

WPF Game

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Abstract

The project is a side scroller that draws inspiration from Google Chromes' dinosaur game easter egg. It is going to be computer science themed with a player that is running and trying to avoid "bugs and broken windows" as obstacles. The form of currency in the game is coffee, which can be used to buy in game upgrades. The main goal is to survive as long as possible, and you are told the amount of time you survived after you lose.

1. Introduction

This is a project that we are doing for a class. We don't expect to publish it or for it to have a large user-base, but we think it will be a fun and challenging game. It will follow the generic platformer design with the player auto running and incrementing the speed the longer you survive. The user will have to jump to try and avoid the obstacles. Challenges we foresee are getting the screen to scroll and making sure everything is timed correctly.

1.1. Background

If you have not played a platformer before, they are two dimensional games with a player that can move within that plane. Examples of games like that include the original Mario games, Flappy Birds, Terraria, Donkey Kong and many more! These games of our childhood have inspired us to create one of our very own.

1.2. Challenges

1.2.1. Scrolling. The screen needs to scroll to the right. That is going to require auto generation of the screen from the right and deletion from the left to give the user the illusion of movement.

1.2.2. Timing. There are many elements that rely on a system for keeping track of time. The obvious one is the user needs to know how long they survived. Other than that though, enemy and player velocity depend on a the amount of time passed (in this instance pixels per second).

1.2.3. Pixel Art. All graphics are going to be complicated since its on WPF, and we must implement a system that consistently updates the window so that you can see the graphics move. Not only do we need to time movement, but we also need to change the art with every update so that it looks like characters are moving (walking, running, flying, etc).

2. Scope

We want there to be a character that will start auto running toward the right when you hit "start". When the character is running randomized obstacles (broken windows and bugs) should be generated from the right of the window; the player will have to avoid them by jumping or ducking. The longer you survive (time should be displayed on the screen and counting as you play) the faster the character will run. When you die it will display the time that you survived as well as items collected on that round. The only item is coffee which can be used to buy upgrades (minimally one upgrade). The requirements seem simple at first, but are going to be difficult to fulfill.

2.1. Stretch Goals

2.1.1. Stored High Scores. We want to keep a record of the top ten scores and allow the user to enter a name to associate with it (just three letters like the retro games in arcades). This should be accessible from a button on the menu. The goal is to make it keep track even if you close the game and re-open it.

2.1.2. More Items. We want to add more items to buy. Those could include different sprite packs, more weapons, and possibly a companion (a huge stretch would be different themes). All to be purchased with varying amounts of coffee.