



Use the old method to calculate the number of steps for each possible direction. This shows how many steps for each direction. All possible directions for each step is 4. Using the old method is easier than the new one.

2. When setting the sprite w/ the coordinate, give the sprite direction!

Pre-Middleman

3) Collision with is called by smartfield, smartfield calls it twice, some for the editor and one for performance. Smartfield is called whenever a collision pattern is detected.

4)  $n^2$  collision pairs for worse case  
 $\frac{n(n-1)}{2}$  if you don't count yourself

Fraction - ghosts don't need to collide with pellets or themselves. Colliders don't need to collide with walls. Instead you just need to assignate informations and possible directions the players can go. In this case you also don't need to create buffer walls, they can be displayed by the background picture.

#5

Elastic Collision

↳ Energy & momentum  
are ~~not~~ conserved  
(bounce off)

Inelastic Collision  
↳ Energy is not conserved  
↳ Objects stick together  
↳ After collision

⑨

The ListenerViewFitter class is used in 3D worlds  
it maintains a fixed vector - offset, and  
keeps the - preview position vector always at this  
offset from the player's position. It adjusts  
the - preview position vector attitude to change along  
with the player's attitude  
To change the offset, press Ctrl + Arrow keys

I made the boat your home work.  
Describe how you did your homework.  
I confess I fired upon the player  
I solded enough critters to make a  
chain. The rival's bullets would not hurt the  
player.

Peter Nisuya  
Albert Choi

7. I added a Force Object Spring Rod to the boat to attach the Bathtubsphere to it, then I overrode Critter-draw(). In capable to draw a line from the center of the boat to the center of the Bathtubsphere.

⑧ Every Critter Bullet has a pointer to its shooter, called "shooter."

In the collide method of Critter Bullet,  
the bullet checks if it has collided with a  
critter.

If it has, that critter is damaged.  
If the damage causes to the  
critter is lethal, then the critter returns a nonzero  
reward, which the Bullet passes on to  
shooter using shooter's addScore method.

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Name: \_\_\_\_\_  
ID: \_\_\_\_\_  
Section: \_\_\_\_\_

10. The constructor of `(Game)Engine3D` pop creates `prop`s in a random position in the `Z` value, the `back` of the world, and add the gravity force with the direction of the rotation and `z` axis towards the front.
11. `int` `(CharacterController): damage (int hitStrength)`  
If (- health)  
{  
 if (health <= 0)  
 health = 0;  
 else  
 health -= damage;  
 if (health <= 0)  
 die();  
 else  
 health = 0;  
}
12. `void addForce (Vector3D force, float forceIntensity (30.0, Vector3D axes))`  
add the quantity force with the direction of the rotation and `z` axis towards the front.
13. `void move (float time, float frameTime (30.0, Vector3D axes))`  
add the quantity force with the direction of the rotation and `z` axis towards the front.