Simulation & Animation - SS 2022

Fury Road
Alpha Version

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1 Execution instructions

The game can be played in a web browser, preferably Mozilla Firefox. Node.js is required to install the packages and run the local server. First, open root folder in the terminal and run *npm install* to install the required packages and then *node server.js* to run the local server. The game will be available at *http://localhost:8080*.

2 Game manual

2.1 Description

Fury Road is adrenaline-filled muscle car racing game packed with explosive physics, spectacular effects and graphics, innovative game play mechanics and good old fun!

2.2 Objective

The car has to avoid obstacles, such as an enemy car, moving train and bus stop. The rest of the gameplay, i.e. racing and reaching objectives, enemy car movement, remaining techniques and connection of rigid body dynamics and path interpolation will be present in the final release.

2.3 Controls

To move the player's car in different directions use arrow keys. The car cannot turn unless it has some velocity.

"ArrowUp", "ArrowDown" - velocity acceleration.
"ArrowRight", "ArrowLeft" - turn the car right and left.

3 List of techniques

We implemented two techniques: path interpolation which is represented in the game scene like a curve with a moving train; and rigid body dynamics can be seen if you move the car into another scene object. For rigid body dynamics a velocity vector is displayed like yellow line on each movable game sprite.

3.1 Path Interpolation

Path interpolation technique implementation can be found in **PathInterpol.js** file.

3.2 Rigid-body dynamics

Rigid-body dynamics realization can be found in **app.js file**. Class Car defines physical properties of an object, function **collide** detects collision and function **collisionVector** calculates impulse between two objects.