

Space Racer GDD

ABSTRACT / FORMAL ELEMENTS

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Abstract

High Level Concept

Space Racer (working title) is a 3d sci-fi local multiplayer racing game in space. The player controls a spaceship in third person and races against other ai/players competitively on closed and open circuits. The game combines open, fractal-like landscapes and narrow-pathways through which the player must race at a high velocity.

Players race across multiple planets in a single race by combining landscape tracks and event-based take-offs. During free-flight the player has to race to the next planet and avoid floating obstacles in space. During the race, the player can pick up various temporary power-ups that enable the player to shoot down his/her opponents and increase the ship's velocity. The environment plays a big role in this game; players are faced with challenges such as asteroid rains, tricky jumps and narrow spaces that the player must clear in order to win the race.

The game also features several time-based modes in which the player must race against the computer, the clock or pass a set velocity threshold on a closed circuit.

Unique Selling Points

The game is unique in the sense that it combines free-flight with path-following racing. Fractals also have not been used in racing games taking place in space. The game combines cell-shaded cuteness with rough high-action gameplay.

Design Goals

- To build a fully functional c++ game using a 3d render engine
- Create a physics-engine from scratch
- Create a local multiplayer game
- Work with high-level design patterns
- Create graphics using DirectX11

Formal Elements

Players

The player can play 8-player versus against computer or 4player versus local multiplayer. The game also supports single player versus environment in the challenges game-mode.

Objectives

The objective of the game is to become first place in a race. The player has to outwit her/her opponents using his weapon and racing abilities. The secondary objective is to get all the gold medals on the objectives.

Controls

Button	Reaction/Usage
Joystick direction	Turn the ship in joystick direction
Shoulder Right	The ship accelerates forward
Shoulder Left	The ship activates brakes
Joystick/DPAD	Navigate menu
A	Confirm menu
B	Back menu
Start	Pause game

Rules

Objects	Action	Reaction
Avatar	Flying / Driving	Progressing in a race
Obstacles	Hitting the avatar	Lose health and position. When health is zero the player explodes.
Power-ups	Hits the avatar, activated	Temporary improvement to ship.
Timer	Reaches zero	When the timer hits zero it's game over.
Finish	Completed track	When player finishes the track the racer is awarded point for his/her position.
Objective	Clearing	When the player completes an objective, the player is rewarded with a medal.

Resources

The player controls a ship with the following stats: Health, Ammo and boost. The player can also pick-up items during a race to temporarily increase health, boost or ammo.

Conflict

The player must overcome conflicts to finish the race. Firstly, the player must beat other opponents in order to win. The players can shoot at each other and bump them off the track. The player is also faced with environmental obstacles such as: hard-to-navigate sections, tricky jumps, difficult turns at high speed and personal position-based events such as asteroid rains. The player must also overcome specific conflicts belonging to a game-mode, such as racing against the clock.

Outcome

The player can win either by ending in the top 3 during a race, a tournament or by clearing a certain objective stated by the game mode. When racing in a tournament the player is assigned points for his/her position in every race. When playing other game modes, such as trying to pass a certain velocity threshold, the player can win a bronze, silver or gold medals for his/her performance. The player can also die, or run out of time depending on the game mode. When a player dies, he/she either loses the objective or respawns further back in the track.

Boundaries

When racing on the planet surface the player is restricted to ride on the track. The player can go forwards or backwards on the track but is restricted to divert too much by utilizing track heights, obstacles, invisible walls and a warning message. When the player diverts too much still, the ship explodes.

When racing in free-flight the player is bound going the right the direction. This is enforced by making automatic turns when going too far off. When the player moves too far off, a warning message is displayed. When this is ignored, the ship explodes.