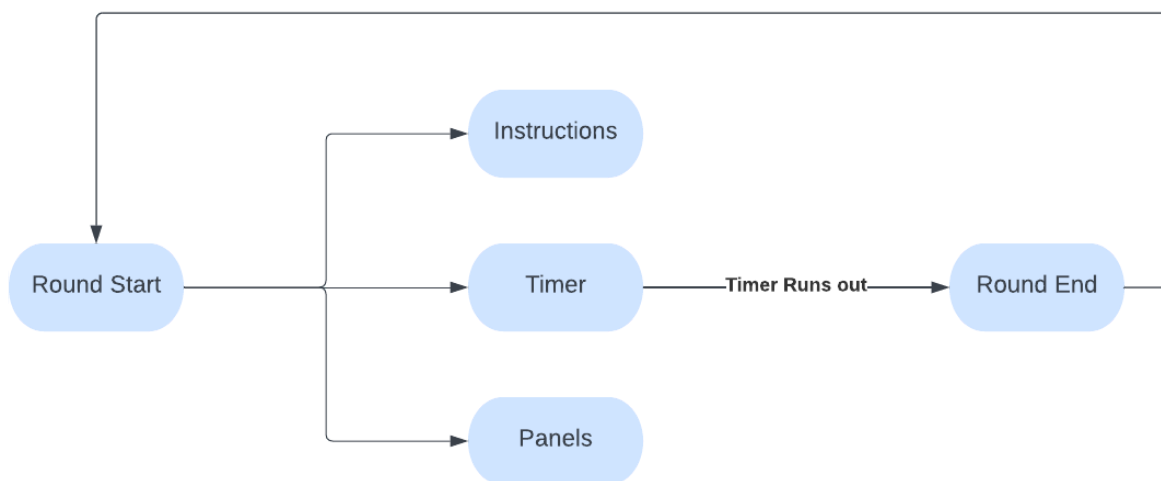


Figure 9: Level Flow Chart [\(Link\)](#)

6.3 User Controls

The player will have to move their body to move the core in the game. When the timer ends, the screen section where the core is will be confirmed as their selection. Only the upper body of the players, from head to hips, and hands must be visible for the game to properly track their position.

The UI interaction will be based on a simple touch of a button on the screen.

7. Basic story

As of now, there is no story as it is a simple logic-based puzzle game incorporated within a motion game.

8. Visual style

We'll use the Neon Punk aesthetic which is characterized by vibrant, high-contrast colors, and futuristic and edgy design. This theme is used in games such as Solas 128, Block Puzzle, Tales of Neon Sea, etc. This theme can contribute to a sense of urgency and speed, making the design feel alive without drawing much attention away from the game itself.



Figure 10: Neon Punk Aesthetic



Figure 11: Related Games with such theme



Figure 12: Game Visual Style Moodboard

9. Music & sound

To match the pace of the game and equally go with the neon theme, we have decided to go with 1-bit music for the BGM and the SFXs.

There would be multiple BGMs used in the game, each stage would have a 2-3 song playlist and one song will be selected to play at random for each level in that stage.

The Title screen and End Screen would have different BGM. If the game pauses, the BGM's volume will be reduced till the player gets back in the game again.

Also, the sound effects should not interfere with each other. Therefore proper priorities would be set for each audio player.

Example of intended audio style: [Link](#)

10. References and Inspirations

The game was inspired by the famous mobile game Not Not. The idea developed from thinking about integrating body movement with some brain crunching as well.

11. Marketing

- Ads
 - ~~Banner ads will be displayed at the top of the screen after every 2 level tries.~~
 - ~~Video ads will be displayed after every 6 level tries.~~
 - **Voluntary ads** will be available in the settings section, and users can choose to watch them in exchange for rewards such as
 - In-Game Currency (Explained below).
 - Lives (A life system is to be added to the game where you consume a life per level).
- Purchasable
 - **In-game Currency packs** can be purchased to get more in-game currency.
 - **Ad-removal** can be purchased to remove all the ads in the game.
- In-game Currency
 - A virtual currency that you can earn after completing chapters or purchasing from the store.
 - It can be spent to unlock:
 - Some chapters that can only be unlocked via in-game currency.
 - Boosters that will help you make the level easier to play.
 - Different cosmetics of the core and different visuals for the correct and incorrect feedback.
 - Lives

12. Development Timeline & Major Milestones

12.1 Proposed Timeline

Task	Status	Deadline	Notes
GDD Completion	In progress	10th May 2023	
2D Asset Development	Not started		
Game Mechanics	In progress		
Game Audio	Not started		
Analytics	Not started		
Bug fixes and Cleanup	Not started		
Launch	Not started		

12.2 Project Milestones

Milestones	Person	Status	Deadline	Completed On	Notes
Prototype: Core mechanic	[REDACTED]	Completed	29th April 2023	29th April 2023	Prototype Gameplay
GDD	[REDACTED]	Completed	10th May 2023	19th May 2023	
TDD	[REDACTED]	Completed	15th May 2023	18th May 2023	
Minimum viable game: With Tutorial + 2 Stages, BGM and SFXs, and Analytics	[REDACTED]	Completed		10th June 2023	There would be: 3 levels in Color Stage, and 2 levels in Direction Stage Approx. total playtime would be at least more than 5 minutes Apoorv will work on coding, Design will be handled by Ezaz and Swapnil, Sound will be handled by Swapnil, and VFX will be handled by Prasann
Google Play Closed Testing		In progress	16th June 2023		Audience of India, USA, East Asian countries like Japan, etc will be targeted Also within Personal groups, it will be shared Will be shared with indie game testers
More Stages: Mix, and Logic	[REDACTED]				6 levels would be added, 3 in each stage Similar work division as MVG
Pre-Release Testing					It will be open testing and anyone would be able to play test it. Moreover, it will again be shared with the audience from the Closed Testing phase
Bug Fixing	[REDACTED]				
Pre-Marketing	[REDACTED]				Research will be done and then marketing according to it

Milestones	Person	Status	Deadline	Completed On	Notes
Full-Release					Tutorial + 4 Stages (11 levels), with the announcement of more Stages to come soon. Same work division as MVG

13. Development Tools

The software and tools used for this project will be as follows:

Unity version 2021.3.8f1 for main development with Ohilo's TemplateBP.

The code will be written in Visual Studio Code 1.78.

Adobe Photoshop 2022 will be used to create sprites, animations, and UI elements.

Blender 3.3.1 will be used to create 3D assets.

Audio and Sound effects will be taken from various open-source audio websites like freesound.org or opengameart.org, also we'll also do some manual tweaking on Adobe Audition.

For project management, we will be using GitHub and GDrive.