

Interactive Programming

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1 Project Overview

Our Interactive Programming project is a side-scrolling, platforming game that features a small hamster named Hambo. The player controls Hambo through keyboard input, jumping from platform to platform, collecting as many carrots as he can in order to win the game. We primarily utilized the PyGame library as our main resource for this project.

2 Implementation

There are a few major components to our project. In terms of class definition, we had different files for defining the environment, which consisted of the platform and carrot sprites, and the character sprite. Additionally, our game physics was implemented as part of the character sprite's definition because it would primarily impact this sprite. In order to have accurate physics mechanics, we used vectors to store the position, velocity, and acceleration of the character.

Another important aspect of our game was collision detection, which was used to determine whether the character was landing on a platform or not as well as whether the hamster had eaten a carrot. We then used this information to update our game accordingly, and ensured that the interaction between all of our sprites worked appropriately.

3 Results

Our final result features a game avatar, called Hambo, that is a purple hamster. Our game has basic physics, including gravity and friction. Additionally, there are several platforms in the level, which have carrots on them for the player to collect to score points. These points are displayed on the screen as a carrot count.

Additionally, the game environment scrolls as the character moves across the screen, so that the main character is always within the frame, and more platforms will come onto the screen. The initial platforms locations are predetermined, but by wrapping them around the screen, the level becomes endless, so new platforms are continuously generated.

4 Reflection

All in all, we feel that our project went fairly well. We sufficiently met the minimal requirements that we set for our selves, and managed to care a little bit for the aesthetics of our project. While we are a little disappointed that we did not have the time to create levels, we accept that this was due to the time scope of the project and that we laid sufficient groundwork. We had a lot of fun working on this.

Figure 1: Hambo Game

