

Tile Breaker Game Documentation

1. Overview

This project implements a classic arcade-style **Tile Breaking Game** (also known as Brick Breaker), featuring a paddle controlled by arrow keys, a ball that bounces off the paddle and tiles, and sound effects for collisions. The game is visually enhanced with twinkling stars in the background.

Key Features:

- **Paddle and Ball Mechanics:** The paddle is controlled using the left and right arrow keys, and the ball bounces off the paddle, walls, and tiles.
 - **Special Tiles:** The game includes special tiles with unique rewards or penalties.
 - **Background Effects:** Twinkling stars and appealing arcade-style visuals.
 - **Sound Effects:** Collision sounds for paddle and ball interactions, along with continuous background music.
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2. Compilation Instructions

To compile the game, use the following command in the terminal:

```
g++ main.cpp fssimplewindow.cpp yssimplesound.cpp ysglfontdata.c -IX11 -IGL
-IGLU -lpthread -lasound
```

Command Explanation:

- `g++`: The GNU C++ compiler.
- `main.cpp`: The main program file containing the game loop and logic.
- `fssimplewindow.cpp`: File providing basic window management functions.

- `yssimplesound.cpp`: File for playing sound effects and background music.
- `ysglfontdata.c`: File providing OpenGL font rendering functionality.

Linked Libraries:

- `-lX11`: Links against the X11 library, required for managing window systems in Linux.
 - `-lGL -lGLU`: Links against OpenGL and GLU, used for graphics rendering.
 - `-lpthread`: Links against the pthread library, used for multithreading.
 - `-lasound`: Links against ALSA (Advanced Linux Sound Architecture), used for audio playback.
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3. External Toolkits

The following toolkits are required for compiling and running the game:

3.1 FsSimpleWindow

Description: A basic window management library used to create and manage the game window.

Source: This library is part of the provided project files.

3.2 YsSimpleSound

Description: A simple sound library for playing `.wav` files used in the game.

Source: This library is part of the provided project files.

3.3 OpenGL

Description: An industry-standard graphics library used to render the game visuals.

Download: Usually pre-installed on most systems. If missing, you can install using the following commands:

- For Ubuntu:

```
sudo apt-get install libgl1-mesa-dev libglu1-mesa-dev
```

3.4 X11 Library

Description: A window system that facilitates interaction with the X Window System. Required for creating the game window.

Download:

- For Ubuntu:

```
sudo apt-get install libx11-dev
```

3.5 ALSA Library

Description: The Advanced Linux Sound Architecture (ALSA) library is used for audio playback in Linux environments.

Download:

- For Ubuntu:

```
sudo apt-get install libasound2-dev
```

3.6 pthread Library

Description: The POSIX threads library used for handling multithreading in sound playback.

Download:

- Usually pre-installed on most Linux systems.

4. Sound Files

The following `.wav` files are used in the game for background music and sound effects:

4.1 Sound Files:

1. **bounce.wav**: Sound played when the ball hits the paddle or tiles.
2. **bg_music.wav**: Background music played throughout the game.

4.2 Download Source:

- Both sound files can be found and downloaded from freesound.org.
- Note that the **.wav** files should be placed in the same directory as the game executable for proper playback.

5a. Additional Notes

- Platform: This game is designed to run on Linux-based systems.
- Game Controls:
 - Arrow Keys: Move the paddle left or right.
 - **ESC** Key: Pause or exit the game.