3. Your own platform game.

3.1. Designing the game.

In the task 2. of 'Game Factory' you have created a game 'Push the square'. Now, your team is going to make its own game.

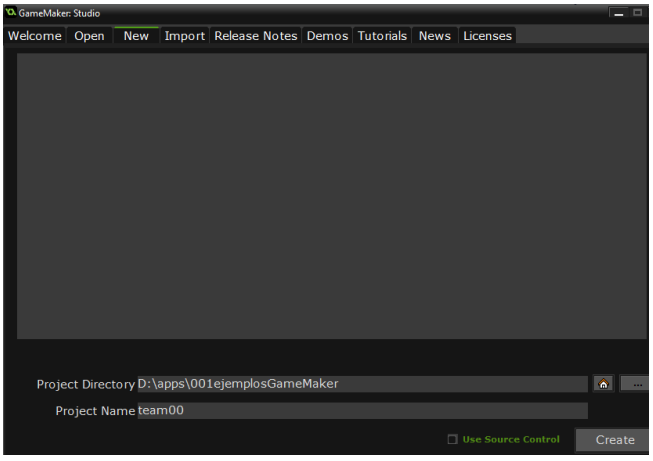
We are going to make a platform game, so you can see the example to know what kind of game is it.

Activity: Talk with your partners. What kind o f game can you make? Think about the scene (space, forest, ...) , characters, objects they can collect, ... You can modify your initial idea, but it would be interesting to have a base.

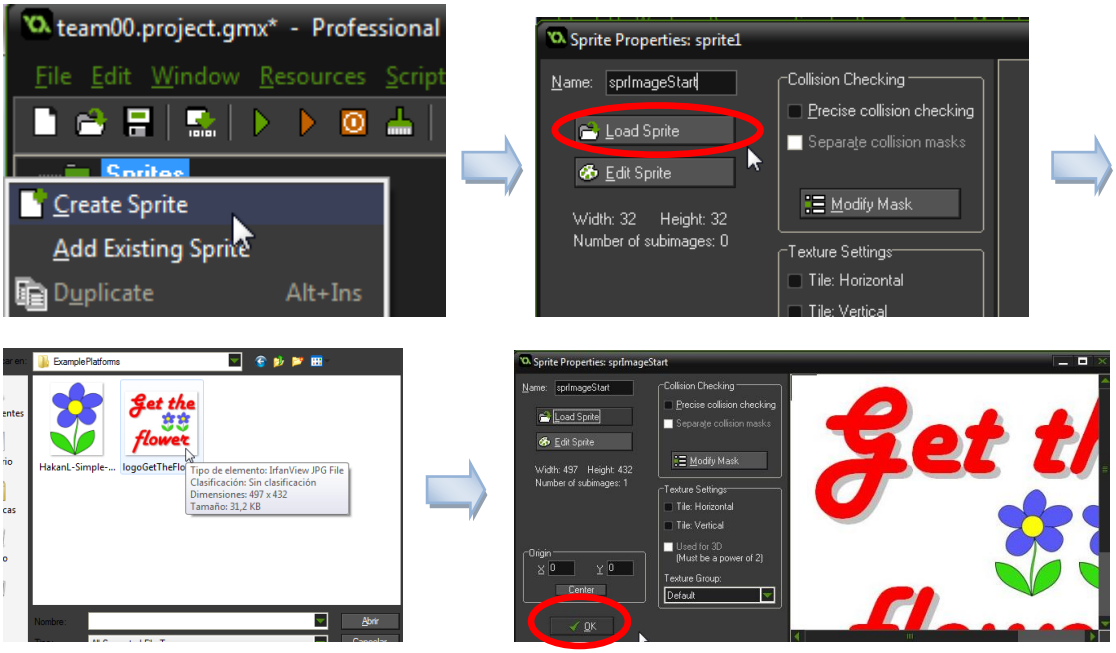
3.2. Create the start room.

Step 1. Create an image for the first screen of your game, use .jpg or .png format. Important: Use images with no copyright. You can search in OpenClipArt or ather webs with Creative Commons License. In this example, the start image will be:

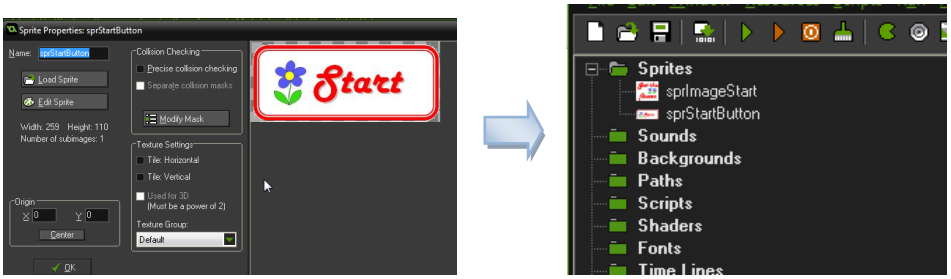
Step 2. Create a new Game Maker project, use the name 'teamXX', where XX is the number of your team.



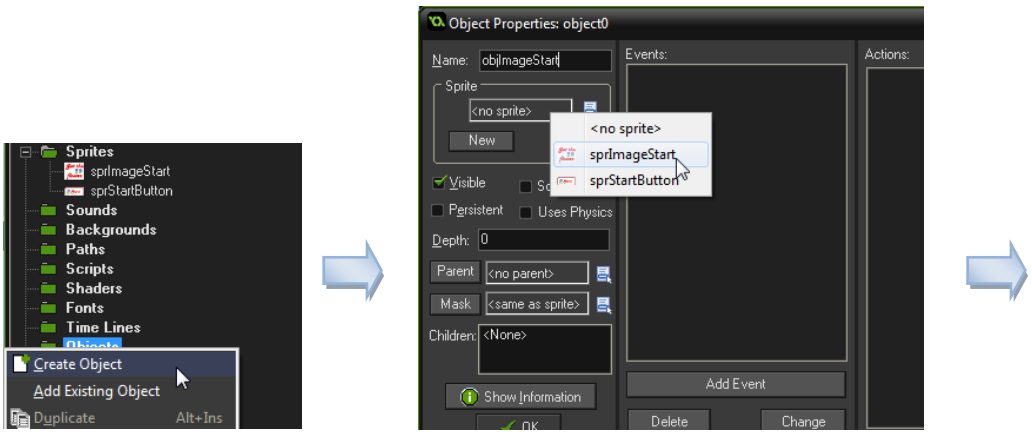
Step 3. Create a Sprite with your start image. Call it 'sprImageStart'. Upload the image you have created to this sprite.

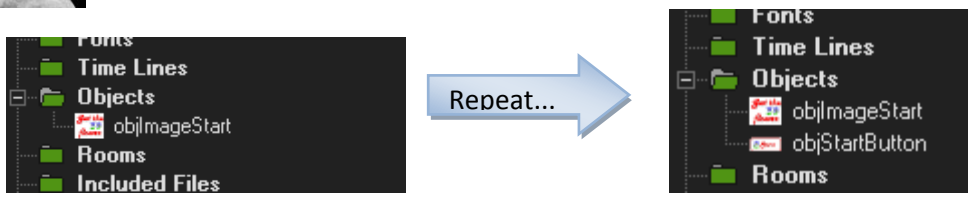


Step 4. Create a Sprite with a button, 'Start'. Repeat the process in the step 3, but in this case, use the name 'sprStartButton' and upload a image with a button called 'start'.

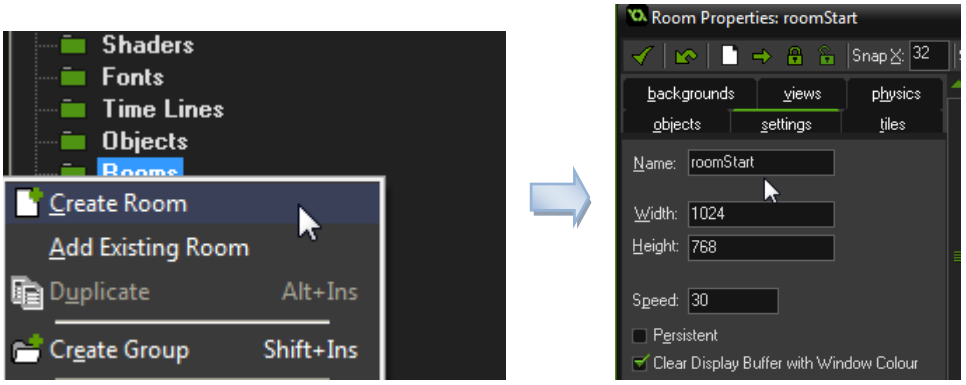


Step 5. Create two objects with the sprites 'sprImageStart' and 'sprStartButton'. Call them 'objImageStart' and 'objStartButton'.

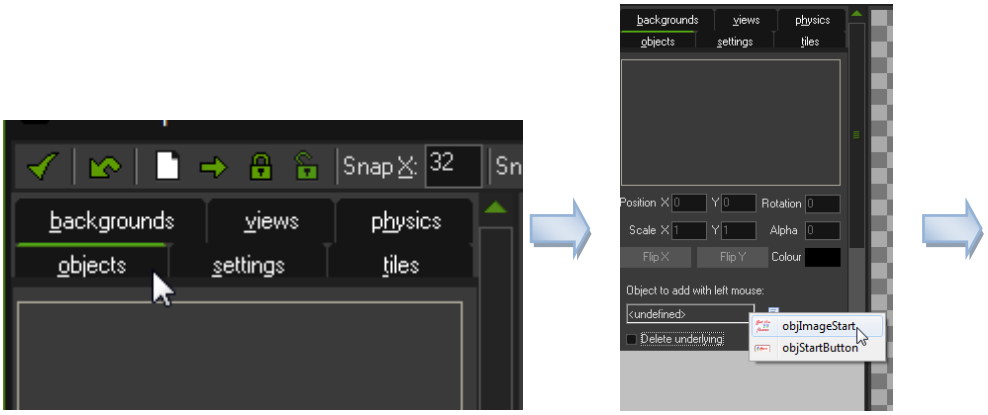


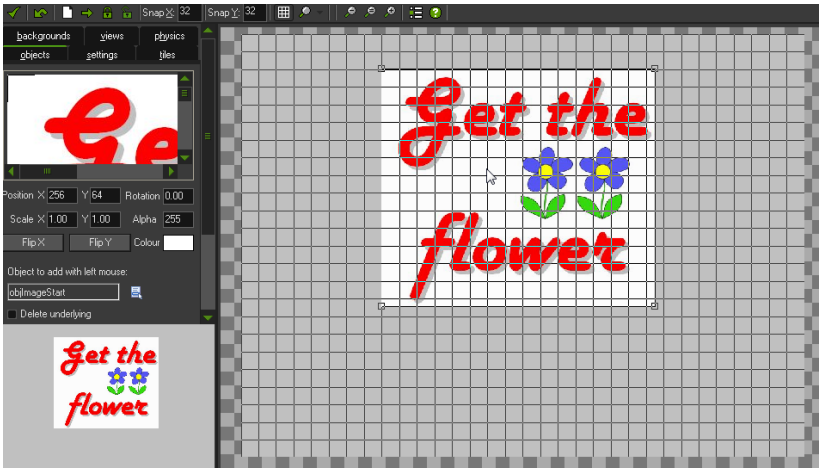


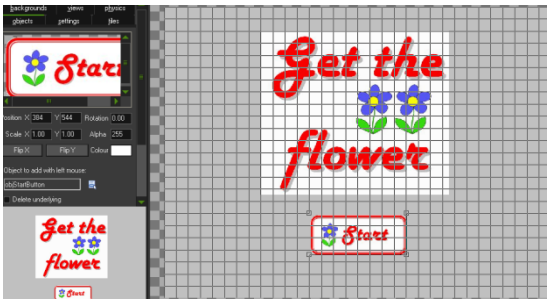
Step 6. Create a new room, call it 'roomStart'.



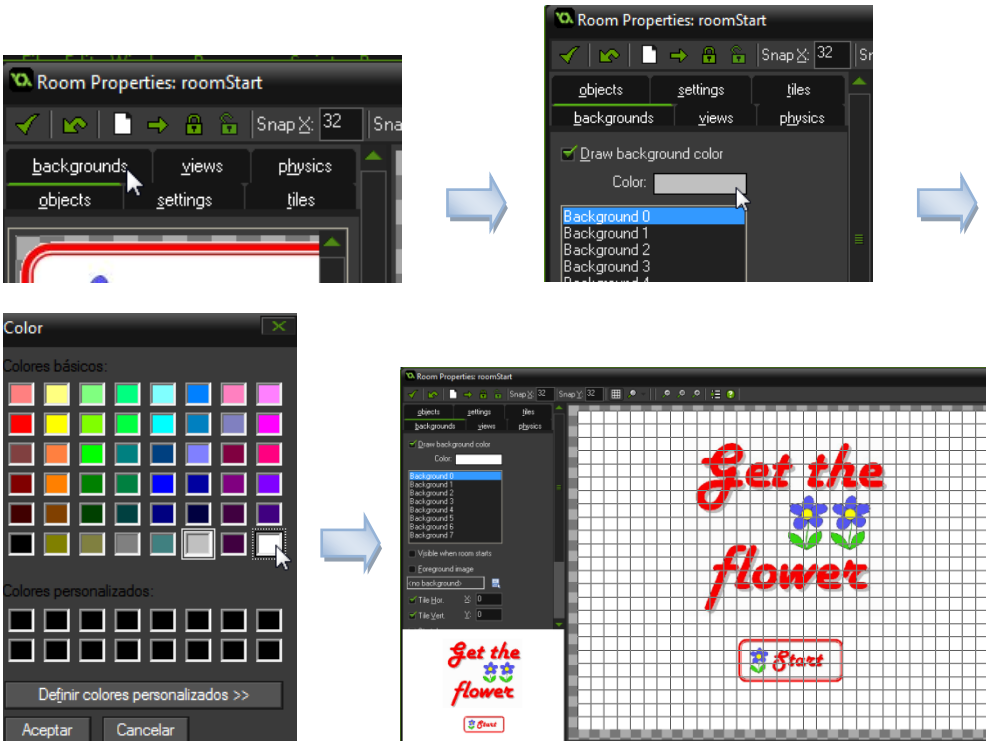
Step 7. Add the two objects 'objImageStart' and 'objStartButton' to the room.







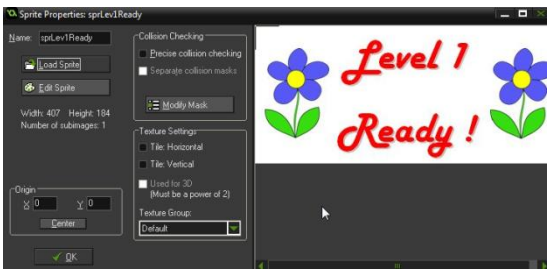
Step 8. You can change the background color, to improve the presentation.



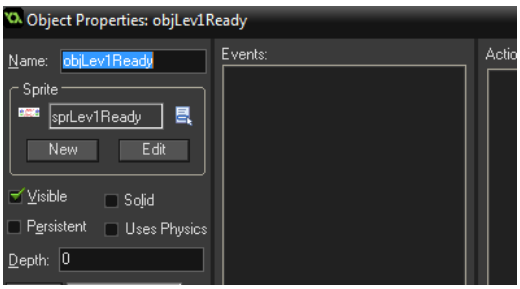
3.2. Create a 'Ready' room.

Well done! You have created the first room of your game. Now, we are going to create a very simple room: A room that says, 'Level 1, Ready!'.

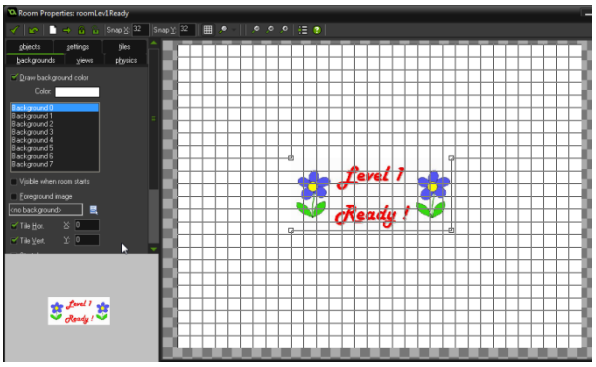
Step 1. Create a new Sprite, with the text "Level 1 - Ready!". Call the sprite 'sprLev1Ready'. You have to upload a .jpg or .png file, so you have to make an image with the text.



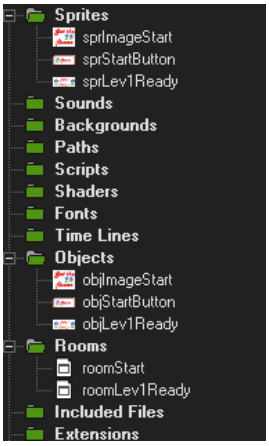
Step 2. Create a new object with the sprite 'sprLev1Ready'. Call the object 'objLev1Ready'.



Step 3. Create a new room. Call the room 'roomLev1Ready". Put into the room the new object, and you can change the background in order to have a better aspect.



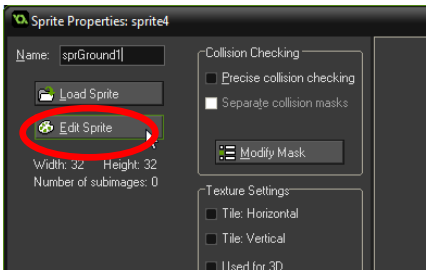
Good work! You have now this structure:

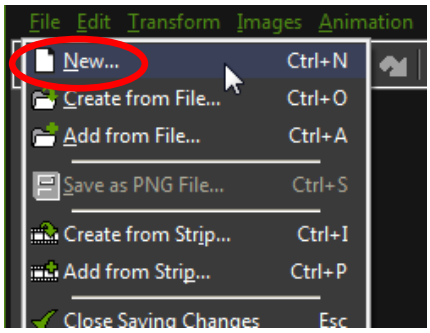


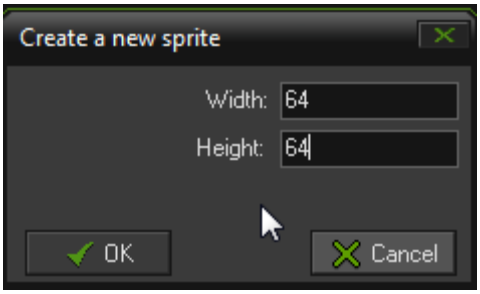
3.3. Create a level room.

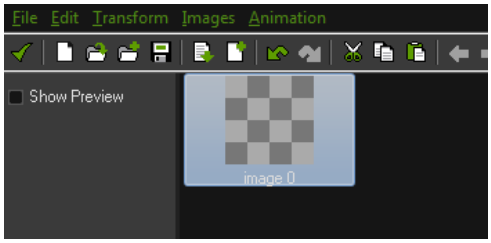
Now we are going to create the main of the game: characters, tiles, design of the level...

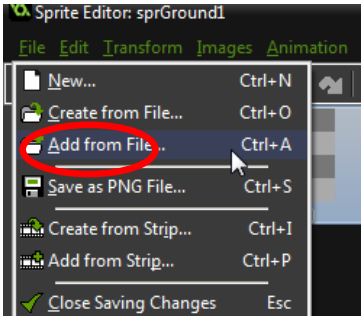
Step 1. Create the tiles for the ground. In this example, we are to create two kind of tiles, green and orange. The names, 'sprGround1' and 'sprGround2'. In order to put it better into the room, we are going to create the sprites with the dimensions 64x64 pixels:

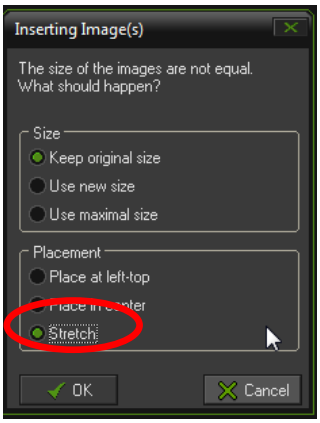

Sprite Properties: sprite4
Name: sprGround1
Load Sprite
Edit Sprite
Width: 32 Height: 32
Number of subimages: 0
Collision Checking
Precise collision checking
Separate collision masks
Modify Mask
Texture Settings
Tile: Horizontal
Tile: Vertical

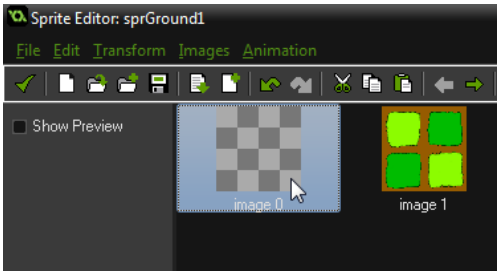

File Edit Transform Images Animation
New... Ctrl+N
Create from File... Ctrl+O
Add from File... Ctrl+A
Save as PNG File... Ctrl+S
Create from Strip... Ctrl+I
Add from Strip... Ctrl+P
Close Saving Changes Esc

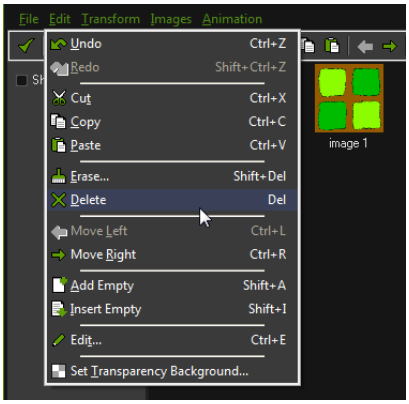

Create a new sprite
Width: 64
Height: 64
OK
Cancel

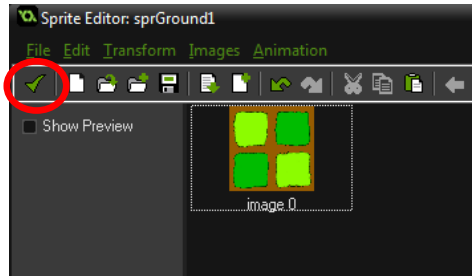

File Edit Transform Images Animation
Show Preview
image 0


Sprite Editor: sprGround1
File Edit Transform Images Animation
New... Ctrl+N
Create from File... Ctrl+O
Add from File... Ctrl+A
Save as PNG File... Ctrl+S
Create from Strip... Ctrl+I
Add from Strip... Ctrl+P
Close Saving Changes Esc

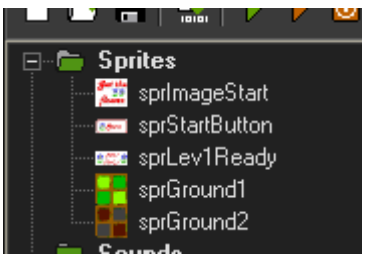

Inserting Image(s)
The size of the images are not equal.
What should happen?
Size
Keep original size
Use new size
Use maximal size
Placement
Place at left-top
Stretch
OK
Cancel


Sprite Editor: sprGround1
File Edit Transform Images Animation
Show Preview
image 0
image 1

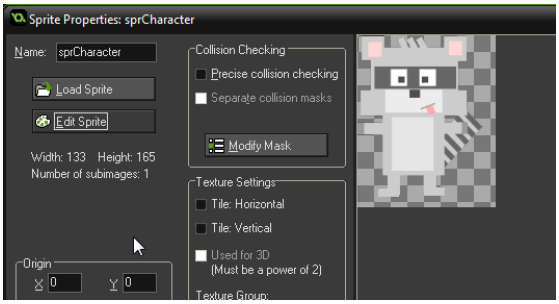

File Edit Transform Images Animation
Undo Ctrl+Z
Redo Shift+Ctrl+Z
Cut Ctrl+X
Copy Ctrl+C
Paste Ctrl+V
Erase... Shift+Del
Delete Del
Move Left Ctrl+L
Move Right Ctrl+R
Add Empty Shift+A
Insert Empty Shift+I
Edit... Ctrl+E
Set Transparency Background...
image 1


Sprite Editor: sprGround1
File Edit Transform Images Animation
Show Preview
image 0

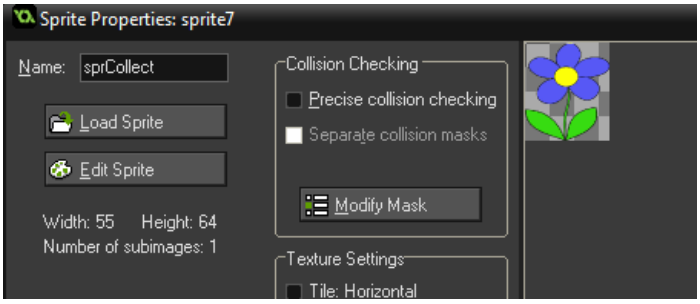
Create two


Sprites
sprImageStart
sprStartButton
sprLev1Ready
sprGround1
sprGround2

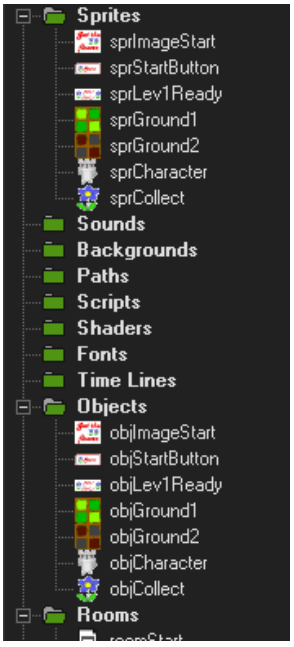
Step 2. Create the character. We are going to create another sprite 'sprCharacter', with the image of the main character.



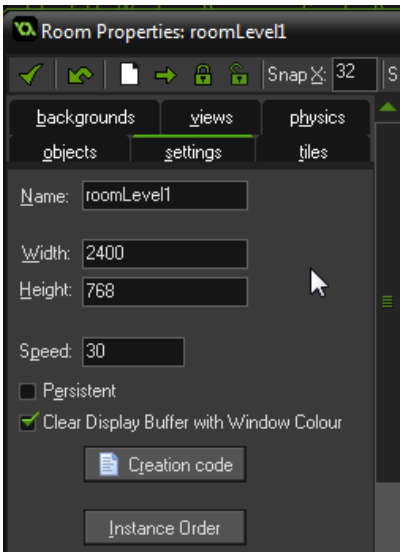
Step 3. Create the object to collect. In our example, it is a flower. The name of this sprite is going to be 'sprCollect'.



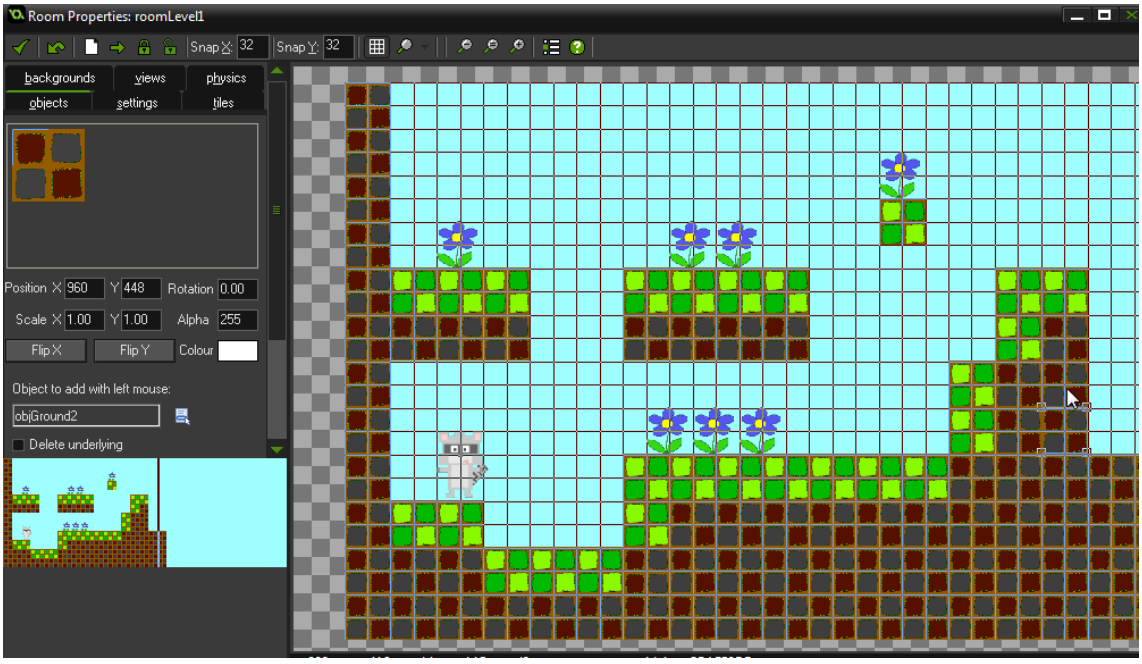
Step 4. Create the objects 'objGround1', 'objGround2', 'objCharacter' and 'objCollect'. Put the sprites 'sprGround1', 'sprGround2', 'sprCharacter' and 'sprCollect' in every one. This is the list of the elements you have at this time.



Step 5. Create the room for the level 1. Create a room with the name 'roomLevel1'. Put in the 'Settings' the size of this room, you can make it as large as you want. For example, we are going to make a room with 2400px of width and 768px of height (it's better to use sizes multiples of 32, in order to create a room with a better presentation).

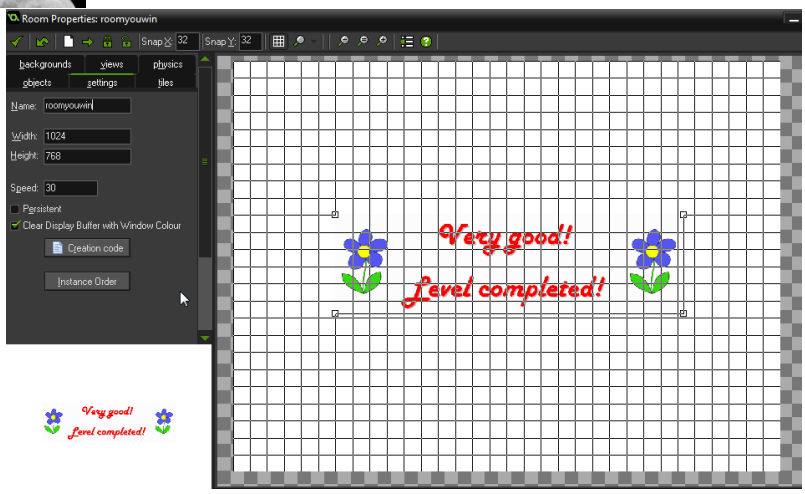


Step 6. Create the level! Put the objects 'objGround1' and 'objGround2' to create the ground. After that, put 'objCollect' in the places you want to be collected. And finally, put the main character (objCharater) in the position that you want it to start the level.



3.4. Create a room to show when you win.

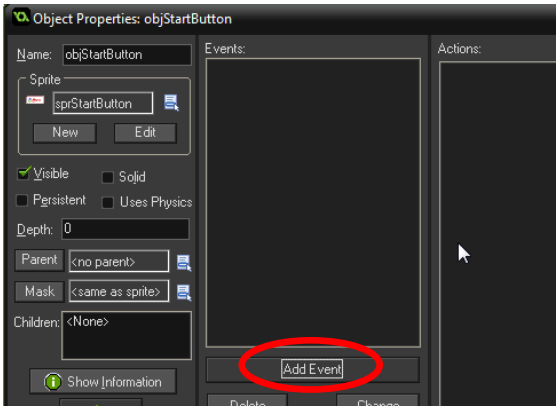
Repeat the steps at the point 3.2., but in this case, create a message like 'Very good! Level completed!'. Call the sprite you have to create 'spryouwin', the object 'objyouwin' and the room 'roomyouwin'.

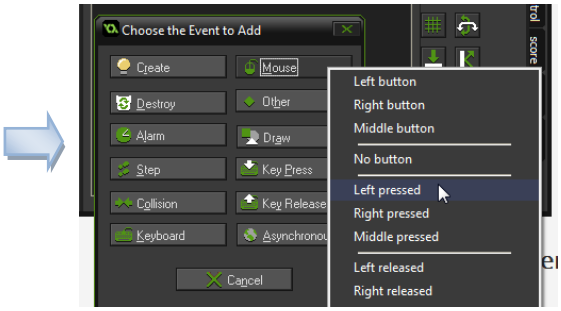


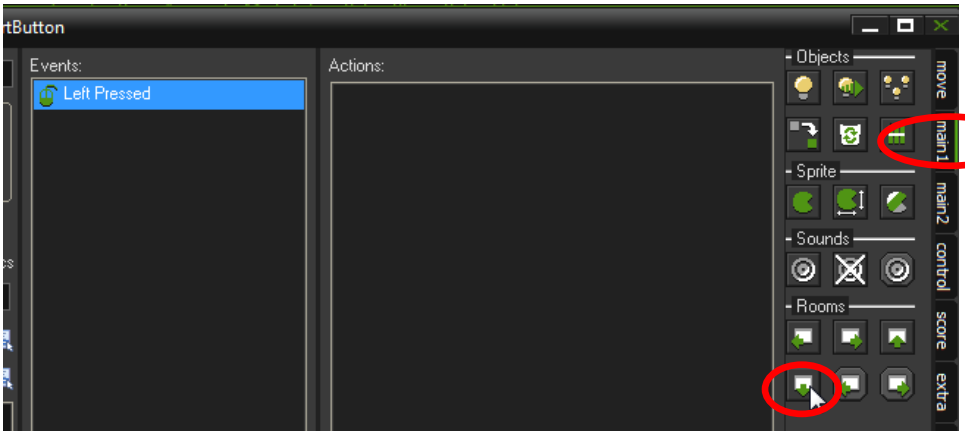
3.5. Implement the code.

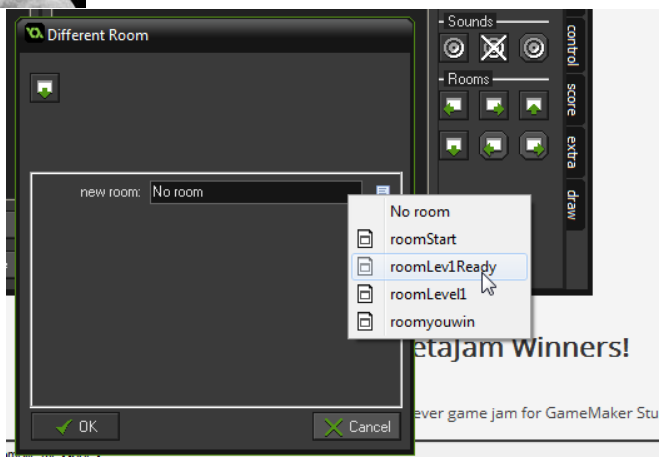
Now we have all our objects, rooms, etc. But nothing works yet. We have to implement the code to say the objects they have to work.

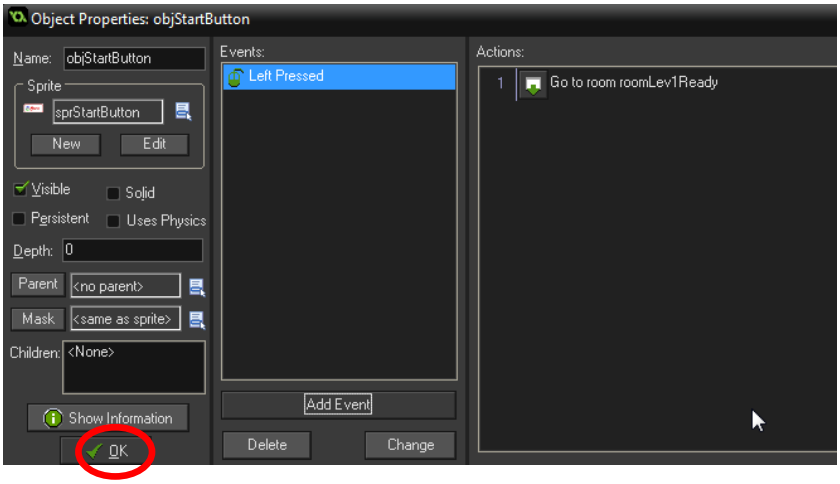
Step 1. When you press the button 'Start' , the room have to change from 'roomStart' to 'roomLev1Ready'. Do these things: Doubleclick at the object 'objStartButton'; after that, add the event 'Mouse > Left pressed'; in this event, select the sheet 'main1' and the icon to change the room. Select the room 'roomLev1Start' as new room.



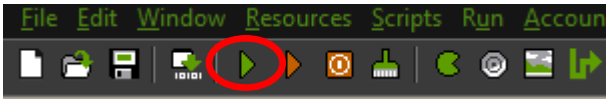






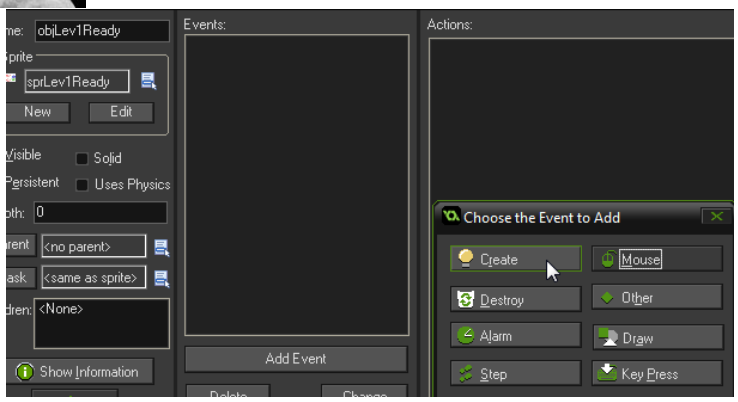


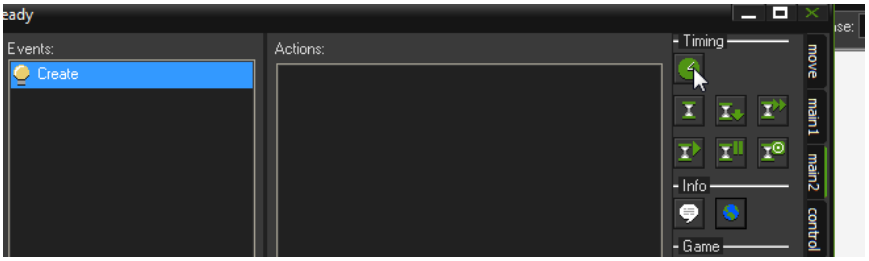
Step 2. Test the game to check if 'Step 1' works properly. You have to press this button to test it:

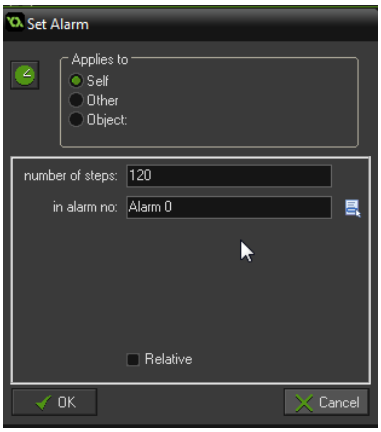


Change the room when you press the button? Very well! :)

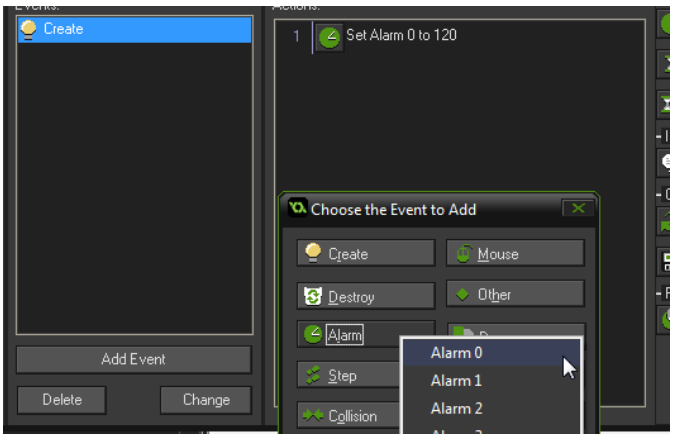
Step 3. After a few seconds, roomLev1Start have to disappear and show roomLevel1. You have to select the object 'objLev1Ready' (double click on it). After that, add the event 'Create' and put in it a main2 > , and set the alarm0 to 120 steps. After that, add the event 'Alarm0' and put in it the code to change the room.

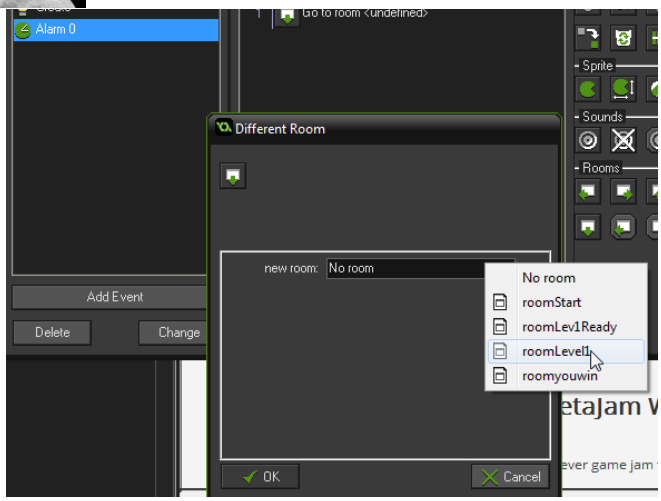

objLev1Ready
sprLev1Ready
New
Edit
Visible
Solid
Persistent
Uses Physics
0
<no parent>
<same as sprite>
<None>
Show Information
Events:
Add Event
Actions:
Choose the Event to Add
Create
Mouse
Destroy
Other
Alarm
Draw
Step
Key Press

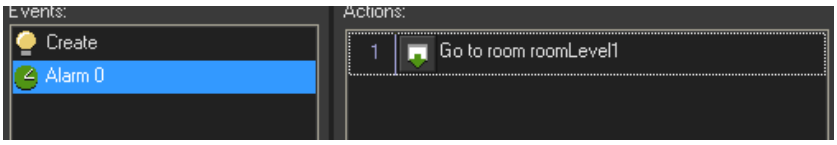

Events:
Create
Actions:
Timing
move
main1
main2
control
Info
Game


Set Alarm
Applies to
Self
Other
Object:
number of steps:
120
in alarm no:
Alarm 0
Relative
OK
Cancel

Events:
Create
Actions:
1
Set Alarm 0 to 120


Create
1
Set Alarm 0 to 120
Choose the Event to Add
Create
Mouse
Destroy
Other
Alarm
Step
Collision
Alarm 0
Alarm 1
Alarm 2
Add Event
Delete
Change





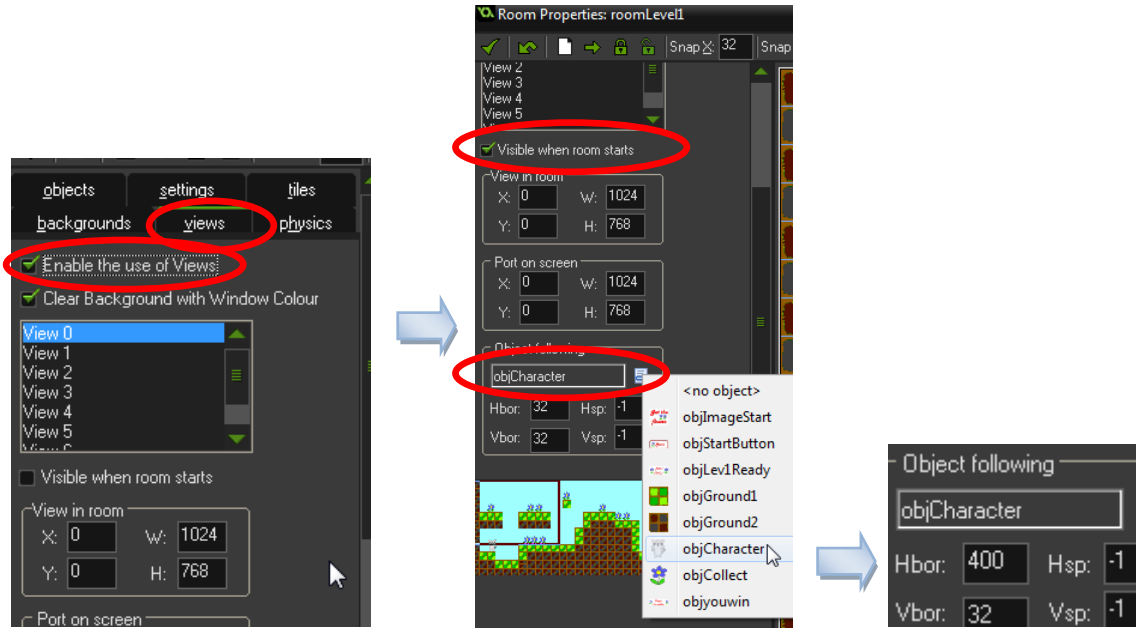
So, the code we have put in objLev1Start is:

* Event Create -> Set alarm0 to 120 steps.

* Event Alarm0 -> Change the room to roomLevel1.

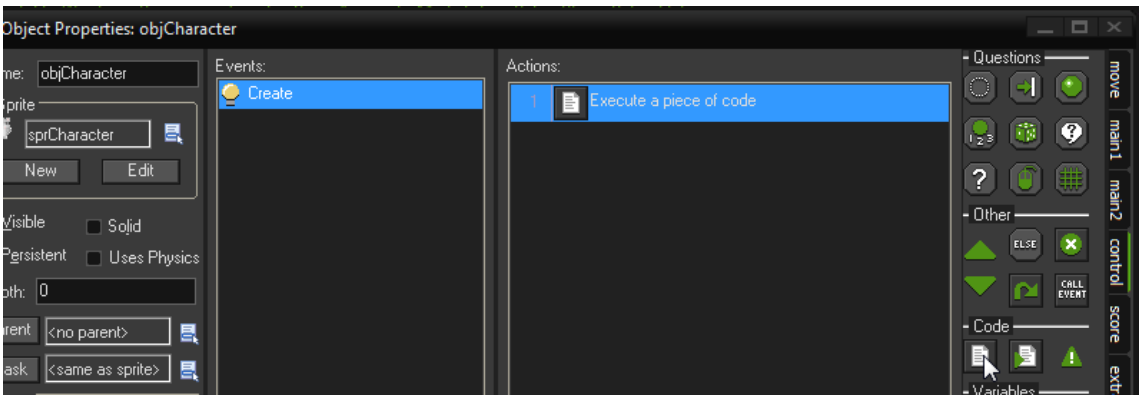
Step 4. Test the game. Check if the roomLev1Start change after a few seconds. Yes? It works! But you can see all the room stretched, we are going to solve this problem.

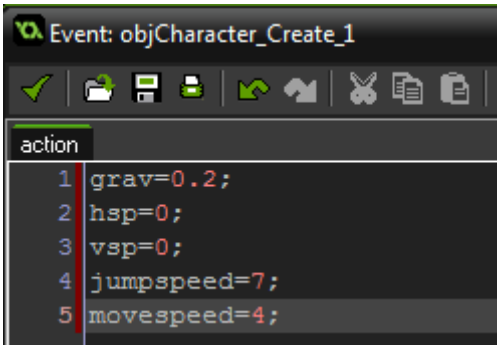
Step 5. Enable the use of views in roomLevel1. Double click on roomLevel1. Select the sheet 'views' and check 'Enable the use of Views'. After that, in the same sheet 'Views', select the object 'objCharacter' as Object following. Put Hbor=400. Also, check 'Visible when room starts'. Test the game again. :)



Step 6. Put these events and actions in the object 'objCharacter':

a) Event 'Create'. Put the action 'Control > Execute code' and type this code in it:

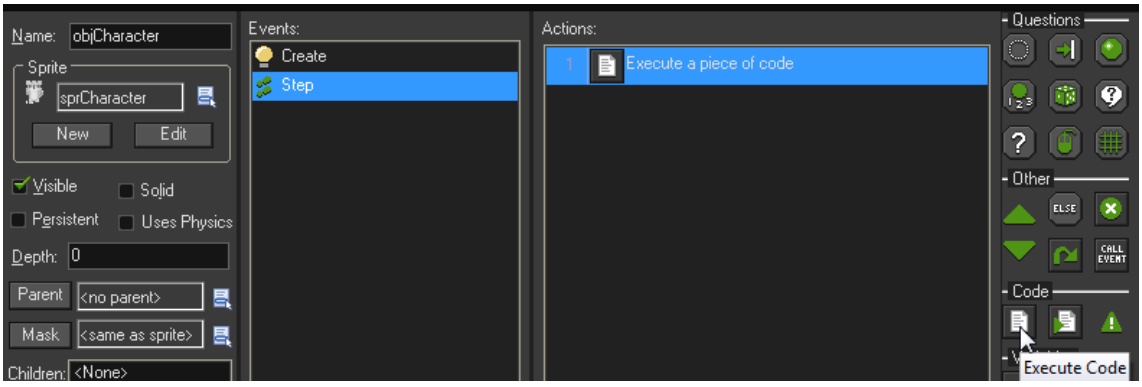




This code initialize some variables used in the game. Your teacher will explain you what's the meaning of everyone.

b) Event 'Step' (

) . Put the action 'Control > Execute code' and type this code in it:

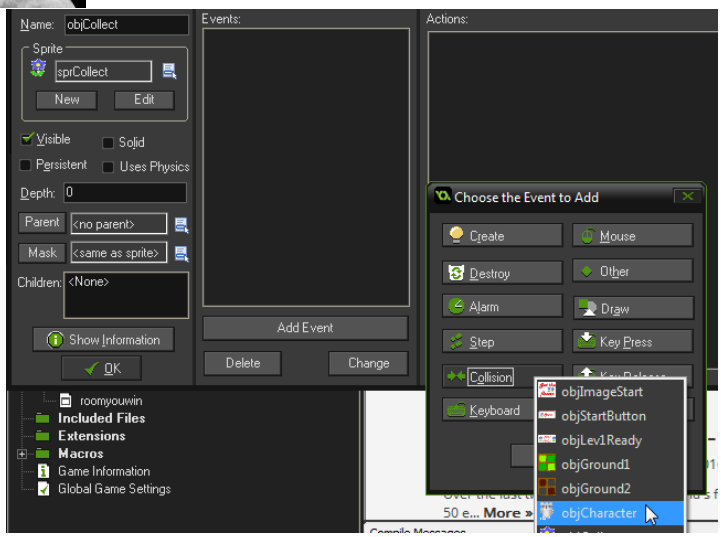


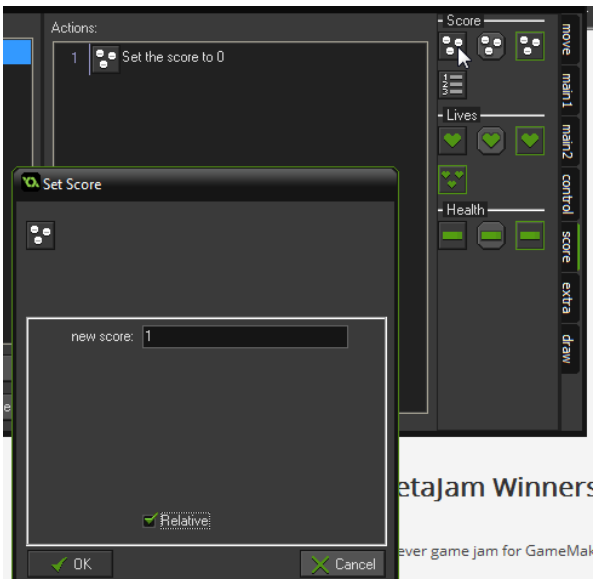
And type this code (35 lines!!):

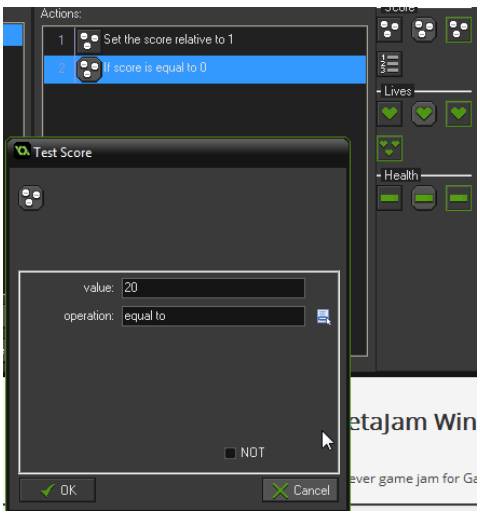
```
key_right=keyboard_check(vk_right);
key_left=-keyboard_check(vk_left);
key_jump=keyboard_check(vk_space);

move=key_left+key_right;
hsp=move*movespeed;
if (vsp<10) {vsp += grav;}

if (place_meeting(x,y+1,objGround1) or place_meeting(x,y+1,objGround2) )
    {
        vsp = key_jump * -jumpspeed;
    }

if (place_meeting(x+hsp,y,objGround1) or place_meeting(x+hsp,y,objGround2))
    {
        while (!place_meeting(x+sign(hsp),y,objGround1) and !place_meeting(x+sign(hsp),y,objGround2))
            {
                x += sign(hsp);

            }
        hsp=0;
    }

    if (place_meeting(x,y+vsp,objGround1) or place_meeting(x,y+vsp,objGround2))
    {
        while (!place_meeting(x,y+sign(vsp),objGround1) and !place_meeting(x,y+sign(vsp),objGround2))
            {
                y += sign(vsp);

            }
        vsp=0;
    }

x += hsp;
y += vsp;
```

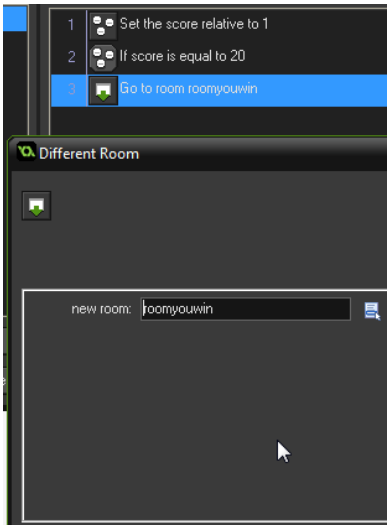
Test the game, and you will see how our character can go to left, right and jump.

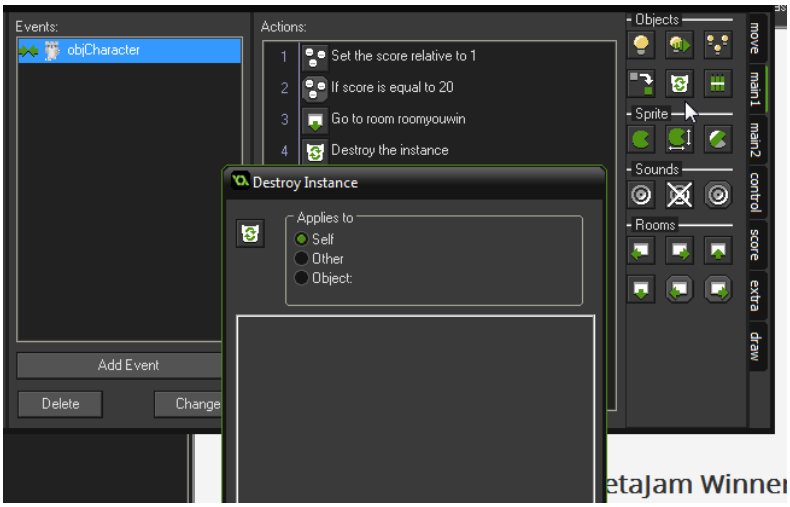
Step 6. Put these events and actions in the object 'objCollect': Collision with the object 'objCharacter'. And two actions in this event: Score > Set Score (and put new score as 1, and relative'; Score > Test the Score (and put the number of object that you have to collect to pass to next level, we have 20 flowers, so we put here 20); and Main1 > Destroy the instance (and don't make changes in the default values).

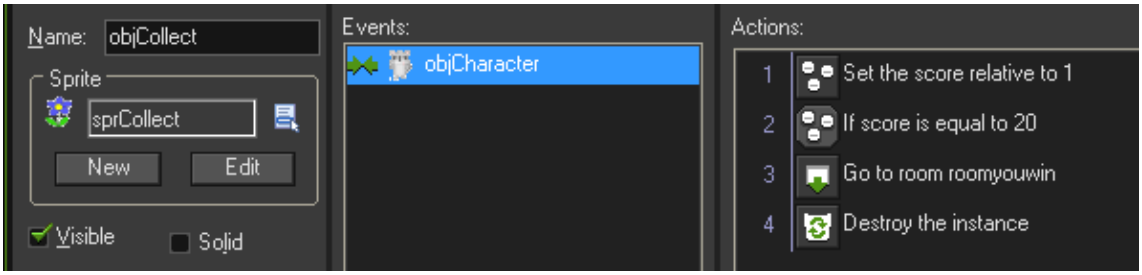

Name: objCollect
Sprite
sprCollect
New
Edit
Visible
Solid
Persistent
Uses Physics
Depth: 0
Parent <no parent>
Mask <same as sprite>
Children: <None>
Show Information
OK
Events:
Add Event
Delete
Change
Actions:
Choose the Event to Add
Create
Mouse
Destroy
Other
Alarm
Draw
Step
Key Press
Collision
Keyboard
objImageStart
objStartButton
objLev1Ready
objGround1
objGround2
objCharacter
roomyouwin
Included Files
Extensions
Macros
Game Information
Global Game Settings


Actions:
1 Set the score to 0
Score
Lives
Health
move
main1
main2
control
score
extra
draw
Set Score
new score: 1
Relative
OK
Cancel


Actions:
1 Set the score relative to 1
2 If score is equal to 0
Lives
Health
Test Score
value: 20
operation: equal to
NOT
OK
Cancel


1 Set the score relative to 1
2 If score is equal to 20
3 Go to room roomyouwin
Different Room
new room: roomyouwin





Test the game! Now you can collect the flowers, and when you collect the 20 flowers, you win. :)