

Challenges 3D Bullet Collision

Introduction

The purpose of this document is to extend your knowledge of the information provided in the tutorial. This document will contain programming challenges/exercises which can help you understand things better. The challenges/exercises are sorted by 3 levels, the following will describe the general thought behind each level:

- Beginner : only a minimal adjustment has to be made
- Advanced : multiple minimal adjustments or an advanced adjustment
- Expert : multiple advanced adjustments

Before you start the challenges make sure you have followed the appropriate tutorial.

Beginner

1. Lower box

Decrease the height of the box. Check if the collision model matches the box.

2. Bigger impacts

Increase the size of the impacts

Advanced

1. New wall

Draw a 3d wall and create a collision model that completely covers the wall.

You can use the following code to draw the wall:

```
d3d_draw_block(x - 2,y - 16,0, x + 2,y + 16,24, -1, 1,1);
```

2. Cylinder model

Create a 3 sided cylinder and add the collision walls for that cylinder. You don't have to add a floor.

You can use the following code to draw the cylinder:

```
d3d_draw_cylinder(x - 8,y - 8,0, x + 8,y + 8,24, -1, 1,1,1,3);
```

Expert

1. Fighting demons

Let the demons automatically follow the player. When one of them touches the player the player dies and the game restarts.

You can use the following function to move the demons around:

```
mp_potential_step_object(objPlayer.x,objPlayer.y,1,objStructure);
```

In addition to that, give the demons 3 hit points. When you shoot at them the hit points will decrease by 1. When one of them has zero hit points it dies.

2. New impact type

Change the box texture to texMetal which can be found in the same folder as this document. After that add a new impact. The texture of that new impact should be texImpactMetal, you can add it in your project in the sprite texImpact.

The result should look something like this.



3. Combine tutorials

Combine this tutorial with the 3D gun creation and 3D gun programming tutorial.

3D gun creation : https://www.youtube.com/watch?v=EGBx9YH_2ng

3D gun programming : <https://www.youtube.com/watch?v=4a7lahvRsSw>