2D Physics Brief

# 2D Physics Engine

This physics engine is implemented through a PhysicsObject class from which all other subclasses are derived from. The PhysicsObject class contains a list of pure virtual functions and a function which helps determine what type of collision check to use depending on the physics object’s object type.

Every PhysicsObject in the scene is stored in a standard C++ list and loops through objects from the start of the list against objects from the same list, with a system in place to avoid testing collisions twice.

PhysicsObjects are then drawn using the AIE::Gizmos.

# Improvements

Some potential improvements that can be made to this physics engine would be to include the ability to test swept collisions for cases where objects are moving too fast to be simulated accurately using the current fixed time step calculations. Another optimization would be to implement quad tree system to eliminate the need to test collisions of objects which are too far away to collide with each other.

# Class diagramC:\Users\s171114\Downloads\PhysicsEngine.png