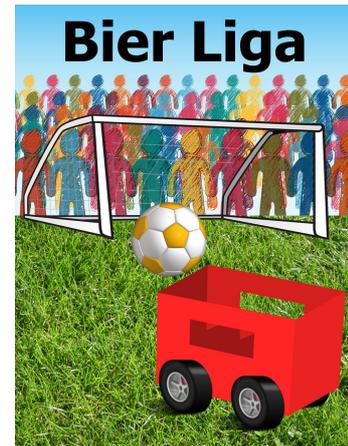


# Bier Liga



„Bier Liga“ is a soccer game. You control small RC powered Beer crates. The goal is to score the boll into the opposing net.

Controls :

Effect	Player 1	Player 2
Moving the crate	W,A,S,D	Arrow keys
Toggling the camera	Space	Numpad o
Boost	Left Shift	Right Ctrl
Jumping	H	Right Shift
Reseting the car	V	Numpad Enter

## Development:

The Game features two Dynamic boxes and a Ball. The aim of the game is to score a goal by driving into the ball with the Vehicle.

I have implemented a splitscreen mode, by drawing all object except the HUD twice each frame with different viewports.

The Camera is moved by moving the Vehicles. Each player can toggle the direction of the camera to either face the ball or the cars fourward direction by pressing space.

A Directional Light is used to illuminate the objects.

The Adjustable Parameters are adjusted in the settings.ini file. The brightness is set by multiplying the ambient value from the Material with a factor between 0 and 1.

I use Nvidia Physx as our Physics Engine.

Loading the models is done via assimp<sup>1</sup>, text is displayed with freetype<sup>2</sup>.

When a goal is scored, particles that look somewhat like beer foam. They are updated on the GPU side via a compute Shader. I have oriented my code from the CGUE Turorium.

The ball is textured via procedural Texture. I have implemented a noise texture generator in our project, which then gets passed to our shader to make it look wood-like.

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1 <https://learnopengl.com/Model-Loading/Assimp>

2 <https://learnopengl.com/In-Practice/Text-Rendering>

To collect boost, drive into the beerglasses in the four corners.

Frustum Culling is not working properly yet, I hope to be able to fix it before the game event.

The beercrate and the wheels are made in Blender, the beerglasses are from the internet.

Lightmapping was done using Blender and baked into one texture.

The vehicle steering is still not working the way I want it too, as I have tried to implement car like behavior with raycasting the wheels, but it did not work properly, so I reset it to a simple physx cube with forces acting onto it.

There are still some things to do, to fix however I did not have any time unfortunately as I had to do the project alone.