SDL 7 - Colliders

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General improvements

- New Module::OnCollision() callback

- SDL_rect universally visible (included in Globals.h)

- Added Collision module *(by default particles that collide are destroyed)*

- Now gameplay scene Activates:

    - Particles

    - Collisions

    - Player

New Module: Collisions!

- Allows to create rectangles (Colliders) that can be moved around

- Every Update it will test for **intersection / overlap**

- In case of intersection will call a callback module passing both colliders

- Simple optimization to avoid testing A vs B and B vs A

- Game-specific matrix of discarded collisions (Adapt it to your game!)

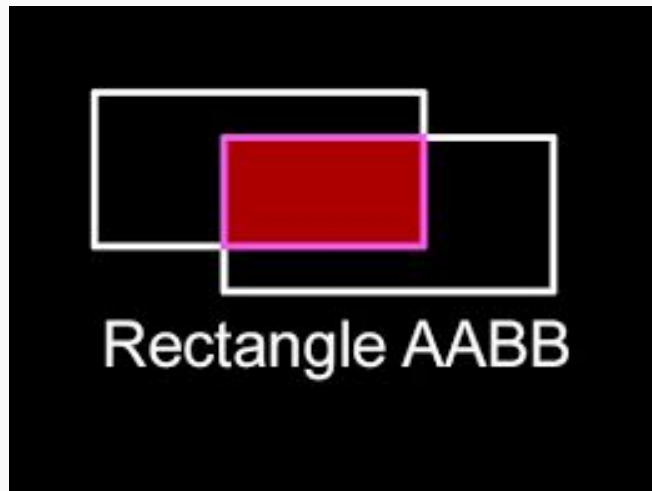- DebugDraw on by default (switch it with F1)

New Module: Collisions!
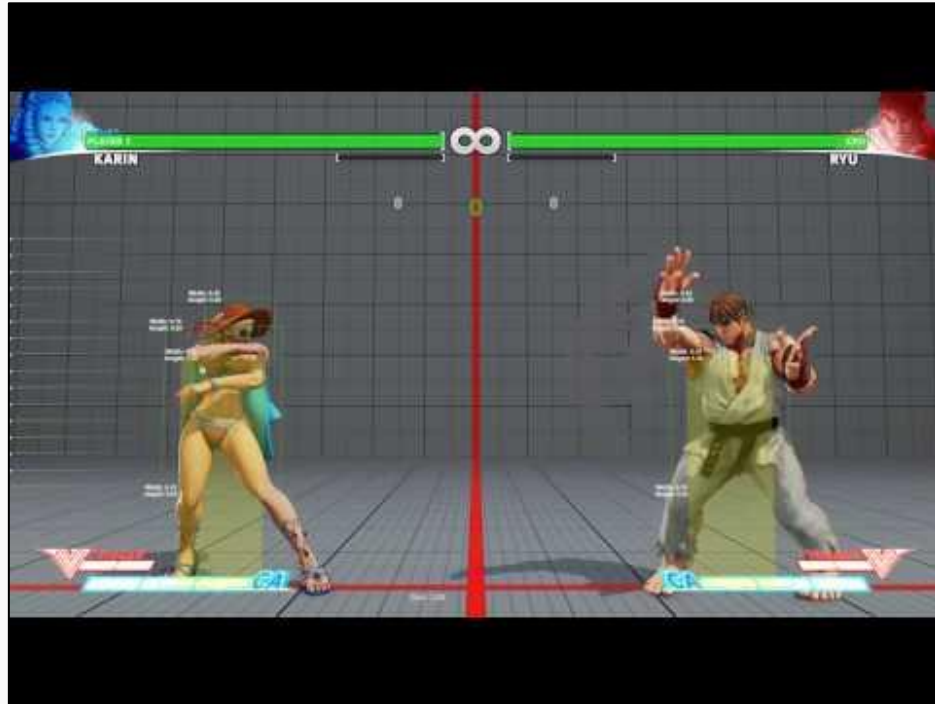
TODO 0

*"Return true if there is an overlap between argument **r** and property **rect**"*

- All rectangles are Axis Aligned

- With both x,y,w,h decide if there is overlapping

- Try to **discard** an overlap ASAP

- Assume **w** and **h** are always positive

- Grab pen & paper, it's a logic puzzle!

Rectangle AABB

TODO 1

"Add colliders for the first columns of the level"

- Check how the bottom is created
- Find out the coordinates for both columns
- Check they turn blue
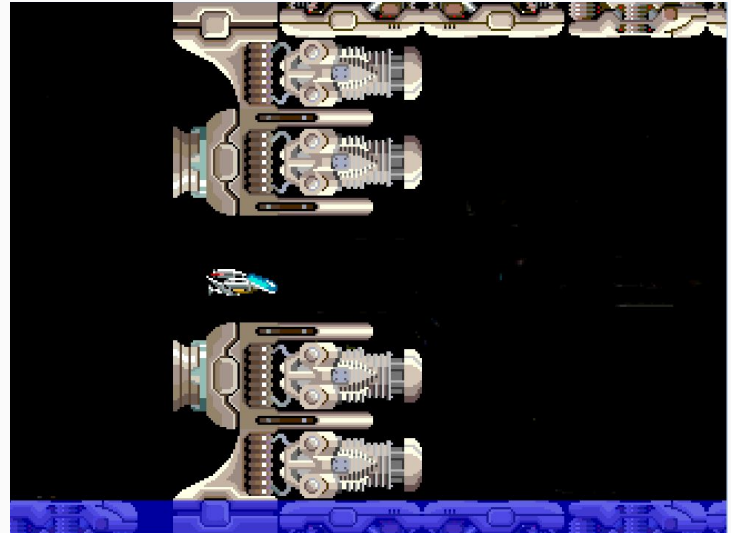
TODO 2

"Add a collider to the player"

- Same as with walls … but change the type!

- Store collider for future reference

- Avoiding having **#include "ModuleCollision.h"**
  in *ModulePlayer.h* (only in the cpp)

- *Tip:* use a forward declaration

TODO 3

"Update collider position to player position"

- Use the previously stored Collider*

- Just use the SetPos() method of the collider

- It should follow the player exactly

- You just need to keep updating/moving the collider

TODO 4

"Detect collision with a wall. If so, go back to intro screen."

- You actually have to implement the OnCollision() callback on the Player
- The two arguments you receive are the intersecting rectangles
- *Optional*: Make the spaceship disappear and throw some explosions

TODO 5

"Make so every time a particle hits a wall it triggers an explosion particle."

- Just find the right spot in the code to throw an explosion particle

Homework

Create a version 0.4 of your game with:

- Camera limits for the player

- Colliders for the player and its particles

- Player can collide with something in the environment (place a static enemy if you need)

- Add God Mode when pressing F5