

Cannon Ball

User Manual

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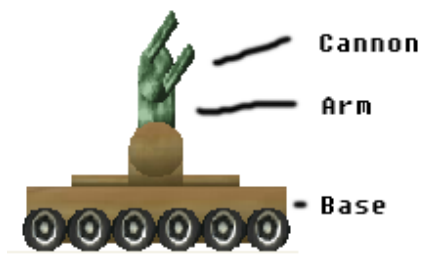
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Gameplay:

The goal of the game is to shoot and destroy cannon balls. The player has control of the tank and can shoot a cannon ball into the level. The cannon ball will then come to a stop and grow until it collides with a wall or another object. The player can then shoot another cannon ball into the level and if it collides with an existing cannon ball, the existing ball is destroyed and a point is scored.

The game ends when the tank is destroyed. The tank is destroyed if, at any point, the enemy collides with the tank. The tank will also be destroyed if a cannon ball is launched and then it bounces back into the launch pad area.

Hero - Tank



The Tank can move in the following ways:

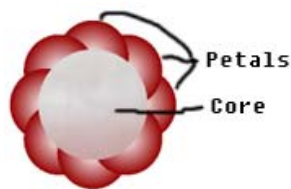
- The cannon can rotate. This is used to aim.
- The arm can stretch. This adjusts the power.
- The entire tank can also slide left and right.

Cannon Ball:

Before Growing:

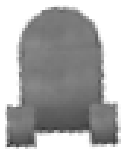


After Growing:



- Cannon balls are made up of two parts: the core and the petals. The petals surround the core to protect it.
- Shoot these from the cannon. Each ball will slow down and come to a stop on its own. If it collides with a wall or another object, it will bounce.
- When stopped, the ball will grow until it collides with a wall or another object. Also, while growing, the cannon ball will sprout petals.
- Once a ball stops, another cannon ball can be fired. If it collides with an existing cannon ball's core, the existing ball is destroyed. If it collides with a petal, the petal only is destroyed.

Missile:



- The missile bounces around the world.
- It will chase after the tank. If it collides with the tank, the game is over.
- To avoid being hit by the missile, the player must shoot a cannon ball so the missile will then home into the ball.
- Once the ball stops moving, the missile will chase the tank again.

Other Rules:

Only one cannon ball can be moving at a time.

The enemy can cross into the launch pad area. The tank must dodge it!

Easy/Hard Mode:

In Easy Mode, a cannon ball takes one hit and it is destroyed.

In Hard Mode, the cannon ball must come in contact with another cannon ball's core before it is destroyed. This requires multiple hits to knock off the petals before the core is exposed.

Controls:

The Tank has several parts that the user can control:

Cannon: Left-click and hold anywhere in the main view will aim the cannon at the mouse position. When left-click is released, a Cannon Ball will be launched out of the cannon in the direction of the mouse position.

Arm: The arm controls the power of the shot. The user can right-click and drag vertically to resize the arm. The longer the arm is, the more power the next shot will have.

Base: The entire tank can slide left and right using the arrow keys.

Small View: The user can Left-Click and drag to pan around the Hero View. Right-Click and drag in the Hero View will zoom in and out.

Scoring:

Score points by destroying existing cannon balls. A ball is destroyed by launching a cannon ball and colliding with the core of an existing ball. In Easy Mode, colliding with a petal will destroy the ball and score a point

One point is awarded for each cannon ball that is destroyed.

Multiplayer:

Two players can go head-to-head and the last player standing wins. The game goes as follows:

- 1) Player1 takes a turn and shoots a cannon ball into the area.
- 2) The game pauses and prompts Player2 to take a turn.
- 3) Player2 shoots a cannon ball into the area and can destroy any existing balls to score points.
- 4) The game continues like this until the tank is destroyed.
 - a. If at any point the tank is destroyed, the player that was in control of the tank at that time loses and the game and the other player wins.

Both Easy and Hard Mode are supported in multiplayer.

Network:

The network is for 2-Player games only. To start a network game, do the following:

- Start the server on any computer.
- On any computer (can be the same as the server).
 - Enter the IP Address of the server in “server.txt”
 - Start Cannon Ball
 - Click “Connect”
 - Click “Join” and wait for other player to connect
- On another computer
 - Enter the IP Address of the server in “server.txt”
 - Start Cannon Ball
 - Type the IP Address of the server and click “Connect”
 - Click “Join”
- Now that both players joined, the game starts.
- The gameplay is the same as multiplayer on one computer except:
 - Control of the tank is passed between the two players connected to the server.
 - Only the player that is taking a turn can control the tank.

GUI:

Main View: Will show the main game play and will receive mouse clicks from the user.

Small View: Will follow the tank if no cannon ball is active. If a cannon ball is active, the view will follow the ball. The user can also pan/zoom this view.

New Game: Initialize model and begins game.

Pause: Suspend/Resume game.

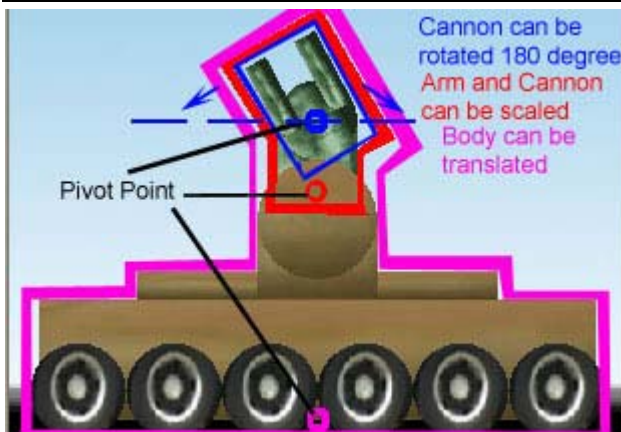
Easy Mode: Toggle between Easy Mode and Hard Mode.

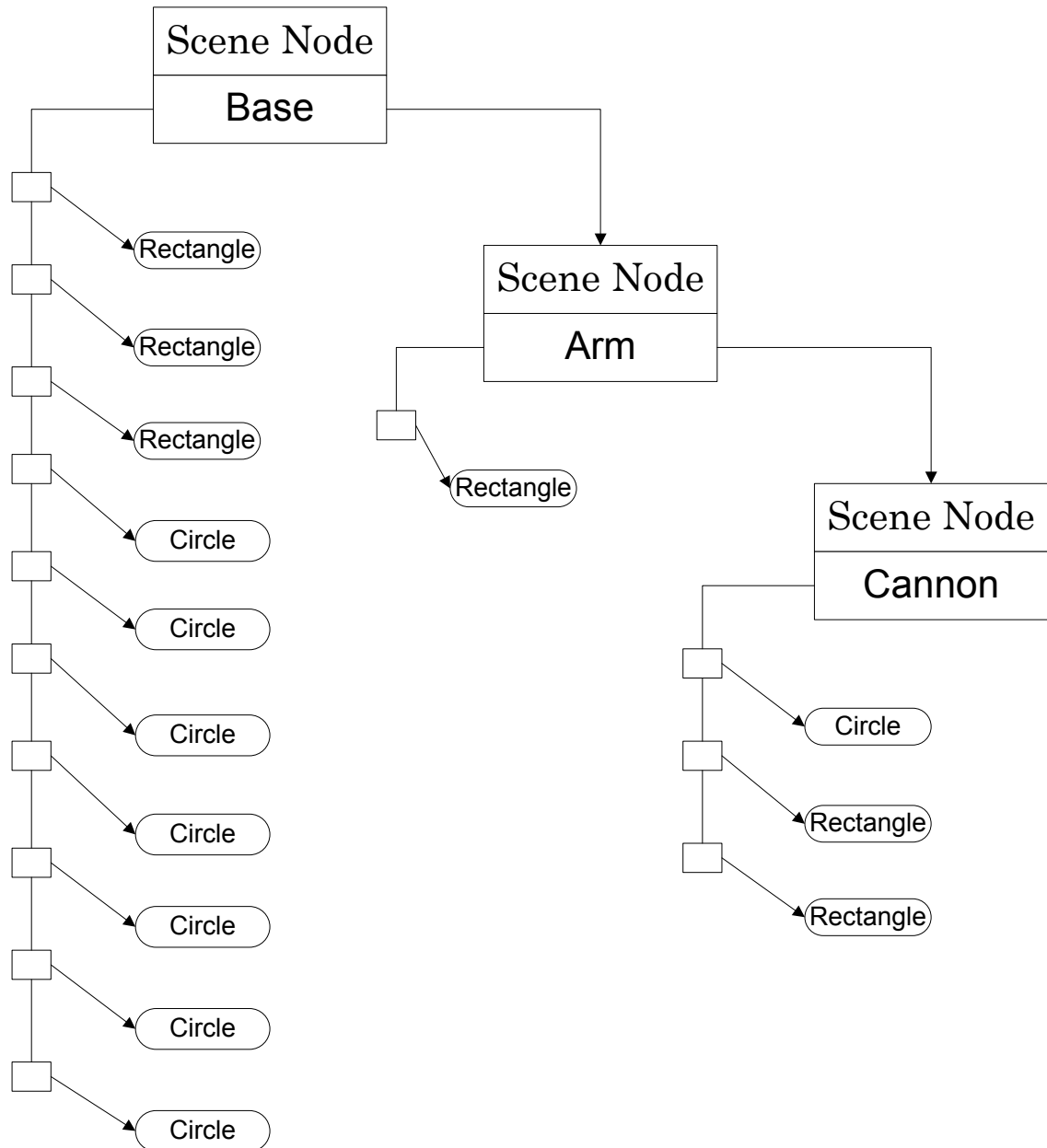
2-Player Game: Start a game for two players.

Network:

- Connect: Will connect to the server specified by the IP Address.
- Join: Start a new game on the server. Must wait for both players to click “Join.”
- Disconnect: Will disconnect from the server.

Tank Design - Movement:



Tank Design - Structure:**m_HeroNode**

Known Bugs:

- The missile will sometimes get trapped in a corner of the world and pass through cannon balls. This occurs when the missile is traveling in reverse and collides.
- The Network part of the game is not functioning correctly
 - The player can connect to the server but the server can't send updates back to the client.
 - The player

Limitations:

- Only 2 players are supported in multiplayer.
- Unable to select another type of game (Easy Mode, for example) until the player gets Game Over.
- Network support is not complete.

Future Improvements:

- Improve the AI of the missile. Make it go around obstacles instead of ramming into them repeatedly.
- Improve collision detection. Make it more precise: Especially for the missile.
- Make the balls bounce more realistically.
- Allow players to enter their names and save High Scores.
- Award bonus points for destroying multiple balls in one shot.
- Show points scored in particle effects in the world when balls are destroyed.
- Finish network multiplayer support.

Credits:

Original Game Concept:

- Wouter Visser in his game, “Gimme Friction Baby.”
 - http://jayisgames.com/archives/2007/08/gimme_friction_baby.php

Sound Effects:

- Explosion: YOYO game’s tutorial
 - <http://www.yoyogames.com/make/tutorials>
- Bounce: YOYO game’s tutorial
 - <http://www.yoyogames.com/make/tutorials>
- Engine: Class Web site. Bass sound
 - http://courses.washington.edu/css450/2008.Fall/web_contents/from_students/extras.html

Textures:

- Backgrounds:
 - Created by Darrell Westerinen.
- Missile and Tank base texture:
 - <http://www.freeimages.com/photos/showphoto.php?photo=2163&password=&sort=1&cat=998&page=1>
- Tank arm and cannon texture
 - Missile texture modified by Darrell Westerinen
- Cannon Ball core texture:
 - Missile texture modified by Darrell Westerinen

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