

Project Proposal

Tetris Game:

The overall game will start with a game of Tetris. A button will be pressed to begin the Tetris game. The score board will start up and begin to increase as the score should increase when lines are cleared. The Tetris grid will be displayed and will be full of empty tiles. The tiles will have several variables for whether it's full, its color, and whatever other states it would need. The shapes would be placed on the Tetris grid and would have the option to rotate, spawn or drop. The Tetris game and score will work as you expect, where blocks will drop at an increasing rate, and if the player fills a line, then it will be broken, and the part of the board above will drop. The game of Tetris is lost once a block is placed above the starting line.

Breakout Game:

Once the Tetris game is lost, the paddle, ball, and powerups would startup. The paddle has a length and a set velocity and the option to move up and down. The powerups would be dependent on the color and will be able to increase the size of the paddle, decrease the ball's velocity, increase the number of bricks broken by the ball, increase the score per hit, and increase the paddle speed. These power-ups will last a set time or number of hits based on the power-up. The breakout game will work as you would expect, except instead of a uniform rectangle of tiles, it is the Tetris board. The ball will bounce between the Tetris board, and any blocks it hits will break. There is a small chance that a broken block will drop a power-up based on the type of Tetris block it came from. The breakout game will slowly increase at a fixed rate and will have a specific number of lives. The only way to lose the overall game is to lose the game of breakout.

How they interact:

If the game of breakout is won and all the tiles are broken, then the now empty Tetris board will become a new game of Tetris. The Tetris game will start at an increased rate to increase the difficulty as the game goes on. Once the Tetris game is lost, the breakout game will begin again with the ball starting at an increased rate. Score will be increased with lines destroyed, and then will continue to the breakout game where it will increase with each block broken. There will be a starting screen and a game over screen with a restart/exit button and a start the game button. The high score for this session will be displayed at the top of the screen.

Tetris:

- Essential
 - o Falling bricks
 - o Increasing score as lines are broken

- Stacking bricks
- Rotation
- Fast drop
- Increasing drop speed
- Once lost, move to breakout
- Anticipated
 - Sound effects for drop
 - Sound effects for line clear

Breakout

- Essential
 - Ball & paddle collision
 - Ball & block collision
 - Increase score per block
 - Lose game if ball hits left side
- Anticipated
 - Powerups
 - Slow ball
 - Fast paddle
 - Long paddle
 - Score increase
 - Bomb
 - Sound effects for hits

Scoreboard

- Essential
 - Current score count
- Anticipated
 - High score