**Ninja Cat Castle  
Game Design Document**

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**INTRODUCTION**

This document describes a game called "Ninja Cat Castle", which is designed to be a 2D side-scroller with basic combat elements. The game will employ sprite-based animation, tiled backgrounds, collision detection and phyics using Box2D, AI, side scrolling & gravity, efficient memory management, render threading, and more basic 2D game techniques.

**TECHNOLOGY**

Spiked Acid will be developed for the Windows Platform using the McKilla's Gorilla game engine, which is a bare-bones engine developed by Richard McKenna for rapid prototyping 2D games. DirectX will be used as the underlying rendering technology. Artwork will be created in a combination of Adobe Photoshop and Flash. Box2D will be used for physics and collision detection. LUA scripting will be used to handle bot AI.

**BACK STORY**

The main character (name pending) is a ninja cat, and one day when he wasn’t paying attention, a rival clan of cat ninja stole all of his cat food! A trail of pellets leads the protagonist to the front doors of Ninja Cat Castle, where the rival cat ninja are prepared to ambush him. He then proceeds to jump, slice, and pierce his foes with pinpoint accuracy to reclaim what is rightfully his!

**OBJECTIVE**

The protagonists’ mission is to infiltrate the hostile castle and get his cat food back. Knowing that they were being trailed, the hostile clan lies in wait for him, employing all sorts of different tactics such as pouncing, blocking, shooting, and throwing bombs at him while he traverses the castle labyrinth.

Unfortunately for the clan residing in Ninja Cat Castle, the trail of food that led the protagonist to the front gate also leads him through the castle to where they have stashed the main hoard. While he’s there, the protagonist decides to return the favor and take their own food as well to rebuild his stash at home.

**GAMEPLAY**

The game will work as a side scroller with a basic combat system, with the main character able to run left and right, jump up or down onto platforms, melee attack left and right, throw shuriken in six directions (left, up, right, and diagonals), an air attack, and a counter/block move that will execute a contextual action based on the nature of what was blocked. When the block maneuver is executed, there will be a window where he protagonist is ready to react to any attack launched at him. If a blockable hitbox is to cross the main character during these invincibility frames, an action depending on the blocked attack will execute.

The enemy ninja clan is nothing to disregard however, they were able to infiltrate our skilled protagonists’ home without him noticing after all. As he continues onward, many different specialty of ninja are there to stall his progress, each having their own unique gimmick that provide different challenges to overcome.

* POUNCE CAT: The most basic grunt enemy. This enemy remains in pounce position waiting for the protagonist to get close enough, then jumps for a full out attack. Generally a pushover who can be taken out from a distance with a well-placed shuriken, a well-timed counter, or just a plain swipe of your sai blades.

COUNTER EFFECT: Body replacement technique. Replace your body with a dummy object and assassinate the assailant while he is distracted.

* PROPELLER CAT: Cat technology has gone forward very fast, as the enemy clan have invented a helicopter backpack for their ranks to use! This cat patrols a small area back and forth in the air, stopping every few seconds to release an arrow at the protagonist. Easiest way to deal with is by a shuriken thrown up, however an air melee attack or even a regular melee swipe if you can land it will take this enemy out.

COUNTER EFFECT: If arrow is blocked, slash arrow in half

* TABLE FLIPPING CAT: From the ASCII clan, this cat likes to drink his tea dangerously close to ledges. When he sees the protagonist he becomes very angry and flips his table at him in an attempt to halt his ascent. This cat also has access to a tea table pocket dimension from which he can get a new table to flip at him once again until dealt with.

COUNTER EFFECT: If table is blocked, jump off table to gain height.

* HEAVY ARMOR SAMURAI CAT: This cat dons a heavy suit of armor with a daikatana and is determined to block the protagonists’ path. If the protagonist tries to slash or throw a shuriken at him, he just blocks it and gets pushed back a tiny bit. The only way to deal with this cat is with a well-timed block or avoiding him altogether.

COUNTER EFFECT: If sword swipe is blocked, dummy technique followed by assassination.

* BOMB CAT: This cat’s head is a bomb. If this cat catches sight of the protagonist, he takes off his head and lobs it at him. If not defeated, the bomb cat will regenerate a new head to throw at him again.

COUNTER EFFECT: None, the explosion radius is too big for the protagonist to do any trickery.

The protagonist will take damage whenever he is hit by an enemy sprite, whether it be a deliberate attack or accidentally touching an idle enemy. He has three hearts of health to begin with and will lose one heart of health for every time he takes damage. If hearts reach zero, he dies and the level starts over (or from the checkpoint if reached). The protagonist can restore his health by finding and eating a fish.

Cat food pellets are both scattered around the level and are being carried by enemies. If the protagonist collects 100 pieces of food then he gains an extra life. If he runs out of lives it is game over and the game returns to the intro splash screen.

**CONTROLS**

This game will be played using just a keyboard. Once started, use the following:

* **A** – Move/Aim Left
* **D** – Move/Aimd Right
* **W** – Look/Aim Up

–Combine A/D and W to aim diagonally

* **K** – Jump
* **J –** Melee attack
* **L** – Shuriken Throw
* **S** – If held down and Melee attack is pressed, initiate ninja block stance
* **ESC** - This pauses the game and presents a pop-up window to the player asking them to continue when they are ready. If a game is not in progress, ESC does nothing.
* **ENTER** – Select menu item
* **UP ARROW** – Highlight next upper menu item
* **DOWN ARROW** – Highlight next lower menu item

**GRAPHICAL USER INTERFACE**

As far as the GUI is concerned, if we consider

* **Splash Screen** – A small intro animation will be played showing the team name and transitioning into the Menu screen. If ENTER is pressed, then it skips straight to the Menu screen.
* **Main Menu** - The player can select from the following options:
  + **Start Game** – Since there is no save progress, this starts the game from level 1.
  + **Help** - If pressed, the game will display a help screen with information about the game’s story.
  + **Exit** - If pressed, the game program will exit.
* **In-Game GUI** - When the game starts, the player will be presented with three basic HUD elements:
  + Three hearts representing health in the top left
  + Amount of shuriken left in the top right
  + Amount of lives left in the bottom right

**ARTWORK**

All artwork in the game will be original. The following needs to be created:

* **Protagonist** – He is a ninja cat, and needs to do ninja cat things, such as:
  + Walking Right
  + Walking Left
  + Jumping Ascend
  + Jumping Descend
  + Attack Left
  + Attack Right
  + Attack While Jumping
  + Throw Left
  + Throw Right
  + Throw Up
  + Throw Diagonal Up-Left
  + Throw Diagonal Up-Right
  + Taking Damage
  + Dying
* **Pouncing Cat** - Simple sprites, each require animations for:
  + Waiting to Pounce
  + Pounce
  + Taking Damage
  + Death
* **Propeller Cat** –
  + Flying Left
  + Flying Right
  + Shooting Down Left
  + Shooting Down Right
* **Table Flipping Cat** –
  + Idle
  + Flipping Table
  + Taking Out New Table
  + Taking Damage
  + Death
* **Heavy Armor Samurai Cat** –
  + Walking Forward
  + Attacking
  + Blocking
  + Death
* **Bomb Cat** –
  + Throwing Bomb
  + Regenerating Bomb
  + Taking Damage
  + Death
* **Ceiling, Floor, & Wall Tiles** – The castle will have a basic brick layout with different colors depending on the level.
* **Background Tiles** – Various castle-like atmosphere background like candles and portraits.

**SOUND EFFECTS**

All sound effects will be original. Sounds must be made to coincide with each of the following events:

* **Attacking**
* **Jumping**
* **Landing**
* **Attacking on the Ground**
* **Attacking in the Air**
* **Protagonist Taking Damage**
* **Hitting Enemy**
* **Propeller Whirr**
* **Bow and Arrow**
* **Stab**

**MUSIC**

Game Music will be upbeat and use square and sine waves with a drum kit.