

CSC8503

Student Name: YANGRUI HONG

Student Number: 220134488

<https://youtu.be/l9ebfDj7yPw?si=zuZn0lCNzSetFGDj>

<https://youtu.be/PzxxWGQyqJ4?si=ahXgRb8lOOcfWluz>

Keyboard control:

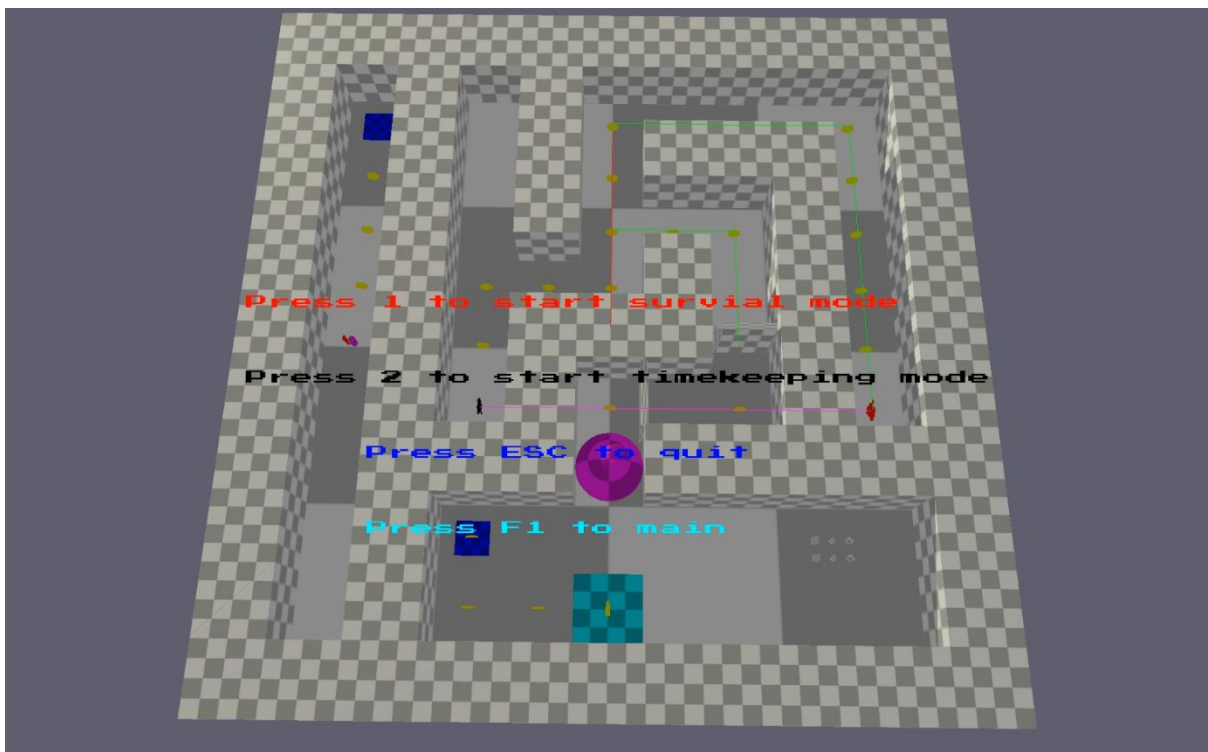
Menu: F1 to main menu to choose game mode, 1 to start survival mode, no limited time, if collision with the left enemy, game over. 2 to start timekeeping mode, till to set time, game over. ESC close game. P pause and continue. G open and close gravity.

Q to open and choose mode.

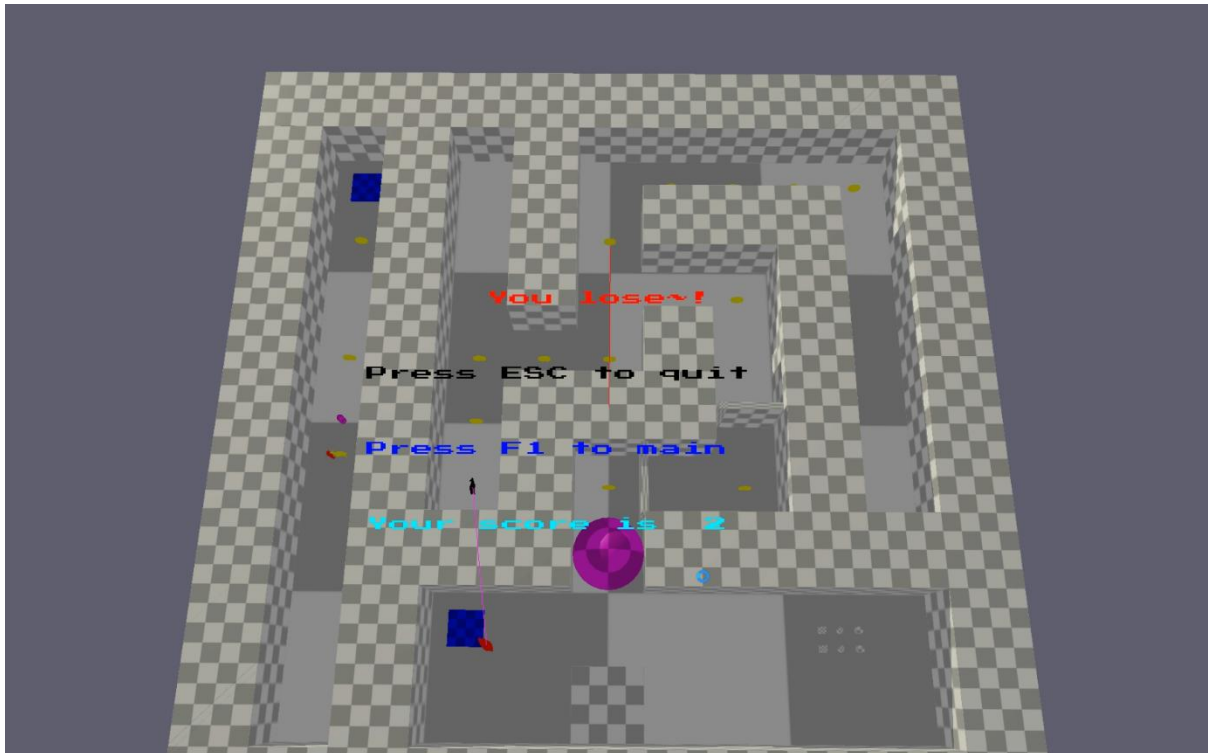
In choose mode, Mouse left click to choose object then right click to add a torque. WASD move, space for jump.

While a object be choosed, Keyboard keydown L to Lockmode, camera locked in some position. WASD move object.

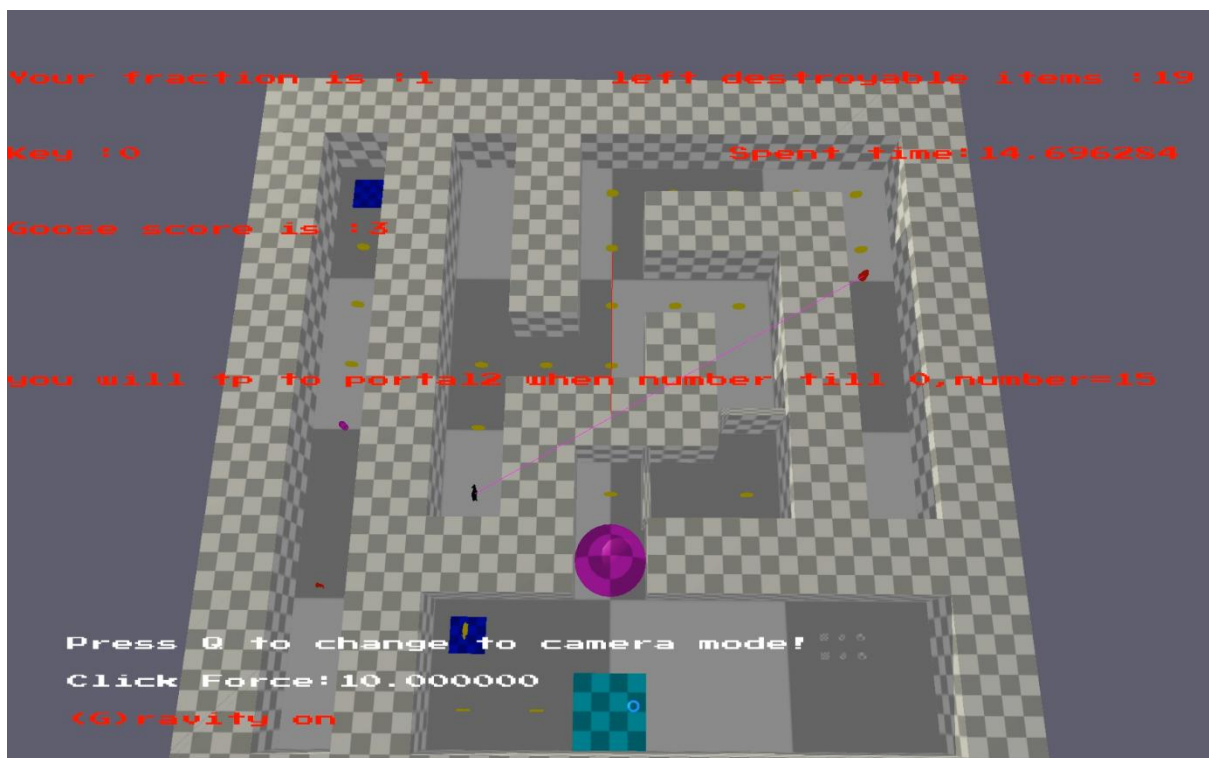
In game:



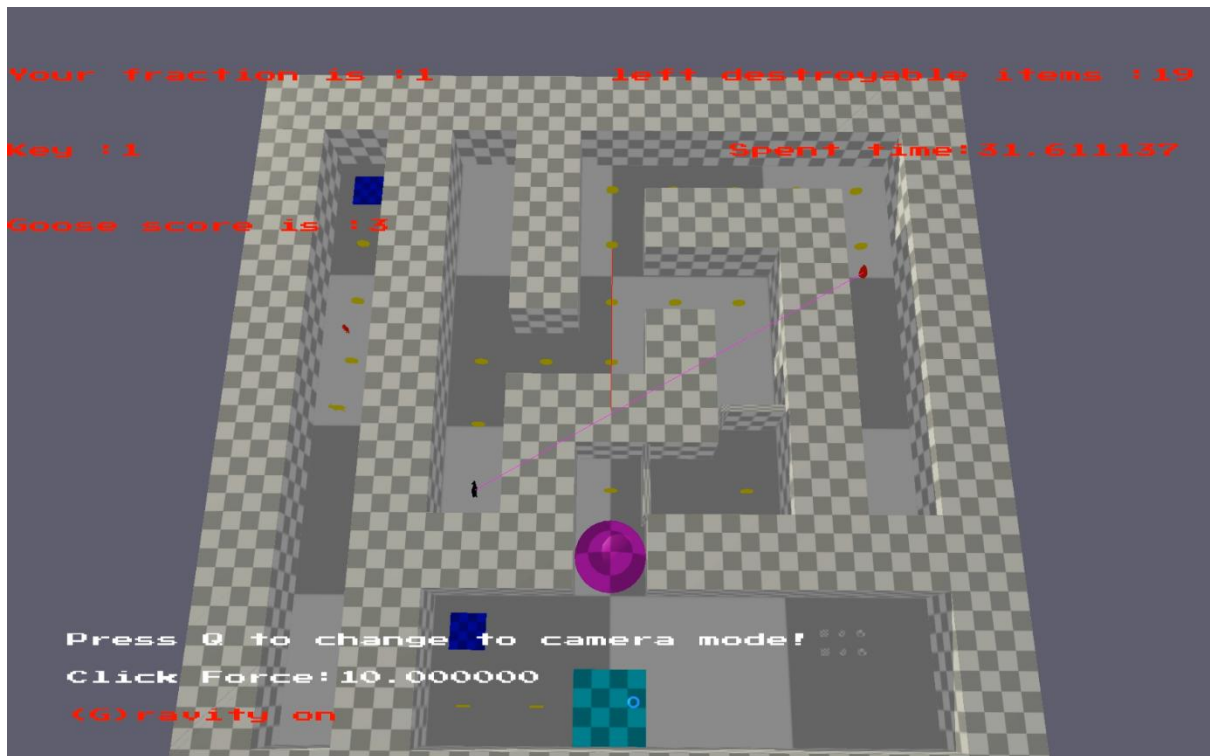
Main menu



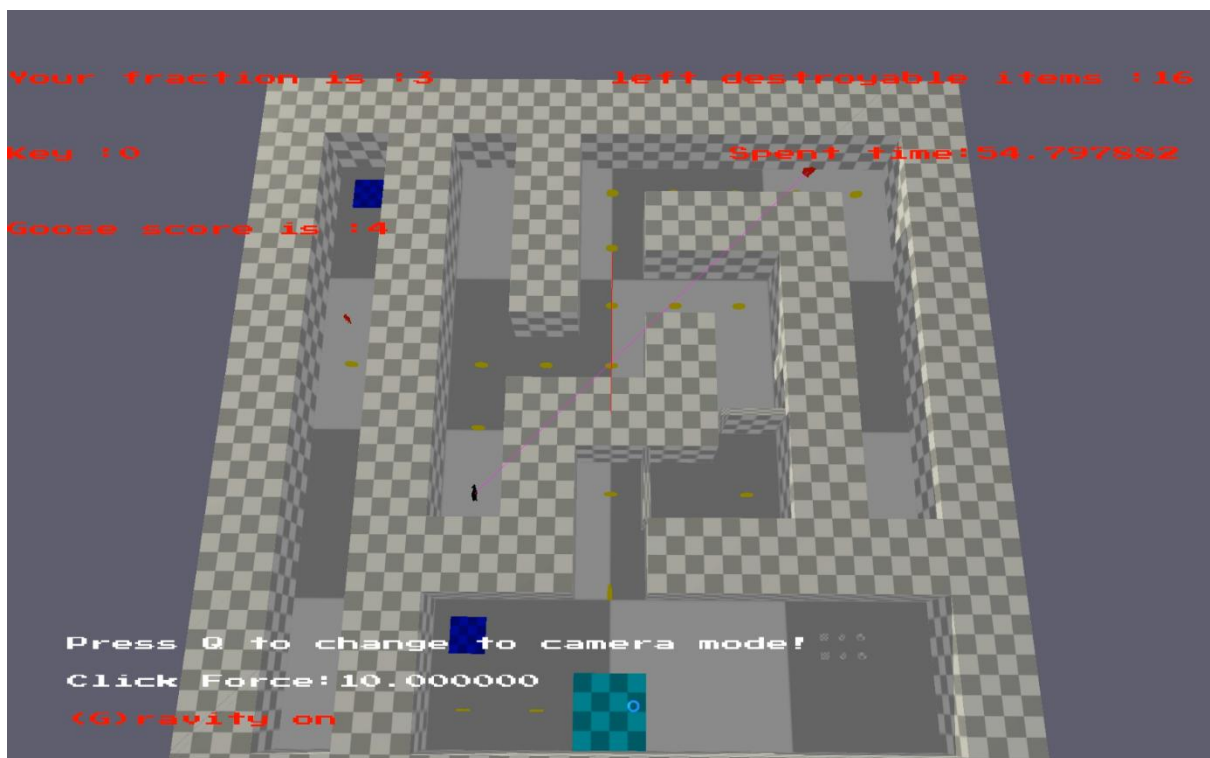
lose the game



Player teleport, sphere AABB collision



Get key, sphere capsule collision



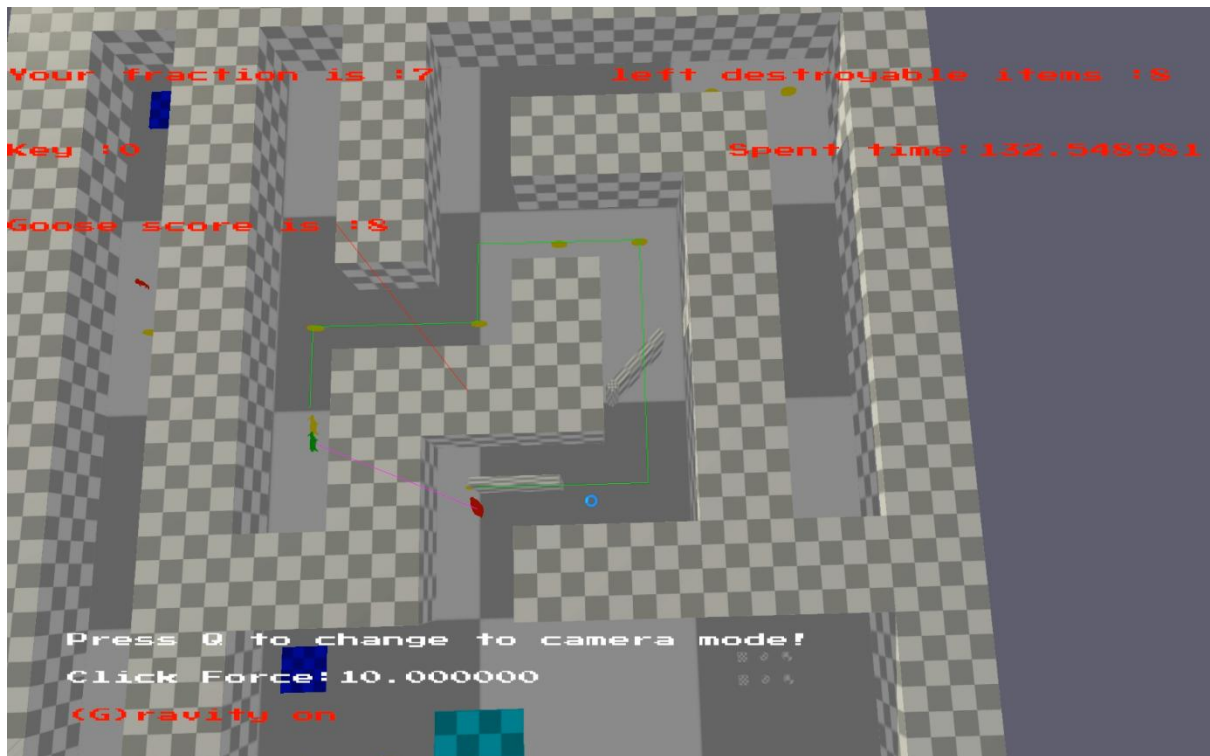
Broken obstacle, sphere intersection, player and goose get coin, goose rob player coin



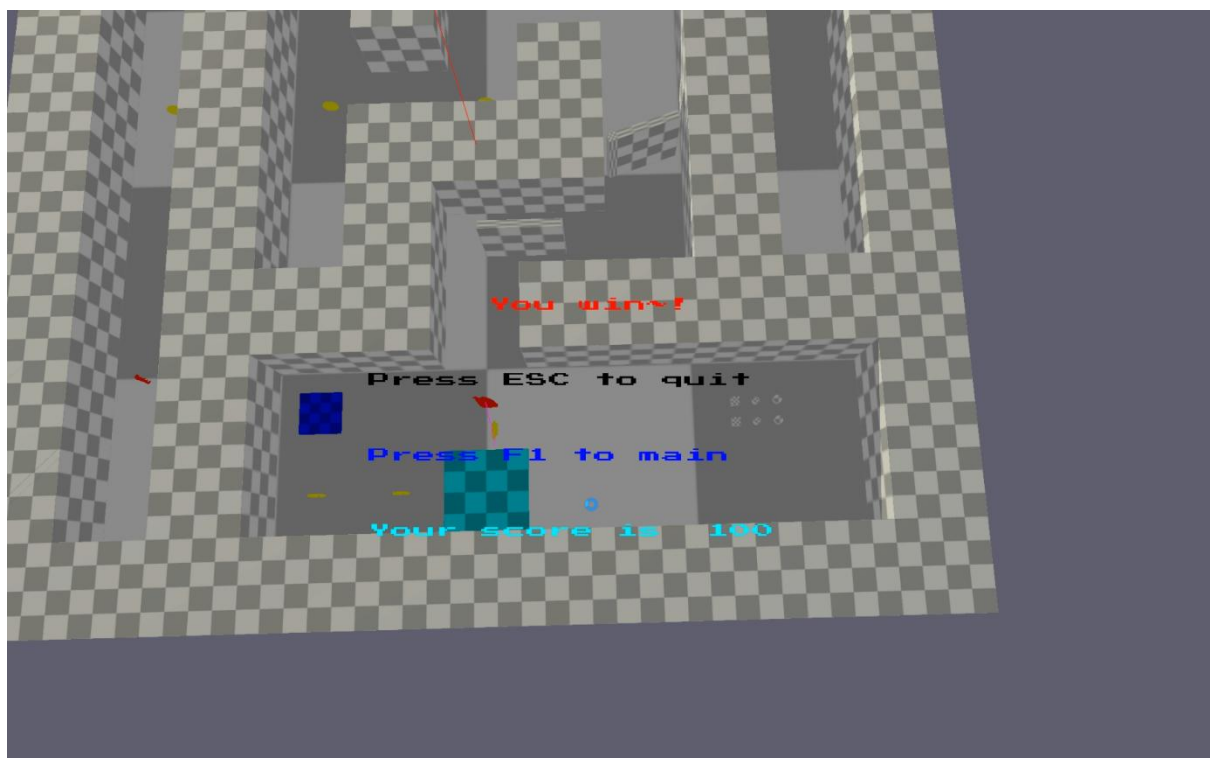
Obb sphere collision



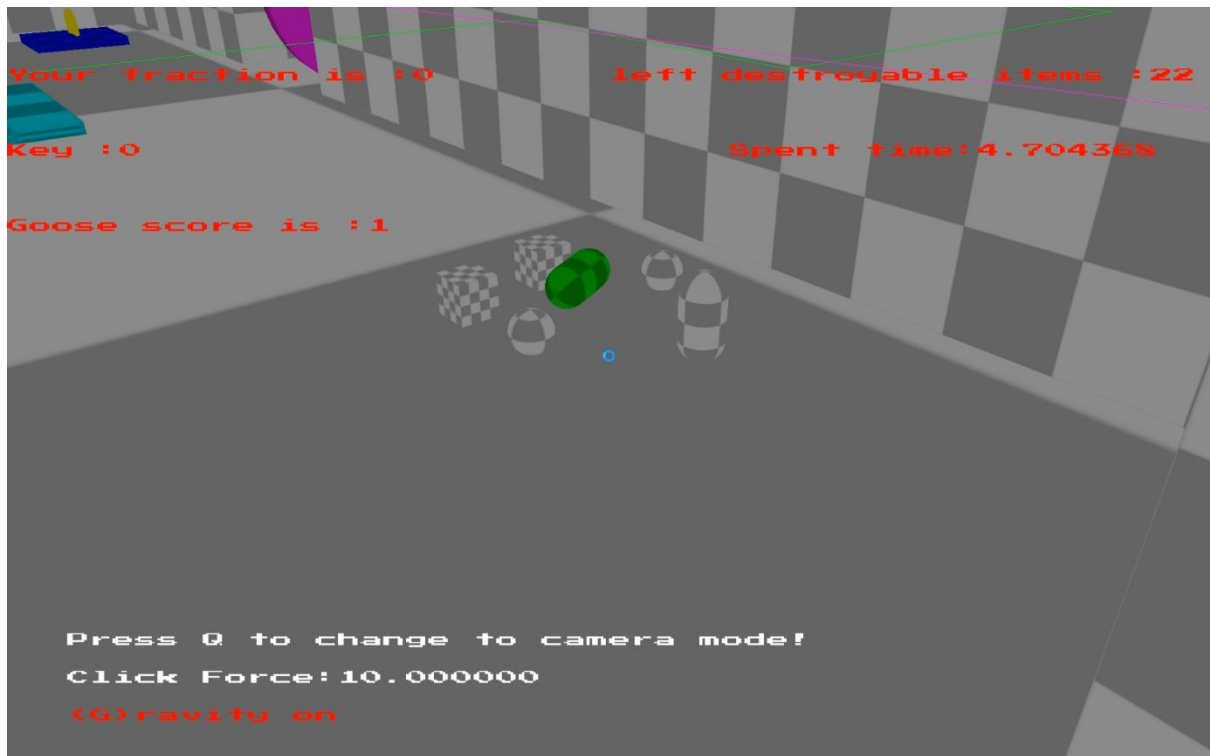
Hinge constraint Door and height constraint and position constraint



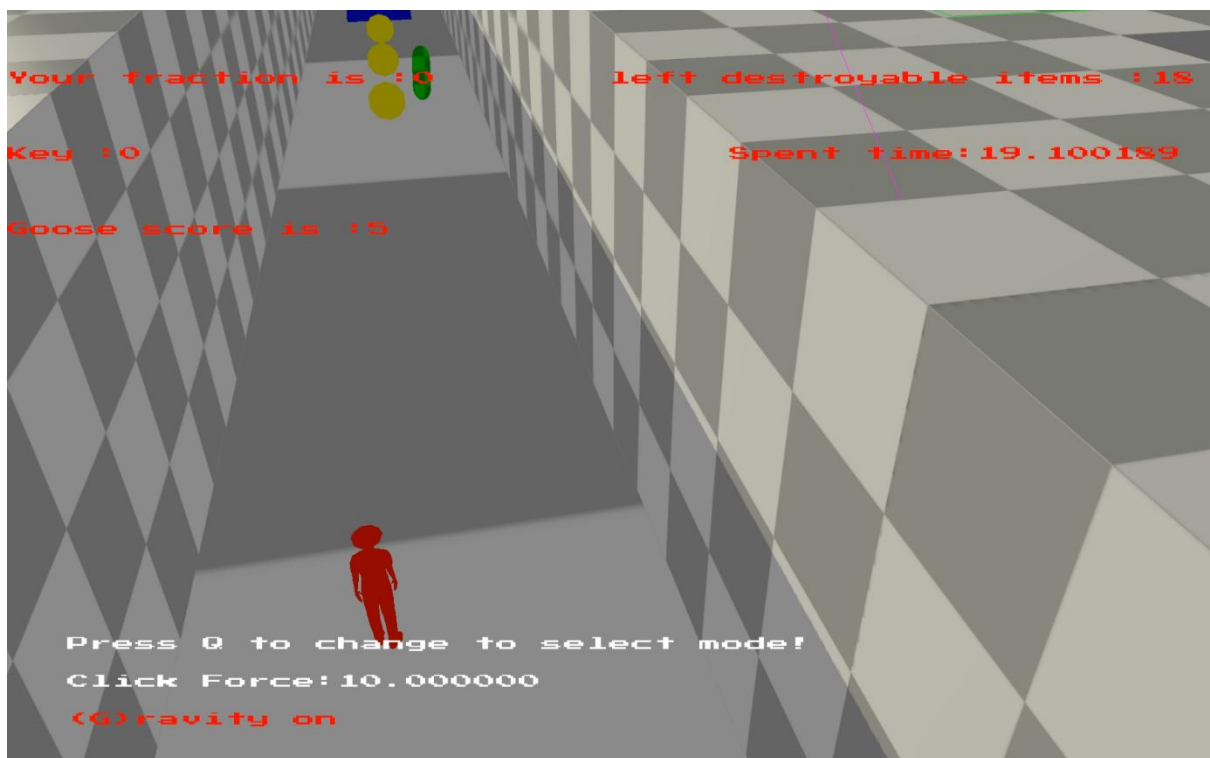
Sphere intersection, position constraint, ray casting and orientation constraint, ai find path



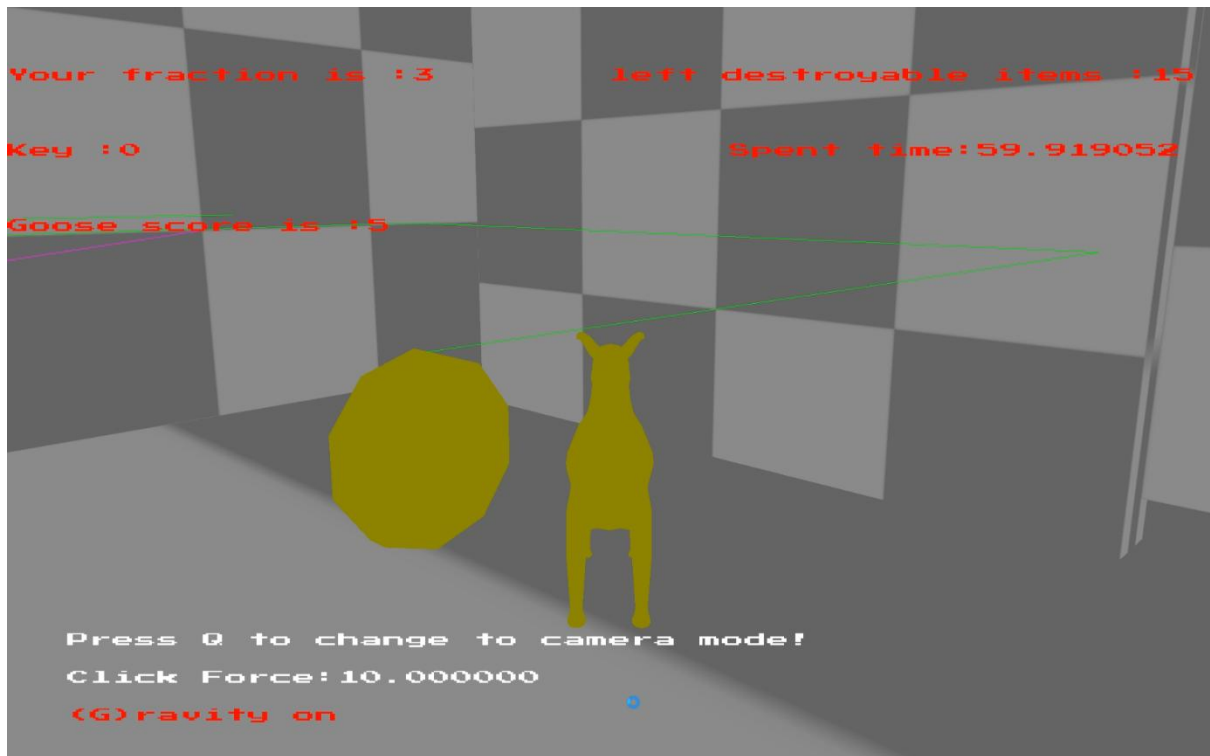
Win



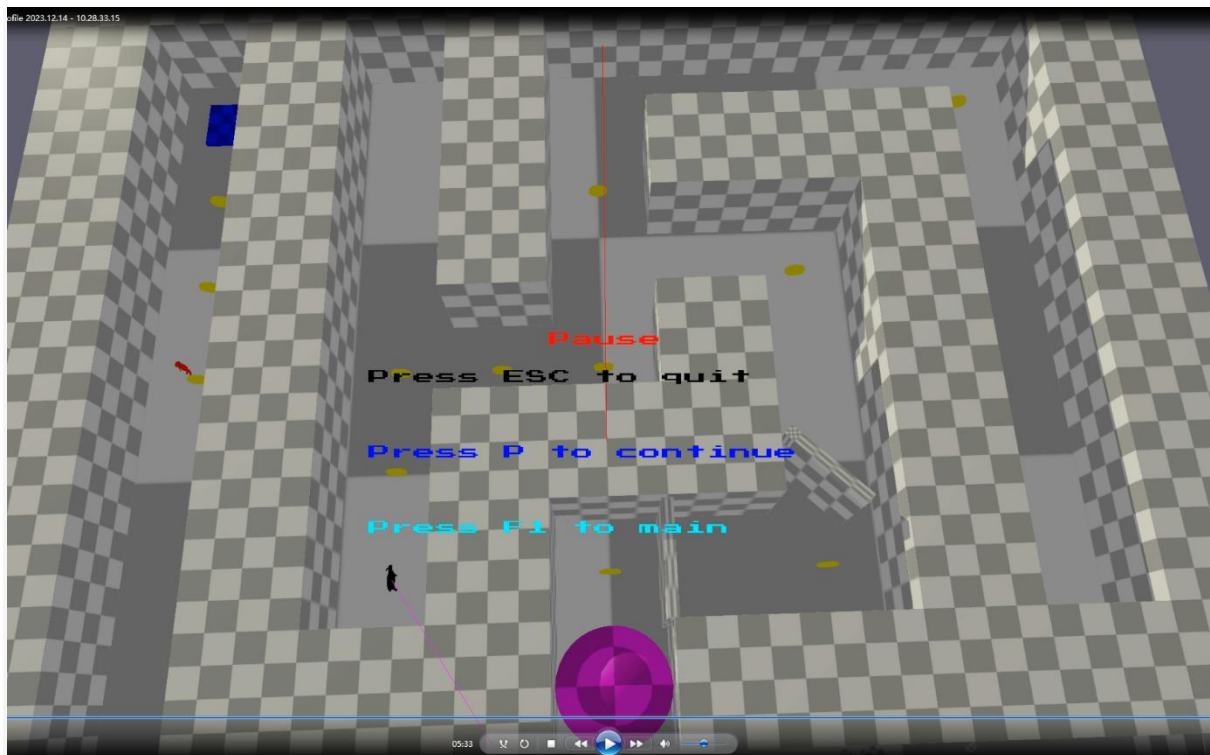
Capsule sphere, capsule AABB collision



AI state machine



First-person perspective

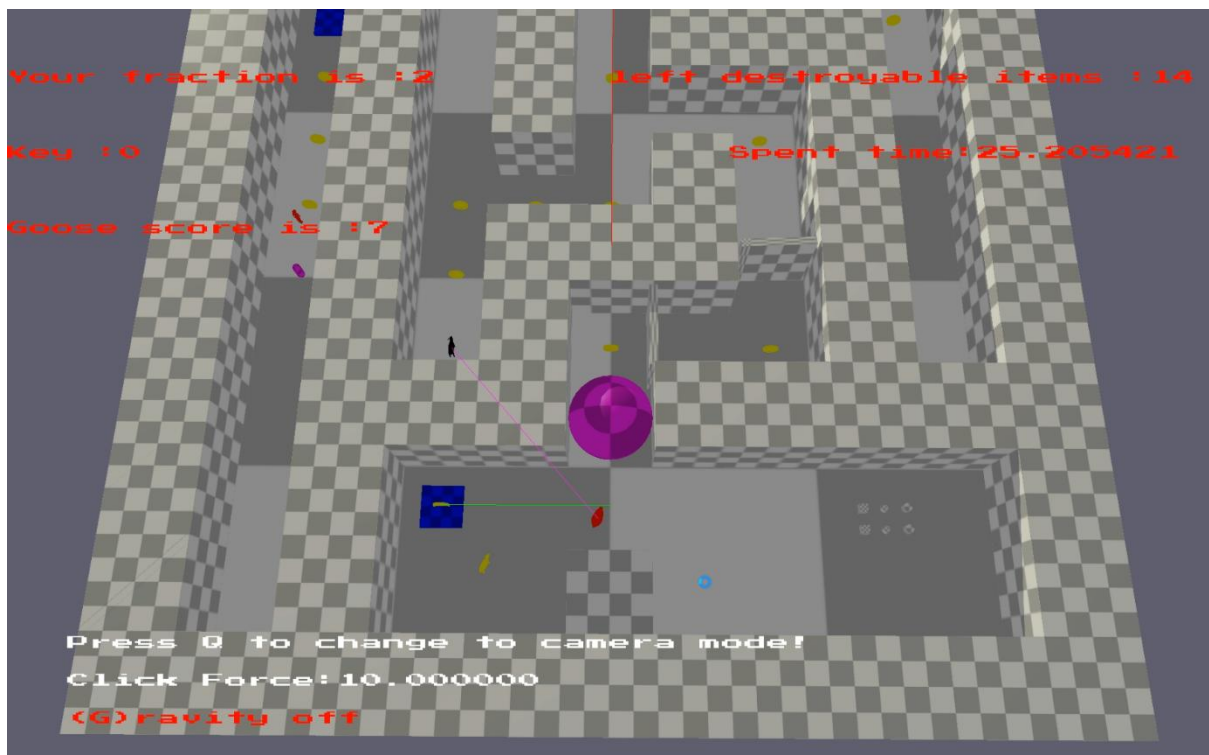


Pause

```
Microsoft Visual Studio Debug Console
OpenGL Debug Output: Source(OpenGL), Type(Performance), Priority(Medium), Program/shader state performance warning: Vertex shader in program 1 is being recompiled based on GL state.
awake!
Going to the door
sleep!
Dropping iteration count due to long physics time...(now 60)
Dropping iteration count due to long physics time...(now 30)
Raising iteration count due to short physics time...(now 60)
Raising iteration count due to short physics time...(now 120)
Dropping iteration count due to long physics time...(now 60)
awake!
Going to the door
Dropping iteration count due to long physics time...(now 30)
Raising iteration count due to short physics time...(now 60)
Raising iteration count due to short physics time...(now 120)
Dropping iteration count due to long physics time...(now 60)
Raising iteration count due to short physics time...(now 120)
Dropping iteration count due to long physics time...(now 60)
Raising iteration count due to short physics time...(now 120)
Dropping iteration count due to long physics time...(now 60)
Skipping large time delta
Raising iteration count due to short physics time...(now 120)
Dropping iteration count due to long physics time...(now 60)
Going to the door!
Bypass Door
I will catch you!
Bypass Door
I will catch you!
Chasing player!
Bypass Door
```

Goose behaviour tree

Goose(sleep, go to door, by pass door)(speak,Chase)



Ai goose avoid obstacle, player use force torque impulse for rotation and movement and friction



OBB