

Game Maker

Chapter 2 Lesson

More Events

We will continue to investigate *events* since they are critical to programming any game. In this lesson you will learn to answer many basic questions. How does an event occur relative to an object? How do I destroy an instance? What do I do when two objects collide? What are occurrences of chance? How do I insert a background? How do I add sound effects?

Events Relative To An Object's Current Position

The *KeyPress event* is used to give a user control of an object in a game. The user will not only be able to move the Mother Dragon up and down using the arrow keys, but will be able to protect her by pressing the Spacebar to shoot fireballs at oncoming demons. Here are the steps:

- 1) open the properties on the object_dragon
- 2) create a new event called Keypress and choose Space bar
- 3) in the actions list select Create Instance
- 4) in the action form set the x to 100, y to 10, and check relative. This will position the fireball to come out of the upper right part of the sprite_dragon and occur relative to the Mother Dragon's current position.

Destroy an Instance

If an object, such as a fireball, moves out of the room, it is the programmers responsibility to destroy the instance. If you fail to destroy an instance, it will continue to use the processing power of the computer as it recalculates its new positions outside of the room.

Collision Events

It is the programmer's responsibility to determine what happens when two objects collide. What should happen when a demon collides with the Mother Dragon?

- 1) Show the High Score board
- 2) Restart the game

Conditional Action

The object_boss is responsible for releasing demons and occasionally a baby escapes its clutches. These occurrences happen in a random fashion. As the Evil Boss moves up or down a step (a small distance) on occasion a demon is created and/or a baby is released (created).

The random occurrence is controlled by what is called a conditional action. In this situation the *action* Test Chance is included in the Step processing *event*. Test Chance is like a many sided die. You define how many sides it has in its property form. So, in the following steps Create Instance is only executed if the Test Chance action rolls a 1 using a 50 sided die, otherwise the Create Instance statement is skipped. A 100 sided die is used for the random creation of a baby.

Here are the general steps to add to the Step event:

- 1) Test Chance -- (Set the sides of the die to 50).
- 2) Create Instance of the demon
- 3) Test Chance -- (Set the side of the die to 100).
- 4) Create Instance of the baby

So, in terms of computer code it would look something like this:

```
If die1 = 1 then object_demon.create  
If die2 = 1 then object_baby.create
```

The *steps event* is executed 30 times per second.

On average in just under 2 seconds, we would expect to see a demon created. In just over 3 seconds we would expect to see a baby released.

Background

In the background folder you will be able to choose a background for the room. Just associate a gif file and you are ready to go. The image size for the background should match the size of the room.

Background Music

First you must create a Sound from the Resources menu. Once the sound is created you will need to associate it with an object. It is important to click the loop setting to get the background music to continue as the game goes on.

Sound Effects

Sound effects are added similar to how a background sound is added. So, as the fireball hits a demon (a collision) a short sound will be played.