Authors

Samuel Wasmundt and James Merrill

Name

Four Seasons: The Expendable Man

Brief Description

The game type is a side-scroller that consists of 4 distinct minigame stages that last a "day". The day within the game is used to represent the progression of time. As the day transitions from morning -> afternoon -> evening this will represent the entirety of that minigame. The next day represents the start of the next minigame. Each day -> day transition actually represents a seasonal switch (ie: fall -> winter) and with it a small cut-scene will be used to illustrate this change as well as allow for the game mechanics to make the necessary switch (ie: sled -> bicycle).

The seasons will transition from summer -> fall -> winter -> spring, and the players will control a hang-glider -> parachute -> sled -> bike, respectively. With these each minigame would have its own look and feel by slightly altering the game mechanics as described later. The primary goal of the game will to be to scale to the top of the leader boards and make a name for yourself amongst the elite of 4 Seasons.

Detailed Description

Summer: Primary mode of transportation will be via hang-glider the user can control by adjusting mechanics such as drag && lift. This portion will be a side scroller game that will consist of the player and several other hang-glider AI. The player will able to fly into particular powerups that will modify speed, control, vulnerability, etc. Additionally there will be air streams that boost the players speed and will be critical to maintaining flight. Another unique portion of this minigame is the idea of a wind stream tail that is used to nock other players out of the sky by cutting them off with your own air stream. If the player gets hit by this air stream then they will fall from the sky in particularly amusing fashion and be placed at the place of the collision with a minor reduction in points. An example of this would be similar to snake or tailblazers from Fusion Frenzy for Xbox. Scenery will be sunny, a few bright clouds, and some nice green scenery.

Fall: Primary mode of transportation here will be via a parachute controlled handle bars that will push the player left or right on the screen. This minigame will consequently be a drop-down style game with the player trying to fall upon point bonuses that are floating within the air. Here there are no AI that are trying to smash you into the walls, however there are certain physical objects that will cause a spectacular display of death. (such as spikes that come out of nowhere, or swinging axes, etc.) The gravity will remain relatively constant here, initial speed up but reach terminal velocity very quickly, from there the feel will be collect as many items floating in the air while avoiding horrible deaths. To get the fall feeling, leaves will be floating around the player as well as some that could be lazily falling that would be placed as an overlay to the actual game level. An additional option that could be implemented

here to give the player a "crazy" mode is to have the player not start with the parachute open and have them not achieve a terminal velocity, this would introduce massive point bonuses, but also would cause the player to die a lot more, thus it's a high risk/reward idea to the user, but really it's something that would average out in the end due to weighting of factors. (ie: though they would be getting massive point bonuses for each one that they are collecting, because the player cannot move from left to right that fast the total point bonuses taken in will be relatively similar to that achieved by the player using the parachute the entire time)

Winter: A sled will be the primary transportation mechanism for this stage. Here things are switched up yet again by presenting the player with an over-the-shoulder viewpoint. The player will be going sledding continually downwards but with varying steepness and jumps. Here the player will have to avoid trees and other scenery. Two interesting ways to take the idea of snowmen are to have them be avoided and each time they are avoided you are awarded a bonus for each consecutive snowmen missed, or alternatively have the objective be to hit snowmen, who doesn't like blowing stuff up into one large, powdery, awesome explosion to achieve points. Additionally there would be snow jumps that could be gone over that would result in the player flying through the air allowing for aerial-acrobatics to be performed resulting in points. The scenery will be snowy, with snow falling in a similar fashion to that of the leaves, that is falling as an overlay to the actual game play.

Spring: The transportation for this season will be a bike, the mechanics of this should be very similar to something such as Trials HD, having introduced basic aerial stunts with the sled and jumps, and this will be expounded upon in greater depth with this season. The jumps will become bigger, and the possibilities for cooler stunts will become available. The scenery in here should transition from a dull dreary ending of winter, into a fresh and vibrant ecological paradise. A different take that could be used is to transition to spring but make the scenery more geared towards stunt ramps, etc.

Scalability Plan

- The simplest possible design for this game consists of 4 separate mini-games with separate level design and control mechanics.
    - At their simplest, each minigame should have the player progressing throughout the level with a few obstacles.
    - Each level should be easily distinguishable as one of the four seasons.
- Given enough time, the team could add:
    - Dynamic levels that react to the player (Leaves swirling, flowers blooming, etc. as the player passes)
    - Increased complexity to the core mechanic of each level (enemies that might cause the player to crash, powerups, etc.)
    - Transitional cutscenes between each season
- Once the primary mechanisms are in place adding to the level length for each minigame will be fairly easy allowing for fine tuning to achieve optimal player interaction.

Game Principles Discussion

- The outcomes to player action and rules should be transparent - It should be obvious as to why the player moves and dies. (Running into a wall at high speed = death .)
- Each season should contain some amount of challenge. If the experience boils down to a leisurely bike ride through spring with the player's actions and events on screen having little impact on the outcome, it's not really a game.
- The game should provide some sort of feedback to let the player know how they are doing/ how close they are to completing the level.
- Points should certainly be earned rather than given. (ie. It's better to award the player a few points for some action rather than a million points for no reason) This improves the re-playability of the game by motivating the player to achieve a higher score on subsequent play-throughs.

Design Challenges

- This game can potentially be very graphically intense as each season should look completely different from the last and potentially react to the player.
- The seasons should be balanced such that either all seasons are of similar difficulty to avoid frustration, or have each season scale in difficulty (first season is easiest, last is hardest). Be advised: Even if you decide to make some seasons harder than others, every season should be easier in the beginning and grow to be more difficult as the season progresses so that the player can grow accustomed to the controls, but does not grow bored by the end of the level.
- This game can potentially be very graphically intense as each season should look completely different from the last and potentially react to the player.

Technical Overview

- The team must create implement 4 separate mechanics for moving the player through the separate seasons. The primary difficulty here lies within getting different physics engines.
- A side effect from the 4 separate mechanics in one game that will need to be overcome is coordination. The game will be just that one game, but it will consist of 4 distinct parts that need to be able to meld together into what appears to be one game.
- There's the challenge of how to evaluate the players skill and correlate this to a score. A delicate balance will need to be struck between several key areas in the game: death avoidance, powerup/token gathering, and player tricks. These will need to be evaluated in a manner that prevents a dominate strategy from emerging.
- Each mode of transportation should be quite simple in its implementation, but should still feel natural to the concept of the transportation (Example: Hang gliders pick up speed by diving downwards and slow down as they point upwards)

- Utilizing libraries such as “Three.js” a 3D engine, the world should be created in 3D space, from here various point bonuses and game over events can be incorporated as well as adjusting the camera angle to be appropriate for the particular minigame that is being implemented. Leveraging these abilities this design becomes manageable; additionally the game can be less beautified thus allowing for completion within a limited time span.

Technical Challenge

- The team will be essentially creating four different games.
- Each separate minigame should be implemented as simply as possible to meet the time constraints, once the basic functionality is implemented eye-candy can be introduced.
- One issue that may present itself is the issue of scale. If the levels are significantly large they may reach a point where they become too large to load upfront. At this point a form of dynamic rendering will be needed to cut back on this sever overhead, this would be an additional complexity that if completed would offer improved performance, but isn’t necessarily needed for smaller projects.
- To make the game play smooth, adequate transitions from season to season will be needed. This would ideally be achieved with cutscenes however if there isn’t anyone within the group this may be overcome by simply fading the screen to complete blackness and then when the screen fades in the player will have transitioned seasons as well as transportation mechanisms.
- An interesting challenge that this team may face is the idea of dying. The minigames can take one several different aspects, they can either be intentionally designed as hard levels forcing the player to die in many spectacular and cool ways, this would be by intent. If this is too hard to implement then the game could be geared towards an easier style, resulting in the player dying less thus preventing the need for a flashy death in multiple scenarios and just have one generic one. Having the detection for multiple ways of death could prove to be a significant task in both determining when specific events occur as well as actually coding those events.