

Superfly Adventures Design Document

Ye Olde Bucklers of Swash:
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1 Story

“Alas! Princess Pabst has been kidnapped again by the insidious King Evan! Journey through West Dorm, overcoming King Evans vast goon hordes to come to the rescue of the fair princess!”

2 Gameplay Overview

The player takes on the role of Superfly, neophyte mathemagician of West Dorm, in his race to rescue his beloved Princess Pabst. The player will guide Superfly through a series of treacherous levels packed with a fierce menagerie of enemies in an effort to stay one step ahead of King Evan. Superfly Adventures is a 2D, sidescrolling adventure/puzzle game implemented in the POP framework. The

game is loosely based on the Super Mario Bros. series by Nintendo and attempts to capture its core gameplay elements.

2.1 Objective

The objective of the game is to navigate the player through all three levels of the game and defeat the fair princess's captor, King Evan. After all three preliminary levels have been completed, the player will fight King Evan. If the player defeats King Evan, the game is completed.

2.2 Controls



The game uses the arrow keys and the space bar. The controls work as follows:

- ← Move Superfly left
- Move Superfly right
- ↑ Jump
- ↓ Not used

Space Hurl math (see Section 2.3.1 for more details)

2.3 Powerups

There are two powerups available in the game. The first, a mathematical formula, allows the player to damage enemies at range by hurling mathematical balls of energy. The second, a pogo stick, increases the player's speed and allows him to jump higher than normal. A powerup is obtained simply by moving Superfly onto it. Once Superfly is powered up, he remains in the powered state until either he is damaged by an enemy, falls into a pit, or gains a different powerup. If Superfly is damaged by an enemy while powered up, he returns to his normal state, but does not lose a life. However, if he falls into a pit while powered up, he loses a life in addition to reverting to his normal state. When Superfly moves over a powerup when he is in a powered state, he loses his old powerup and gains the abilities granted by the new powerup.

2.3.1 Hurl Math



If the player picks up a Hurl Math powerup, which appears as the equation $\int \frac{1}{x} dx$, the player gains the ability to launch math symbols using the space bar. These are launched upward and to the right. These symbols are always launched to the right, regardless of which direction the player has been moving. These bounce ahead for 3 seconds or until they collide with an enemy or a wall. When the math symbol collides with an enemy or bullet, the math symbol is destroyed and the enemy receives damage. If the symbol collides with a wall, it bounces off. The player is awarded points for destroying enemies with math symbols just as if he had destroyed them by jumping on them.

2.3.2 Pogo Stick



If the player picks up a Pogo Stick powerup, which appears on the screen as a pogo stick with a yellow star on it, then the player gains the ability to jump higher. Additionally, when using the pogo stick, Superfly moves laterally 33% faster. The pogo stick does not allow the player to destroy spiker enemies by jumping on them, but walker enemies and cannon balls may be destroyed in this fashion as normal. The player is awarded points for destroying enemies by jumping on them as if he were unpowered.

2.4 Pabst Cans

As Superfly progresses through the game, he may collect cans of delicious Pabst Blue Ribbon beer. These cans are collected by moving Superfly over them. Each can of Pabst Blue Ribbon gives the player 10 points.

2.5 Platforms and Pits

Superfly walks on platforms. These are placed mostly along the bottom of the screen, but also appear higher up on the screen. The absence of a platform at the bottom of the screen is a pit. If Superfly falls into a pit, he is killed and the level resets. Walking enemies may also fall into pits. If they do, they are killed and removed from the world.

2.6 Reset Level

When Superfly dies before completing a level, the level is reset. When a level is reset, all enemies, powerups and coins are moved back to their starting positions. Additionally, Superfly is moved back to the far left-hand edge of the level.

2.7 Level Progression

At the end of each level, there will be an exit portal. Jumping into this portal will advance the player to the next level. This will increase the player's score by 150 points. Each level has a different background image, set of enemies, and platform architecture. Levels may also have different sizes. Superfly begins each level on the far lefthand side and the exit portal for each level is on the far righthand side.

2.7.1 Level 1

Level 1 will have a "Wild Wild West" theme. The enemies will have a western theme, and the background image will be a desert scene full of cacti and tumbleweeds.

2.7.2 Level 2

Level 2 will have a "Trick or Drink" theme. The enemies will be wearing halloween costumes, and the background image will be dark and spooky, containing jack-o-lanterns and black cats.

2.7.3 Level 3

Level 3 will have a "TQ Night" theme. The enemies will have a tequila-related theme, and the background image will contain many lemons.

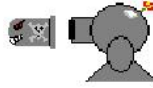
2.7.4 Evan's Lair

Evan's lair will be a standard West single. The level will therefore be quite small. There will be hints of pornographic images on the walls, but these will be blurred out. Evan will be the only enemy on this level (see Section 3.4 for more on Evan). When Evan is defeated, the game ends and a dialog box is displayed. The dialog box displays the player's score and invites him to begin a new game. The player is allowed to keep the powerup he ended the game with if he starts a new game in this way.

3 Enemies

There will be 4 types of enemies, namely, cannons, walking enemies, spiked enemies, and Evan.

3.1 Cannons



Cannons are stationary, indestructible enemies that fire bullets. Cannon balls travel in a straight line to the left for 3 seconds or until they hit Superfly. Superfly may avoid damage from a collision with a bullet by jumping on it, which yields him 2 points. Otherwise, Superfly is damaged by impact with a cannon ball. The cannons themselves are effectively walls. Superfly may stand on top of a cannon, but cannot walk through it. Similarly, other enemies may not walk through cannons.

3.2 Walkers



Walkers will begin by walking toward the left side of the screen. When they collide with a wall or another enemy, they will reverse direction. Walkers are destroyed when they collide with the Superfly. Superfly is damaged in this situation unless he is jumping on the walker. Walkers are also destroyed if they fall into a pit (see Section 2.5). The player gains 5 points for jumping on a walker.

3.3 Spikers



Spikers walk in the same manner as walkers. They are not destroyed when they collide with Superfly, however. When they collide with Superfly, he is damaged and thrown upward if the damage doesn't kill him (see Section 2.3 for more information about Superfly being killed by damage). Spikers may only be killed by mathematical energy (see Section 2.3.1). Killing a spiker yields the player 20 points.

3.4 Evan

Evan will randomly wander around, evading Superfly's magic if it is hurled at him. Evan will fire projectiles at Superfly. Unlike the cannon's projectiles, if these projectiles are hopped upon by Superfly, he will still receive damage. Superfly will damage Evan by jumping on him or by hitting him with mathemagical energy. When Superfly jumps on Evan, he will be propelled away from Evan. Superfly will have to damage Evan 3 times in order to kill him. When Evan is killed, the player is awarded 300 points.

3.5 Scoring

The player is awarded points for defeating enemies, collecting Pabst cans and completing levels. The player is awarded 2 points for jumping on a cannonball, 5 points for jumping on a walker enemy and 20 points for destroying a spiker enemy. Collecting a Pabst can gives the player 10 points. The player is granted 150 points for completing each of the 3 preliminary levels and 300 points for defeating King Evan.

4 Graphical Interface

4.1 Status Message

There is a status message at the bottom of the window which displays the current score, number of lives, and frame rate. This status message will also display the amount of time left to complete the level if time permits the addition of this feature.

4.2 Perspective

This game is a 2d side-scrolling adventure game.

5 Framework

This game is built using the POP framework written by Rudy Rucker.

6 Schedule

The prototype will be completed by February 10, 2004. The entire game will be completed by February 17, 2004. See <http://www.cs.hmc.edu/courses/2004/spring/cs121/twiki/bin/view/Team1> for a more detailed Project timeline.

7 Budget

Our budget will strictly be \$0.

8 Extra Features

The following features will be implemented if enough time remains before the code freeze on February 17, 2004.

8.1 Extra Lives

An extra life power up will be added to the game. This powerup will simply give Superfly an extra life. Additionally, Superfly will be granted an extra life every time his score reaches a multiple of 100 points.

8.2 Timer

Each level will have a set amount of time in which the level must be completed. If the player fails to reach the end of the level before the timer runs out, he dies and the level is reset. When the level resets, the timer also resets. At the completion of each level, the player receives one point for each second not used in the timer.

8.3 Extra Boss Levels

The ending of each level will sport a mini-boss. These extra bosses will be similar to Evan, in that you must hit them 3 times. Again, similar to Evan the mini-bosses will be located in their own level.

8.4 Sound

Due to the difficulty of acquiring appropriate .wav files, sound will only be a feature of the game if time permits. If we are able to acquire the appropriate .wav files, we will have sounds at such times as gaining powerups, completing levels, and death.