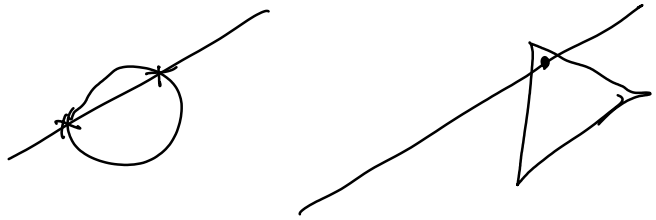
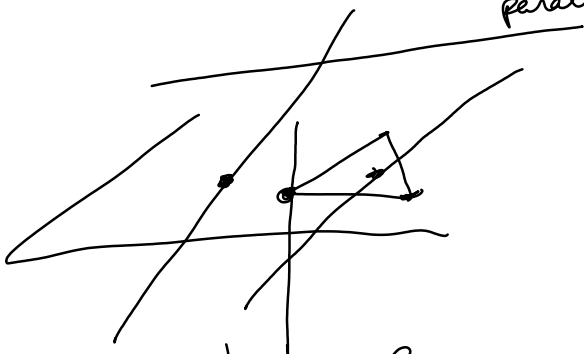
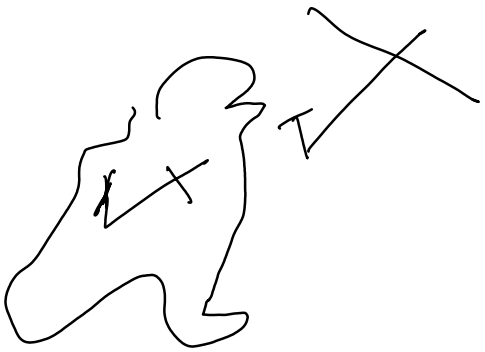
Lecture 11

Wednesday, December 8, 2021 18:31

Collision detection





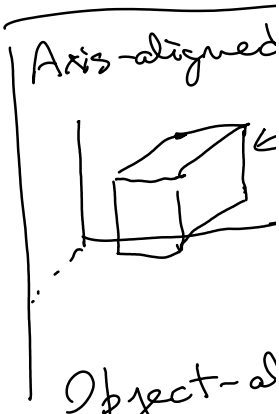


- brute force approach,
  for a in objects
  for b in objects
  for pa in a.polygon
  for pb in b.polygon
  check if p

Bounding volumes → box, sphere, pill

axis aligned

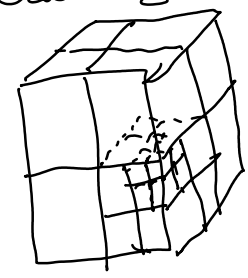
object aligned



z

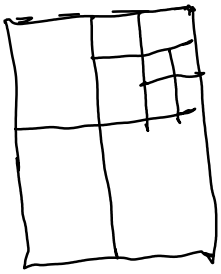
Octrees

- hierarchy of bounding volumes

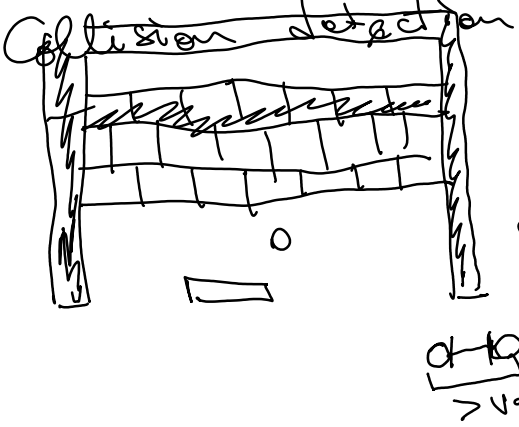


Quad trees

- terrain segmentation (partitioning)

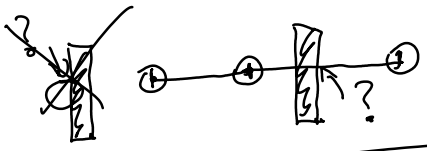


Collision detection



> v. t frame

for high-velocity objects
- ray intersection



Unity Layers and Te

100 objects → C_{100}^2 =

- assign objects to
- tags - just test

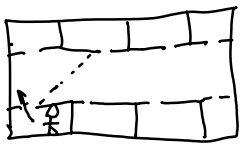
Space partitioni

- render just th
  - a square
    circle
    hexago

Force rendering

- use a spring equation based on the depth of the collision

Cell segmentation
- for inside buildings



Terrain rendering

- terrain map - grayscale image
  - 1-byte / pixel
  - byte value → terrai