

README

Student ID / Name

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OS

Microsoft Windows 11

Compiler

Microsoft (R) C/C++ Optimizing Compiler Version 19.41.34123 for x86

How to Compile

1. Open the included solution file (.sln)
2. Build the solution (Build → Build solution)

How to Execute

- Click run button in Visual Studio.
- Alternatively, you can execute the included exe file.

Summary of Modification

- CWall
 - hasIntersected
 - Added a checking logic for distance relationship. If a ball's coordinates has a overlapping relationship with any of the walls, it returns true.

- hitBy
 - Implemented the function so that when the ball collides with the wall, its velocity is inversed. When the ball collides with the top wall, its x-velocity is inversed, and the z-velocity is inversed for collision with the left and right walls.
- CSphere
 - hasIntersected
 - Implemented the function so that when the distance between the center points of two balls is less than the sum of their radii, it returns true. However, I added a small margin, so that the balls behave more naturally.
 - hitBy
 - Modified the `other` parameter, so that it's always the red ball. When yellow balls are hit by the red ball, they're moved away from the plane. When the white ball is hit, the red ball changes the velocity.
 - Removed deceleration as it is not needed in this project.
 - ballUpdate
 - Adjusted to only work for the red ball, as other balls movements are not affected by other balls. For example, yellow balls are fixed in position, so updating yellow balls would be redundant.
 - Also added a out-of-bounds check for the red ball. If the red ball goes out of bounds, it comes to a complete stop and its position is set to the top of the white ball.
- CLight
 - Made the light invisible
- Miscellaneous
 - Removed the blue ball
 - Removed the bottom wall
 - Adjusted camera position
 - Added textual information
 - Added a way to move the ball (mouse, left/right arrows)