Lab 8: Collisions in 3D

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GPR-350 Game Physics
Instructor: Daniel S. Buckstein
Lab 8: Collisions in 3D

Summary:
Carrying on with 3D physics, we revisit collisions and implement the core algorithms in 3D.

Submission:
Submit a link to your online repository with the completed assignment's branch name and commit ID/index. If you have not created an online repository to keep track of your work, you should do so as part of this assignment; it will be checked. ***Work in pairs***.

Instructions:

Implement 3D collision hulls (a minimum of 3, and perhaps a base class) and test algorithms (a minimum of 6) for and between the following shapes:

- Sphere
- Axis-aligned bounding box (AABB)
- Object (non-axis-aligned) bounding box (OBB)

You will need to use the world transform and inverse from the previous lab to perform the 3D OBB tests; this operation is an abstraction of the change-of-basis concept.

Bonus:
Implement one of the following (stackable):

- Demonstrate collision resolution in 3D
- Implement ray-picking for all of the above shapes in 3D
- Cylinder collision tests
- Complex hull tests (i.e. a collection of multiple convex hulls vs another collection)

Points 8

Submitting a text entry box

Due	For	Available from	Until
-	Everyone	-	-

+ Rubric