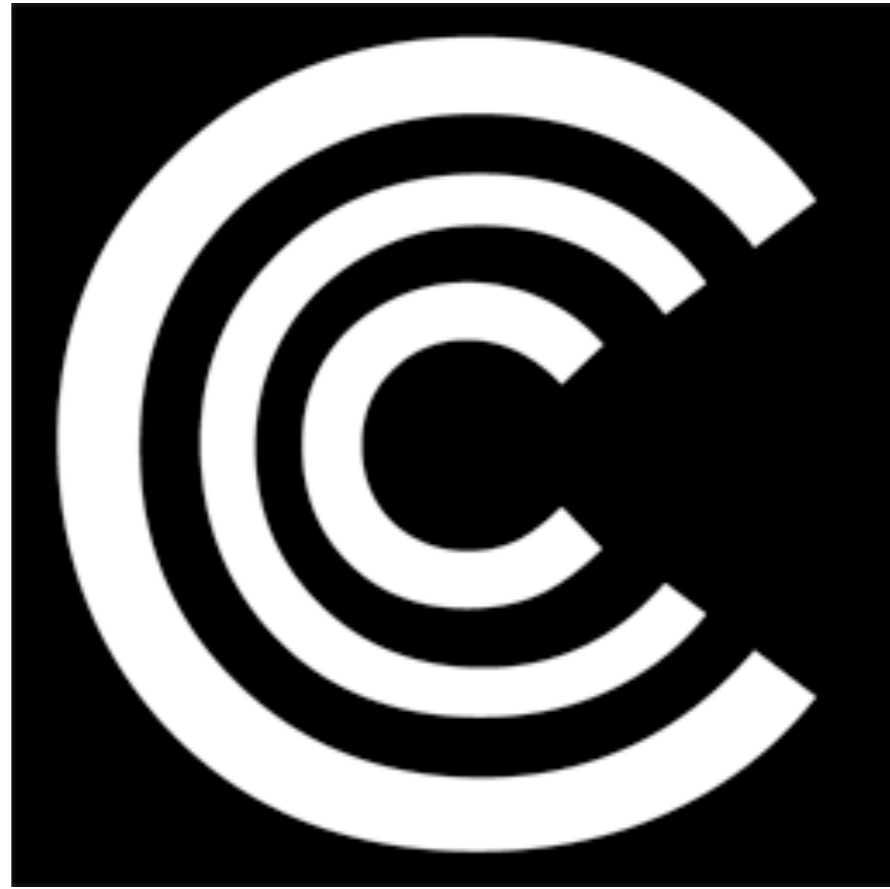


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Creative Computing Club Game Maker Introduction

www.pixelh8.co.uk

Set Up

For this tutorial we used Game Maker 8.1 some of the images and names may vary from version to version.

Download and install Game Maker as per the developers instructions.

First lets create a new folder on your Desktop called “Platform Game”.

Now lets open Game Maker and click on File and “Save”. Save the Game Maker .gn81 as “Platform Game.gm81”

Now lets get started.

Sprites

Sprites are the images our game uses, they are the good guys, the bad guys, the items, and platforms for our game. Sprites are just images they can't do anything except display themselves.

In the left sidebar there is a folder called "Sprites", right click on that and choose "Create Sprite".

A new window will open, for the Sprites name write "GoodGuy". Then click "Edit Sprite" at which point another window will open called the "Sprite Editor".

Under the "File" menu click "New, it will give you the options for the "Width" and "Height" of the "Sprite" 32 X 32 is fine for this project so click on "OK"

An image will now appear in the "Sprite Editor" window filled with white and grey blocks this indicates that this image is blank, or see through to be more specific.

Double click on the "Image 0" and the window will transform into a graphics editor program. Draw the "Good Guy" with the tools provided.

Tips for drawing graphics.

- 1) Make the feet or bottom of the "GoodGuy" and "BadGuy" touch the bottom of the image.
- 2) When drawing the "GoodGuy" it is best to make him chunky and round instead of thin and wiry.
- 3) Centre all of the graphics as best you can.
- 4) When drawing the "Platform" make it flat along the top, make it the entire width of the image and make it touch the top of the image.

Click on the Green tick when happy with the image, you can always come back and edit this later.

The "Sprite Editor" will now show you what the image will look like in the game.

Click on the green tick and will be back to the Sprite main area. Click on the "OK" and you are done.

Repeat these steps for the "BadGuy", "Item" and "Platform" at the end you should have four sprites the "GoodGuy", "BadGuy", "Item", and "Platform".
When you have completed these steps, save your Game Maker file.

Objects

Objects are the things that interact with each other in our game, they bring the images/sprites to life. They contain the rules of the game and define what they can and can't do.

In the left sidebar there is a folder called "Objects", right click on that and choose "Create Object".

A new window will open, for the objects name write "GOODGUY"

Under the "Sprite" menu where it says "<no sprite>" choose "GoodGuy"

When done click on the "OK" button.

Repeat these steps for the "BADGUY", "ITEM", and "PLATFORM" at the end you should have four objects, the "GOODGUY", "BADGUY", "ITEM", and "PLATFORM".

When editing the "PLATFORM" check the "Solid" box that way we know our "GOODGUY" can't pass through it.

We have capitalised their names to let us know we are talking about the objects and not the sprites.

We have also created all of the objects now as it will make it easier to edit the "GOODGUY" properties if they all exist before we start.

GOODGUY

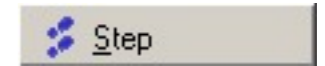
The “GOOD GUY” is our main character it will interact with the most different things in this game and therefore it contains the most “Events” out of all of our “Objects” it will seem daunting at first but we will do it one step at a time.

Double click on the “GOODGUY” object to edit its properties.

The first thing we are going to add is gravity.

Click on the “Add Event” button at the bottom of the screen choose “Step” and then “Step” again.

These actions will be checked again and again and that is why we are using it to check to see if the “GOODGUY” is standing on a solid block or falling.



On the far right hand side of the screen you will see a bar of options click on the “Control” tab, and look at the area called “Questions” they do simply that they ask questions about the game world.

Click and choose the “Check Empty” question and drag it into the “Actions” area.



Double click on the “Check Empty” question to edit its properties. Choose “Applies to” “Self”, give “X” a value of “0” and “Y” has a value of “2”, for “Objects:” choose “Only solid”, and check the box “Relative”. When completed click “OK”.

What this does is simple checks if there is anything solid 2 pixels below our “GOODGUY”, if there isn't it will execute the actions that follow this “Question” in the list. In this case it will turn on the gravity for our “GOODGUY” and it will begin to fall.

Go back over to the far right options, click on the “Move” tab. We are going to get our “GOODGUY” to move. Click on the “Set Gravity” button and drag it to below where the “Check Empty” question is. Double click on it. Choose “Applies to” “Self”, set “direction” to “270” and “gravity” to “0.5”. You can change this number but if the value is too high it can have adverse affect on the playability of the game. Click the “OK” button to close the “Set Gravity” properties.



What this does is sets the gravity of the “GOODGUY” to down at 0.5.

Go back to the options bar on the far right and click on the “Control” tab this time click on the “Else” button and drag it below the “Set Gravity” properties. This “Else” but checks the above “Check Empty” question at the top of the actions list, it sees if there is a solid object below our “GOODGUY” if there is, it tells it to stop falling.



Go back over to the far right options, click on the “Move” tab. We are going to get our “GOODGUY” to move. Click on the “Set Gravity” button and drag it to below where the “Else” action is. Double click on it. Choose “Applies to” “Self”, set “direction” to “270” and “gravity” to “0”. Click the “OK” button to close the “Set Gravity” properties.



This sets the downward gravity for our “GOODGUY” object to 0, stopping it from falling.

Speed Control

As the character falls it will increase in speed but we need to limit that to make it smoother and give the game better presentation.

Go back to the options bar on the far right and click on the “Control” tab, this time click on the “Test Variable” in the “Variables” section click on the button and drag it below the “Set Gravity” properties in the actions list.



Double click on the “Test Variable” icon in the actions list, Choose “Applies to” “Self”, set “variable” to “vspeed”, “value” to “8” and “operation” to “larger than”.

Go back to the options bar on the far right and click on the “Control” tab, this time click on the “Set Variable” in the “Variables” section click on the button and drag it below the “Test Variable” properties in the actions list.



Double click on the “Set Variable” icon in the actions list, Choose “Applies to” “Self”, set “variable” to “vspeed”, “value” to “8”. This limits the downward speed to 8.

The “Actions” list in the “Step” event should read like this from top to bottom.

“If a position is collision free”, “Set the gravity”, “Else”, Set the gravity” which actual makes sense if there is nothing below our “GOODGUY” turn gravity on, if there is turn it off. “If vspeed is larger than 8”, “Set variable vspeed to 8” if it is falling to fast, then slow it down a little.

Collision

Still in the “GOODGUY” object properties go to the “Add Event” button” and choose “Collision” and then choose “PLATFORM”. This sets up what happens if the “GOODGUY” collides with the “PLATFORM”.



Go back over to the far right options, click on the “Move” tab. Click on the “Speed Vertical” button and drag it to the “Actions” area. Double click on it and choose “Applies to” “Self”, set “vert.speed” to “0”.



Click “OK” to close the “GOODGUY” object properties.

Rooms

In the left sidebar there is a folder called “Rooms”, right click on that and choose “Create Room”.

This will make a level for our character to move around in.

A new window called “Room Properties” should open up, click on the “Objects” tab, then left click on the image of the object displayed to bring up a list of other objects to choose from. In this case choose “PLATFORM”.

Draw a solid line of “PLATFORM”s across the bottom of the screen. By left button clicking on the room area.

Left click on the image of the object displayed under the “Objects” tab to bring up a list of other objects to choose from. In this case choose “GOODGUY” place a “GOODGUY” object high above the “PLATFORMS” in the centre of the screen.

Click on the Green tick to close the “Room Properties” window.

Test

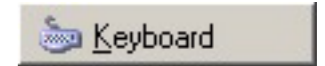
When done click on the “Play” button to test out if you “GOODGUY” is working properly.

Press “Esc” on you keyboard when done testing.

When you have completed these steps, save your Game Maker file.

GOODGUY (Move Left and Right)

In the “GOODGUY” object properties go to the “Add Event” button” and choose “Keyboard” and then choose “<LEFT>”.
The actions in the list will occur every time the Left Cursor key is pressed.



On the far right hand side of the screen you will see a bar of options click on the “Control” tab, and look at the area called “Questions”, click and choose the “Check Empty” question and drag it into the “Actions” area.



Double click on the “Check Empty” question to edit it's properties. Choose “Applies to” “Self”, give “X” a value of “-4” and “Y” has a value of “0”, for “Objects:” choose “Only solid”, and check the box “Relative”. When completed click “OK”. This will check if there is anything solid obstructing the “GOODGUY” to the left of it, if not it does the next item on the actions list.

Go back over to the far right options, click on the “Move” tab. We are going to get our “GOODGUY” to move if nothing is obstructing it. Under the “Jump” section choose “Jump to Position” and drag it under the “Question” in the action list.



Double click on the “Jump to Position” icon and choose “Applies to” “Self”, give “X” a value of “-4” and “Y” has a value of “0” and check the box “Relative”. When completed click “OK”.

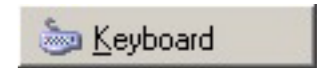
The same will now be true with the “<RIGHT>” key, however instead of X being -4 they will be +4 .

Test Again

When done click on the “Play” button to test out if you “GOODGUY” is working properly. Press “Esc” on you keyboard when done testing.
When you have completed these steps, save your Game Maker file.

GOODGUY (Jumping)

In the “GOODGUY” object properties go to the “Add Event” button” and choose “Keyboard” and then choose “<UP>”.
The actions in the list will occur every time the Up Cursor key is pressed.



On the far right hand side of the screen you will see a bar of options click on the “Control” tab, and look at the area called “Questions”, click and choose the “Check Collision” question and drag it into the “Actions” area.



Double click on the “Check Collision” question to edit it's properties. Choose “Applies to” “Self”, give “X” a value of “0” and “Y” has a value of “2”, for “Objects:” choose “Only solid”, and check the box “Relative”. When completed click “OK”. This checks if the “GOODGUY” object is standing on a solid object before it can jump.

Go back over to the far right options, click on the “Move” tab. We are going to get our “GOODGUY” to jump if it is standing on a solid object. Under the “Jump” section choose “Speed Vertical” and drag it under the “Question” in the action list. So if it is on the platform it can jump if it is not, it can't. Logical. Can you jump while in the air?



Double click on the “Speed Vertical” icon. Choose “Applies to” “Self”, give “vert. speed ” a value of “-14”. When completed click “OK”. The “-14” can be changed to any number you wish however it must be a negative number to make the character jump. 8 is good as well.

Your character should now be able to Jump, fall and move Left and Right.

GOODGUY (Collect items and move to next level)

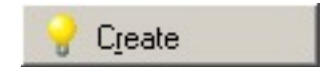
SET UP THE SCORE

In our platform game our character is going to need to collect five items to get to the next level, therefore at the beginning of each level and every time our character dies the amount of items needs to be set to zero.

In the “GOODGUY” object properties go to the “Add Event” button” and choose “Create”. The actions in the list will occur every time the “GOODGUY” appears on a new level or is brought back from the dead.

On the far right hand side of the screen you will see a bar of options click on the “Score” tab, and look at the area called “Score”, click and choose the “Set Score” action and drag it into the “Actions” area.

Double click on the “Set Score” icon in the actions list and choose to set the “new score” to “0” and then click on “OK” this just sets the score back to zero every time the character starts again.



ITEM COLLECTION

In the “GOODGUY” object properties go to the “Add Event” button” and choose “Collision” and then choose “ITEM”. The actions in the list will occur every time the “GOODGUY” collides with the “ITEM”

On the far right hand side of the screen you will see a bar of options click on the “Score” tab, and look at the area called “Score”, click and choose the “Set Score” action and drag it into the “Actions” area.

Double click on the “Set Score” icon in the actions list and choose to set the “new score” to “+1”, **check the “Relative” box** and then click on “OK” this adds one to the score every time an item is collected.

On the far right hand side of the screen you will see a bar of options click on the “Main1” tab, and look at the area called “Objects”, click and choose the “Destroy Instance” action and drag it into the “Actions” area below the score icon.

Double click on the “Destroy Instance” and choose “Other” and click “OK”. This destroys the “ITEM” and you want to do that else you would be able to repeatedly collect it. The “Other” in this case refers to the “ITEM” as we are currently editing the “GOODGUY” properties.



EXIT

We now want to check how many items we have to see if we have enough to progress to the next level.

On the far right hand side of the screen you will see a bar of options click on the “Score” tab, and look at the area called “Score”, click and choose the “Test Score” action and drag it into the “Actions” area.



Double click on the “Test Score” icon and set “value” to “5” if you want to collect five items per level and “operation” to “equals to”, then click “OK”. Now we have asked a question of the game world we need to say what to do if that questions answer is positive.

On the far right hand side of the screen you will see a bar of options click on the “Main1” tab, and look at the area called “Rooms”, click and choose the “Check Next” action and drag it into the “Actions” area. This checks if there is another room. So now we have two questions that need to be answered positively before the next action is run.



So, if the “GOODGUY” has collected five items and there is another room after this one, go to it.

On the far right hand side of the screen you will see a bar of options click on the “Main1” tab, and look at the area called “Rooms”, click and choose the “Next Room” action and drag it into the “Actions” area.



Double click on this and choose your transition style, the choice is up to you. Click “OK” when done.

Before we can test this however several things must be in place, firstly there must be five items to collect on the level, secondly there must be another room to go to.

After you have added these....

Test Again

When done click on the “Play” button to test out if you “GOODGUY” is working properly.
Press “Esc” on you keyboard when done testing. When you have completed these steps, save your Game Maker file.

Additionally you can add an “ELSE” to say if there isn't another room then go back to the first room again.

GOODGUY (Fall to death and collision with BADGUY)

COLLIDE WITH BADGUY

Every game has to have its obstacles to make it challenging. For this platform game falling of the bottom of the screen and bumping in to a “BADGUY” will provide the obstacles. Bumping in to the “BADGUYS” is similar to collecting an “ITEM” but instead of progressing to the next level, we need the level to reset.

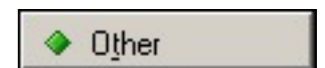
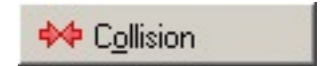
In the “GOODGUY” object properties go to the “Add Event” button” and choose “Collision” and then choose “BADGUY”. The actions in the list will occur every time the “GOODGUY” collides with the “BADGUY”

On the far right hand side of the screen you will see a bar of options click on the “Main1” tab, and look at the area called “Rooms”, click and choose the “Restart Room” action and drag it into the “Actions” area. Choose your transition style and click “OK”. Job done, every time they collide the room restarts.

FALL TO DEATH

In the “GOODGUY” object properties go to the “Add Event” button” and choose “Other” and then choose “Outside Room”. The actions in the list will occur every time the “GOODGUY” falls outside the boundaries of the room, remember this includes the top, left and right of the screen too.

On the far right hand side of the screen you will see a bar of options click on the “Main1” tab, and look at the area called “Rooms”, click and choose the “Restart Room” action and drag it into the “Actions” area. Choose your transition style and click “OK”. Job done, every time the “GOOD GUY” falls outside of the room, the room restarts.



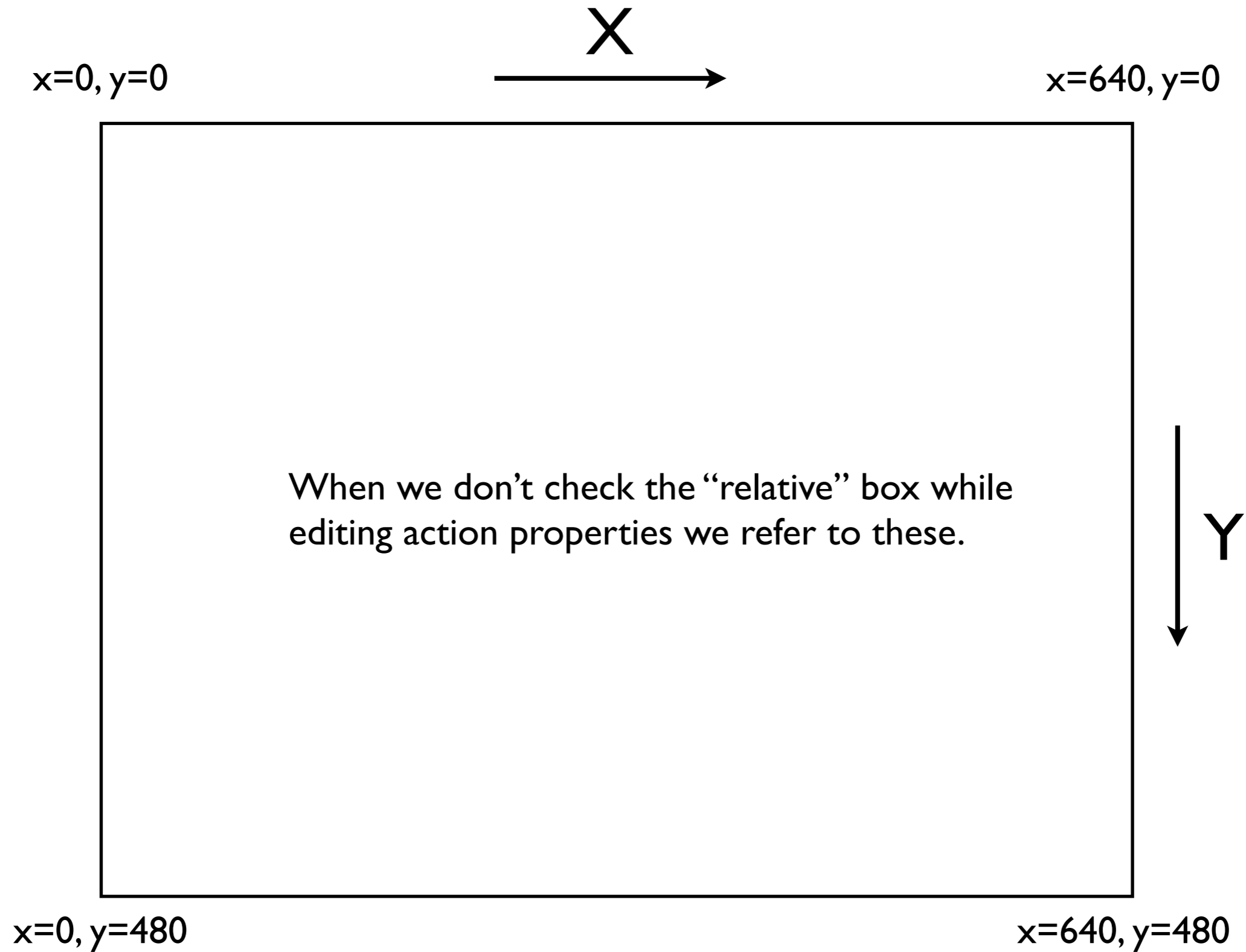
What now?

Well that is entirely up to you. I have purposefully left certain things out i.e. lives as I have already provided you with the framework in ITEMS to work out how to add them. Things you can add are; more bad guys, credits screen, intro screen and sound effects. The Good Guy sprite could change depending on the direction it is moving, BADGUYS could move and we haven't even touched on animation yet. This was purely to serve as an introduction to the fantastic Game Maker software, the rest is up to you.

Have fun,

Check out <http://creativecomputingclubsuffolk.blogspot.co.uk/> to see how we did.

The game screen “Absolute” coordinates.



The game screen coordinates and “Relative” coordinates.

