Platforming Game

Extra Credit

Project Description:
Future 2340 students can make a 2-dimensional platforming game, similar to old school Mario or Sonic games. Students will be responsible for implementing all of the required functionalities to play the game. The player will be able to move a character across a platform, this includes movement in 3 directions(right, left, jumping). Enemies and obstacles will be situated throughout the map, these can be of unique design. The ultimate goal of the game will be for the player to make it towards the end of the platform, while collecting any sort of collectibles on the way. The minimum playtime for this game will be 80 seconds, and the game must incorporate a change in map design or background with respect to progression. Future milestones will build upon your work and detail which new features to add. For more detailed requirements, see the project outline.

Iteration 1: In this iteration, students will implement a starting menu for the game. The starting menu will allow the player to input a (non-empty string) name and select a difficulty level which will determine the player's health (how many times the player can take damage before losing).

- ☐ Be able to select difficulty, which updates player's health respectively
- ☐ Player inputs a non-empty string name

Iteration 2: In this iteration, students will design the map for the game. The starting screen from the previous milestone should now lead to the main part of the game, a map with ground and platforms to travel on, and a finish line at the end. Students are encouraged to also create a moving camera that moves along the map in this phase.

- ☐ Start screen
- ☐ Collidable platforms (must show collision properties)
- ☐ Finish line
- ☐ Movable camera (optional implementation)

Iteration 3: It is now time to create the playable character and their move set. Classic games allow players to walk left and right and to jump, but any creative ideas are great. The character should have an amount of health dependent on the difficulty - the harder the difficulty, the fewer hits the player is allowed to sustain before losing the game. As there is now a movable character, this iteration is also when the player should be able to successfully move the character to the finish line and trigger the win screen. The win screen should congratulate the player (ideally using the name the player inputted in the start menu), and offer the option to play the game again.

- ☐ Character sprite
- ☐ Character must move in 3 directions (right, left, up/jump)
- ☐ Jump functionality must be consistent and reflect gravity
- ☐ Character must move across platform
- ☐ Win screen

Iteration 4: A platforming game is no fun if there are no threats to the player - in this iteration, it is time to make it possible to harm the player with obstacles, including moving enemies and stationary traps. All groups should have at least one stationary hazard (such as a spike, a mouse trap, or any other ideas you may come up with) and one threat which moves (which could be an enemy, a swinging pendulum, or even an uncontrolled forest fire which follows the player as they move toward the finish line). The level of injury caused to the player character by these obstacles is the students' decision to make. Furthermore, now that players can be injured, it is now time to implement a death screen that appears when the player runs out of health. The death screen should inform the player that they have lost, and ask if the player would like to restart.

- ☐ 1 stationary hazard
- ☐ 1 movable hazard
- ☐ Character health updates upon collision with threats
- ☐ Death screen with restart functionality

Iteration 5: Let's give the player something to do while they are dodging the obstacles. In this iteration, students will implement at least two types of collectible items, one which does not affect gameplay (such as coins) and one which does (health-restoring potion, power-up ability, etc). The game should track how many of the former were collected in the game, and tell the player this information at the end of the game.

- ☐ 1 type of collectible currency
- ☐ 1 type of collectible power-up
- ☐ Game statistics shown on the win/lose screen