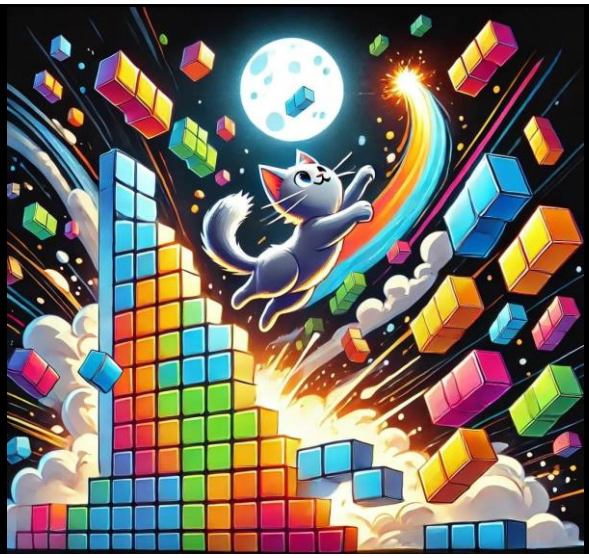
GAME DESIGN DOCUMENT



Jumping Tetris

Escape the Tetris world

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Legend

In this document, we outline and prioritize the requirements into 3 categories:

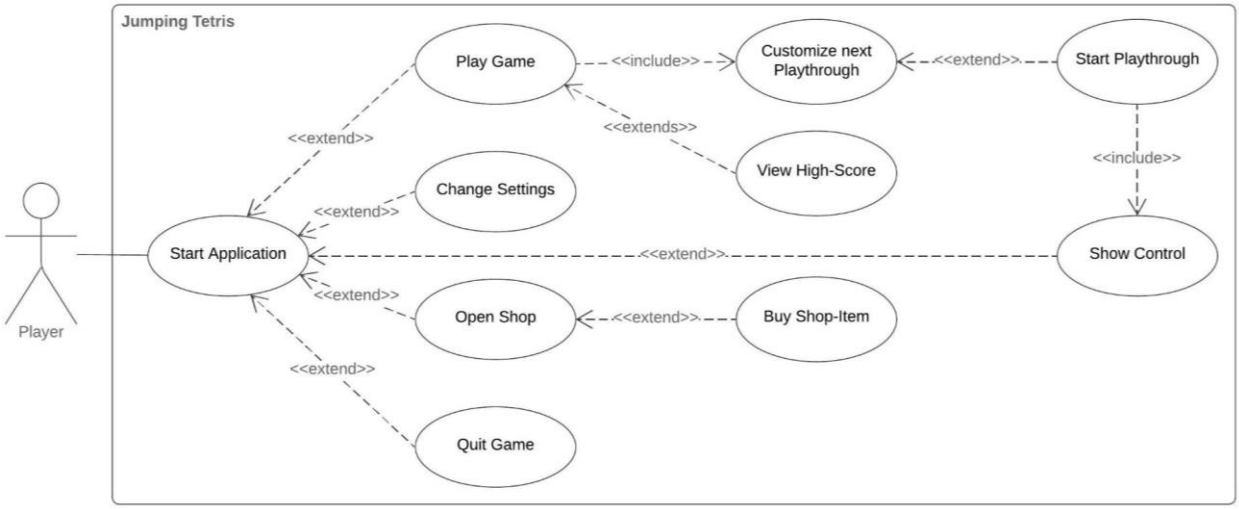
- **Must Have**: Essential requirements that are critical for the product to meet its objectives. These requirements are marked **yellow**.
- **Should Have:** Important features that significantly enhance the product but are not critical. These requirements are marked **green**.
- **Could Have**: Nice-to-have features that would add value but are not essential. These requirements are marked **blue**.

Game Analysis

Jumping Tetris combines the classical game "Tetris" with dynamic Jump'n'Run aspects to deliver a strategy-driven and mechanically challenging experience. Combining strategic decision-making, platformer mechanics, and creative problem-solving, the game offers a fresh take on classic mechanics. Players must adapt as they progress through increasingly difficult levels, encountering new mechanics every step of the way.

Jumping Tetris stands out by combining elements of beloved genres in a fresh and engaging way. By integrating a High Score system, *Jumping Tetris* rewards skillful play and motivates players to continuously improve, ensuring replayability.

Use Case Diagram



Use Case Description	
Use Case	**Start Application**
Actors	Player
Description	The player can start the application on their PC.
Stimulus	The player wants to start the application.
Response	The player is navigated to the Main Menu Scene.
Comments	-
Use Case	**Play Game**
Actors	Player
Description	The player can initiate the Play-Game process.
Stimulus	The player wants to play the game.
Response	The player is navigated to the “Next Playthrough” Scene.
Comments	Automatically transition to the next scene.
Use Case	**Customize next Playthrough**
Actors	Player
Description	The player can customize their next playthrough by selecting the preferred Game Mode and Player Model.
Stimulus	The player wants to customize their upcoming playthrough.
Response	The preferred Game Mode and custom Player Model is applied to the next playthrough.
Comments	Available Game Modes: Simple and Advanced/Multiplayer. Additional Player Models can be unlocked via the shop or level progression. If no input is provided, the default Player Model and Simple Game Mode are used.
Use Case	**Start Playthrough**
Actors	Player
Description	The player can start the playthrough.
Stimulus	The player wants to start the next playthrough.
Response	The playthrough starts with the previously defined settings.
Comments	This marks the beginning of the game logic.
Use Case	**Show Control**
Actors	Player
Description	The game displays the actions available to the player and their corresponding key bindings.
Stimulus	The player wants to view the control scheme.

Response	A window displaying the action-to-control mapping appears.
Comments	Window is shown by clicking on the “Show Control”-button in the Main Menu, additionally it is also shown **automatically** when starting a playthrough.
Use Case	**View High-Score**
Actors	Player
Description	The game displays the current High-Score.
Stimulus	The player wants to view their current High-Score.
Response	The High-Score is shown in the "Next Playthrough" Scene.
Comments	There are two separate High-Scores depending on which Mode has been selected.
Use Case	**Change Settings**
Actors	Player
Description	The player can modify the current game settings.
Stimulus	The player wants to change the settings.
Response	The selected settings are applied.
Comments	Example Settings to be included are: Window Size, Volume
Use Case	**Open Shop**
Actors	Player
Description	The player can visit the Shop.
Stimulus	The player wants to buy Shop-Items.
Response	The “Shop” Scene is opened.
Comments	Uses Points as in-game currency.
Use Case	**Buy Shop-Item**
Actors	Player
Description	The player can buy Shop-Items from the shop.
Stimulus	The player wants to buy Shop-Items.
Response	The selected Shop-Item is purchased and added to the player's inventory.
Comments	Shop-Items are cosmetic changes to the player character for example the player model.

Use Case	Quit Game
Actors	Player
Description	The player can quit the game.
Stimulus	The player wants to quit the application.
Response	The game terminates.
Comments	-

Genre

Jumping Tetris belongs to the puzzle-platformer genre by combining strategic elements of puzzle-solving with the fast-paced action of platforming. The game also incorporates a roguelike aspect, offering a unique experience with each run, by resetting progression.

Platforms

Jumping Tetris is exclusively designed for PC (Windows).

Target Audience

The primary target audience for *Jumping Tetris* consists of gamers that enjoy playing challenging platformers such as Celeste, Hollow Knight, and Shovel Knight. These players enjoy challenging and engaging gameplay that demands advanced strategies to overcome challenges. They are typically very passionate, highly motivated and generally fall within a younger demographic of 15-35 years old.

Additionally, *Jumping Tetris* appeals to players who enjoy local co-op experiences and shared challenges. In co-op mode, one player takes control of the platforming character while the other manipulates the falling Tetris elements, creating a dynamic and interactive shared gameplay experience.

Storyline & Characters

The Game revolves around a cat trying to take a nap on a Tetris-Arcade when it is mysteriously sucked into the Tetris board. Now it has to try to get out of the arcade machine by dodging the blocks and climbing to the top as the game keeps changing. The character that the player controls is the Cat, which is simply a typical orange cat. In multiplayer the second player controls a human that plays the Tetris game from the outside to help the trapped Cat.

Gameplay

Overview of Gameplay

Jumping Tetris is an innovative blend of strategy and platformer that reimagines two iconic genres: classic jump-and-run gameplay and Tetris. Designed for Windows PC, the game offers a dynamic experience that combines reflexes, planning, and creativity.

In *Jumping Tetris*, players navigate a character through a vertical playing field where Tetris blocks continuously fall, creating both obstacles and opportunities. The goal is to reach an opening at the top of the field to progress to the next level. Players must skillfully jump and adapt to the constantly shifting terrain to survive and succeed.

The game features two primary modes to suit different playstyles:

Standard Mode: Focused on single-player action, this mode tasks players with controlling the character to maneuver through falling blocks and reach the exit. Precision, timing, and quick thinking are key to mastering this mode.

Advanced Mode: This mode introduces a second layer of strategy by allowing players to control both the character and the falling Tetris blocks. The advanced mode can be played solo for a more challenging experience or cooperatively with a second player, where teamwork and coordination are essential to navigate the levels successfully.

This mode is played locally, with both players sharing a single keyboard for controls. This setup creates an engaging and accessible multiplayer experience, allowing friends to enjoy the game together in a traditional couch co-op style.

Game Objectives & Rewards

Objectives:
The primary objective in *Jumping Tetris* is to navigate through the falling Tetris blocks and reach the opening at the top of each level. Players are motivated to achieve the highest possible score. To encourage competition and skill mastery, there are separate High-Scores for **Normal Mode** and **Advanced Mode**. Successfully reaching the exit awards points, with additional points granted for completing levels more quickly.

Rewards:

- **High-Score:** Players try to beat the High-Score.
- **In-Game Shop:** Points earned during gameplay are converted at a certain rate to In-Game Shop currency after a game over, and can be used to purchase skins to personalize their character.
- **Unlockables:** Progressing to higher levels unlocks exclusive skins that cannot be purchased in the shop.

Penalties:
The game ends immediately when the player is **game over**. This occurs in the following scenarios:

- **Crushed by the Tetris block**: A Tetris block descends from above and traps the player between the floor and the falling block.
- **Tetris Board Overfilled:** The Tetris blocks stack to the top of the playing field, overfilling it.
- **Ground Contact:** The player touches the lowest floor, which becomes exposed when a filled row dissolves.
- **Lava Contact:** The player touches a lava block.
- **Enemy Damage:** The player sustains damage from an opponent.

Note: Players have only **one life**—any damage results in immediate game over.

Difficulty Levels:
As players progress, the game becomes increasingly challenging, keeping them engaged and motivated:

- **Speed Increase:** The speed of falling Tetris blocks increases with each new level.
- **Enhanced Obstacles:** The number of enemies and special blocks grows as levels advance.

Rewards	Penalties	Difficulty Levels
Points High-Score Unlockables Items (within level)	Game Over Crushed by falling block Tetris Board is overfilled Ground is reached Special blocks Enemies	Increasing the game speed Increasing the amount of special blocks Increasing the amount of enemies

Gameplay Mechanics

The mechanics of *Jumping Tetris* revolve around two primary roles: the main character, known as "The Cat," and the "Tetris Architect," each with distinct abilities and responsibilities. *The Cat* can move left and right, jump. Additionally, *The Cat* has the ability to increase the fall speed of Tetris blocks. Special jumps, such as double jump, can be unlocked by collecting specific items. On the other hand, the *Tetris Architect* controls the falling Tetris blocks, moving them left or right and increasing the fall speed of Tetris blocks. These blocks spawn above *The Cat* in randomly rotated states, and their shapes mirror the pieces from the original Tetris. The game also introduces special blocks with unique characteristics. In addition to navigating Tetris blocks, players must navigate various enemies.

Items

In *Jumping Tetris*, items play a crucial role by providing the player with the tools needed to overcome challenges and progress the level. Items appear randomly within the environment and can be picked up by the player by touching them. Each item produces its effect immediately upon pickup, with beneficial items designed to feel impactful and rewarding while harmful items pose a relevant threat to the player.

Types of Items

Items in Jumping Tetris are categorized into three main types, each offering unique gameplay effects:

- **Power Ups**
  “Power-Ups” enhance the player's abilities, granting temporary advantages to the player. “Power Ups” reward players for exploring the level and strategically collecting them when they are most needed. Examples include:
  - +1 Jump Boots: Grants the ability to perform one additional jump while in mid-air. (Double jump)
  - Speed Boost: Temporarily increases the player’s movement speed, allowing them to dodge falling blocks or other threats.
  - Shield: Protects the player from one instance of Damage. For example a falling tetris block or enemy.

- **Environmental Changing**
  These items directly impact the game environment or Game Board, offering players tools to manipulate their surroundings or respond to challenging situations. Examples include:
    - Slow-Down Clock: Decreases the falling speed of tetris blocks giving players additional time to strategize.
    - Bomb: Destroys blocks near the player creating new paths or preventing overfilling of the board.
- **Harmful**
  "Harmful" items create temporary disadvantages for the player, requiring the player to strategize around them. Examples include:
    - Slime: Decreases the player's walking speed, limiting their maneuverability.
    - Reversed Controls: Reverses the player controls (maps Left to Right, Right to Left) significantly disorienting the player.

Enemies

In *Jumping Tetris*, enemies serve as dynamic obstacles that challenge the player's ability to navigate the game environment. While they introduce a constant threat to the player, they can also provide new movement capabilities to the player by strategically using enemies.

Enemy modifiers

Each enemy is defined by a set of modifiers that determine its behavior, interaction with the player, and role within the gameplay. Modifiers are traits that can be combined to create unique enemy types and can be beneficial or harmful to the player:

- **Defeatable**
  Enemies with this modifier can be jumped on by the player character to defeat them while also gaining vertical velocity. They can be used to gain significant vertical mobility, aiding in clearing levels.
- **Damaging**
  Enemies with this modifier defeat the player upon direct contact unless the Enemy has the "Defeatable" modifier and the player lands on them with a jump. Enemies of this type significantly make levels more challenging.
- **Bouncy**
  Enemies with this modifier launch the player on touch, whether jumped on or collided with. This can be beneficial to reach platforms but also launch players into unfavorable positions.
- **Chasing**
  Enemies with this modifier actively pursue the player, creating pressure and urgency.

Combining Modifiers & Concrete Examples

Enemies can have multiple modifiers, resulting in diverse behaviors and unique challenges. Some concrete examples include:

- **Crawler**
  - Modifiers: Defeatable, Damaging, Chasing
  - A standard enemy that the player can dispose of by jumping on them, while also possibly using them to their advantage. Defeats the player on touch unless jumped on.
- **Bouncy slime**
  - Modifiers: Bouncy
  - An inflated Slime that launches players upon contact. Cannot damage the player.
- **Ghost**
  - Modifiers: Chasing, Damaging
  - A slow ghost that the player must avoid at all times. Defeats the player on touch.

Scoring

The scoring system in *Jumping Tetris* is designed to reward players for skillful gameplay. It serves as a performance indicator, encouraging players to continuously improve and surpass their previous achievements by beating their High-Score. Each Playthrough tracks the current player score, which increases based on specific Scoring Components. However, a Game Over resets the current score.

Scoring Components

Points are added to the current score by clearing levels, with higher difficulty yielding a greater amount of points gained. Time is a critical factor in scoring and will massively influence the amount gained by completing the level. This rewards quickly clearing levels using efficient strategies.

High-Score

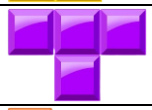
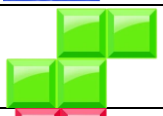
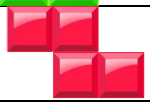
The High-Score serves as a central motivator for players, tracking the highest score achieved across all runs. The High-Score updates based on the highest score the player has achieved so far. It provides a clear point of reference, allowing players to compete with each other. The High-Score system encourages replay ability and provides a sense of accomplishment to the player.

Rewards

After every Game Over all High Score Points earned during gameplay are converted at a certain rate to the in-game currency “Points” and permanently added to the players inventory”. Currency Points are the in-game currency used to purchase Shop Items. This system offers a sense of beyond individual runs.

Blocks

In *Jumping Tetris,* the Game Board is a typical Tetris game, where blocks of varying shapes are dropped. Some of the blocks additionally have special properties to either serve as obstacles or help the player. These blocks are randomly dropped instead of a normal block and only appear in higher levels, with an increase in chance to drop the higher the level is.

Shapes	
Name	**Appearance**
I	
O	
T	
L	
J	
S	
Z	

Special Effects

Name	Effect
Lava	Upon touching a lava block the player dies
Ice	The surface of ice blocks is slippery, so that the player slides around when standing on them
Rubber	The block is bouncy and launches the player
Ethereal	The block is not solid and lets the player pass through it

Character Attributes	
Character	**Movement Abilities / Actions Available**
The Cat	Move left/right Jump / Double Jump Increase fall speed of Tetris block
Tetris Architect	Move Block left/right Increase fall speed of Tetris block
Game Modes	
Mode	**Actions Available / Goal**
Standard mode	Player can only control The Cat and increase fall speed Player must reach the Top The Tetris Architect is controlled by the Computer and drops blocks above the player
Advanced / Multiplayer Mode	Player can control The Cat and also the Tetris Architect Player must reach the Top
Scoring System	
Points/Coins/Stars/Grades/Etc.	**How it's Awarded & Benefits**
Reaching Top	Reaching Top adds points to the current score based on ● Level ● Clear time
Reach specific level	Awards skin

Level Design

The first five levels of the game will serve as a tutorial for the player. The first level will only have a normal Tetris game-board to allow the player to get used to the controls. The second to fourth level will each introduce a new mechanic one at the time. On the fifth level all of the previous mechanics will be active at once. Afterwards the game goes into endless mode where the block fall speed and the number of obstacles increase with each level. The goal is therefore not to “win” but to simply get as far as possible as the difficulty constantly increases.

Levels	
Level 1	The first level will have a normal game of tetris as the gameboard with no extra obstacles for the player
Level 2	This level will introduce the special blocks
Level 3	This level will introduce enemies
Level 4	This level will introduce the items
Level 5	In this level all of the available mechanics will be active, upon clearing the level the player will be awarded with the copper skin
Level 6+	From now on all mechanics will be active and the speed of the blocks falling as well as the chance of obstacles appearing will increase with each level

Control Scheme

Our game is designed to be played on PC using a keyboard as the primary input device. The control scheme is automatically shown when starting a new playthrough or the player can manually view it on the Main Menu. The detailed actions performed by each key are summarized in the table below:

Button/ Touch Input	Action it Performs
A	Moves the character to the left side.
D	Moves the character to the right side.
Space / W	Makes the character jump, gaining vertical velocity. Holding the key increases the jump height. A double jump can be performed by pressing the key twice, but only if the required items have been collected.
Down Arrow Key	Increases the speed at which the block descends.
Left Arrow Key (Simple Mode)	Moves the character to the left side.
Right Arrow Key (Simple Mode)	Moves the character to the right side.
Left Arrow Key (Advanced Mode)	Moves the falling block to the left side.
Right Arrow Key (Advanced Mode)	Moves the falling block to the right side.

Modes Explanation:

- **Simple Mode:** In this mode, the Left and Right Arrow Keys can also be used to control the movement of the player character, The Cat.
- **Advanced Mode:** In this mode, the Left and Right Arrow Keys no longer control the character but instead manipulate the position of falling blocks. This mode introduces the Tetris Architect mechanic, where players actively shape the environment by positioning falling blocks strategically.

Game Aesthetics & User Interface

Art Style and Visual Theme

Jumping Tetris will feature a simple and classical pixel art style.

Interactivity and Animations

The player's actions directly influence the visual experience:

- **Jumping and Running**
  The characters Movement will feature animations and Particle Systems to provide a feedback-rich experience.
- **Enemy Interactions**
  Jumping on enemies should feel satisfying by utilizing animations, sounds and particle effects.
- **Power-Up Effects**
  Power-Ups should feel powerful and have an immediate impact on the player.

UI Overview

The game will feature multiple important UI-Elements:

- **Level Gameboard**
  - A Tetris game board spanning the entire screen
  - Simple and non-distracting HUD showing only the current Timer and current playthrough score in the top right corner of the screen.
- **Main Menu**
  - Features options like Start Game, High-Score, Shop, and Settings.
  - Options will be realized as bold, geometric buttons.
- **Shop Screen**
  - A grid layout for unlockable items, such as skins.
  - Descriptions and costs appear over selected items.
- **Pause Menu**
  - Provides options to Resume or Exit to Main Menu.
  - Adds a semitransparent overlay over the current play state.