

Challenges 3D Gun Tutorial

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 understanding 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.

3D Gun part 1: creating the model

This chapter will give exercises which challenge your model making skills.

Beginner

1. Longer pistol barrel

Increase the length of the pistol barrel by 1.

2. Decrease the size

Decrease the size of the pistol by 50%

3. Texture adjustment

Paint the tip of the barrel red so that the gun looks like a toy-gun.

Advanced

1. Aim sight front

Create a simple aim sight which should be place at the tip of the pistol.

* you can use parts of the existing texture to texture the aim sight



2. Aim sight back

Create a simple aim for the back of the gun. First create the left side after that copy it and mirror it to create the right side. You should be able to see trough them.

* you can use parts of the existing texture to texture the aim sight



Expert

1. Create a new gun (without the magazine)

Use the reference image and machine gun texture to create a completely new gun. Don't create the magazine yet because this makes it a lot trickier to apply textures.

2. Add the magazine

Add the magazine to your machine gun and when that's done scale it to about the size of the pistol. The end result should look something like this -->

If you did it right you can use it for the next tutorial: importing the gun



3D Gun part 2: importing the gun

This chapter will give exercises which challenge your programming skills.

Beginner

1. Gun positioning

Move the gun 2 points to the front when the player holds it in his hand.

2. Zooming distance

Increase the zooming distance with 10

2. Pickup radius

Increase the pickup radius of the gun to 16

3. Pickup with key

Program the pickup script so that the gun can only be picked up when the player presses the F-key AND is within the radius.

Advanced

1. Display the pickup action

Add something to objHud that it will draw "F-key to pickup the gun" when you are close to the gun and when it hasn't been picked up yet.

2. Decrease rate of fire

Program objGun in a way that it can only fire 5 rounds per second (1 shot every 6 steps)

3. Add ammo

Add an ammo variable in objGun which decreases by 1 every time you shoot. Display this variable with objHud.

4. Gun reload

Make it so that when the player hits the R-key:

- The gun rotates a bit to the bottom
- Replenishes its ammo
- Then rotates back to its previous position

Expert

1. Load machine gun

Load the machine gun from the previous expert challenge and make the gun fire automatic.

2. Switching weapons

Make the player able to switch between the pistol and the machine gun by pressing 1 or 2.

3. Dual wield

Create a dual wield options for the pistol or machine gun (or both) when the player hits the E-key

- One extra gun should be drawn at the left side of the screen
- This gun should have a muzzle flash drawing when it shoots
- The player can't zoom in with the guns anymore
- The guns should fire separately; the left mouse button controls the left gun, the right mouse button controls the right gun.

