

Creating a simple game using Gamemaker and then adding some extensions to it

The following directions will guide you in the creation of a simple game to demonstrate the process of game development using Gamemaker. Gamemaker uses an object-oriented approach.

You create a game by:

- Creating sprites and sounds.
- Creating objects (they use the sprites & sounds).
- Defining the behavior of objects when events occur.
- Placing the objects in rooms (levels).
- Execute the game.

The following instructions will create a game in which balls bounce around a walled room. When you click on a ball, it explodes and your score increases. The ball reappears at a random location and the fun continues until you get sick of it. You hit the esc key to exit the game.

Launch Gamemaker (obviously).

Create a ball sprite.

Add -> Add Sprite -> name the sprite ballSPRITE -> load a sprite (pick an image from the "various" directory then click "open") -> and then click OK to close the form if you like it

Create a wall sprite.

Add -> Add Sprite -> name the sprite wallSPRITE -> load a sprite (pick an image from the various directory) and then click OK to close the form

Create a sound

Add -> Add Sound -> name the sound gunSOUND -> load a sound (pick one of the gunshot sounds) listen to it with the green triangle button and then click OK to close the form if you like it

Create the wall object

Add -> Add Object -> name the object wallOBJ -> select the wall sprite -> check the box labeled solid and then click OK to close the form

Create the ball object

Add -> Add Object -> name the object ballOBJ -> select the ball sprite (DON'T check the box labeled solid)

Create three behaviors for the ball

Add Event -> Create -> drag & drop the 8 red arrow action from the **move** tab into the actions box -> Select all 8 arrows & set the speed to 8. -> click OK

Add Event -> Collision -> wallOBJ -> drag & drop the bounce action from the **move** tab -> click OK

Add Event -> Mouse -> Left button -> add actions to play a sound (from the **main1** tab), change the score (from the **score** tab) by 1 relative, move to a new random location, and move in a new direction (the 8 red arrows action as in the create event) -> click OK

Click OK to close the form

Define a room

Add -> Add Room -> name the room ballROOM (right click on name at left) -> Select an object from the pop-up menu at the bottom. Left click in the room to add an instance of the object at a location (the shift key repeats the addition). Right click on an object in the room to remove it.

Go to the backgrounds tab and click on the color rectangle. Choose a nice color.

Use the wall object to create a boundary around the room.

Put a few instances of the ball object in the room.

Click OK to save the room or just leave it open for testing.

Execute the program (the green triangle on the button bar at the top).

Either pat yourself on the back and start experimenting or start debugging.

If things go badly, you can right click on any action in an object to edit it.

You save the game and exit Gamemaker in the usual way.

EXTENSION 1: Now, let's add some stuff to make the game a little more realistic.

A). Create an explosion.

- Add a sprite
- Change its name to explosion
- Select edit sprite
- Select edit image (pencil)
- Enlarge the image (click the magnifying glass 6 times)
- Draw your explosion (choose pencil, color, fill, color, etc.)
- Click OK (check mark)
- Under animation set length to 7, choose shrink->center then OK
- Under animation select reverse
- Optional – under file->save as strip->where->name
- OK your way out

B). Create an explosion object with the explosion as its sprite and no events.

C). Duplicate ballROOM. Right click on it and choose duplicate. Name the new one ballROOM2.

D). Duplicate ball_object and change its name to ex_ball_object.

- Under the create event, change the move action speed to 10
- Under the left pressed event, delete the jump & move actions and add a create action for the explosion_object (x=0, y=0, relative checked). Also, add an action to destroy the ex_ball_object itself. (remember to click OK)

E). In ballROOM2 remove the ball objects and replace them with exploding balls.

F). Create a control object with no sprite. Its only event is key press->function key->F12.

The action is a series of control statements:

If room == ballROOM go to next room (main1)

else

end the game (main2)

Click OK

G). Put an instance of the control object in both rooms.

H). Play the game.

I). Did you notice that the explosions just keep on going? To fix that, change the explosion_object.

event->other->animation end

action->destroy instance (main1)

EXTENSION 2: Let's add even more things. (It just never ends, does it?)

2A) Change the background for the second room.

- Add background->name it room2BKG->edit it->draw whatever you like but you will see a lot of it so you may want to make it simple.->OK
- Open ballROOM2. Choose the Backgrounds tab. Background 0 will be selected. Choose room2BKG from the menu. Check Tile Hor., Tile Vert., and set the vert speed to 2
- OK
- Try it

2B) Use a gun sight instead of the cursor.

- Add Sprite->name it sightSPRITE->edit->transform->resize canvas to 16 X 16->OK
- Edit image (pencil)->magnify->draw the sight->OK->OK
- Add Object->name it sightOBJ
- Add event step->begin step
- Its action is; jump to a given position (mouse_x, mouse_y)
- OK
- Put a sightOBJ in each room (anywhere)
- Under Global Game Settings, uncheck Display the cursor
- Try it

2C) Let's fix the control object to change rooms when there are no more balls to shoot.

- Add an event to the control_OBJECT. The event is step->end step
- Its action is; execute a piece of code (control). When you drag it to the action window, a code window will pop up. Put the following code in it, then OK

```
{
    if(room == ballROOM)
    {
        if(instance_number(ball_object) == 0)
            room_goto_next();
    }
    else
    {
        if(instance_number(ex_ball_object) == 0)
            game_end();
    }
}
```

- Try it. Remember, in the first room the balls don't go away when you hit them so you still need the F12 key to get to the second room.