Rigid body

**What is rigid body?**

Rigid body is a component in object which enables the object to act under the control of physics.

**Component :**

1. Collider

Collider enables user to check collision and make movement regarding collision. There are two types of collider, which is box collider and matrix collider. Box collider is a rectangular shaped collider, and matrix collider is a collider made of matrix. Matrix collider has matrix with 0s and 1s, 0 meaning empty and 1 meaning filled. Function in Rigidbody checkCollision(object) returns value meaning the type of collision. 0 is for no collision, 1 is intact(their distance is 0), and 2 is for overlap(they overlap).

checkCollision(object)

case 1 :

A

B

return 0 (no collision)

case 2 :

A

B

return 1 (intact collision)

case 3 :

A

B

return 2 (complete collision)

1. Velocity

Velocity is represented as a vector. Vector has x and y component, and each stands for x axis velocity and y axis velocity. Standard object movement is performed according to their current velocity.

**Members :**

private :

Phy\_Vector velocity

int x

int y

public :

Collider\* collider

functions :

void makeBoxCollider(int x1, int y1, int x2, int y2);

void makeBoxCollider(int width, int height);

void makeMatrixCollider(Matrix matrix);

void setVelocity(int x, int y);

void move();

int checkCollision(Object& obj);

int checkAABBCollision(Object& obj);

int checkMatrixCollision(Object& obj);