

Scratch Programming Lesson 10

Game Programming Part 1 – Game Design

In lesson 7, we took a look at an existing sample game, The Pong Game, and we also had made changes to this game to make it more interesting. In lesson 10 through 14, I will cover what you need to learn to make a mini Super Mario game.



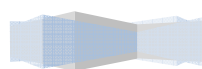
We will cover the following:

- Designing a Game (Lesson 10)
- Creating Game sprites (Lesson 11)
- Adding Game Rules to Game Sprite (Lesson 12)
- Changing Background when Mario Moves (Lesson 13)
- Managing Score and Levels (Lesson 14)

After following these classes, you should feel very comfortable creating your own game. Let's start!

Here is a basic table that we need to fill in:

Game Name	Mini Mario
Sprites	List of sprites: name, costumes, sounds, movements
Sprite Interaction	How sprites interact in this game
Backgrounds	The list of background doodles here
Scores and Levels	The score counter rule and level advancement rule here



Let's expand each item to its own table:

GAME NAME	
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SPRITES	Name	Look	Sound	Movement

SPRITE INTERACTION	Sprite1	Sprite2	Interaction

BACKGROUNDS	Name	Look

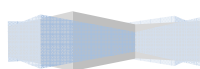
SCORE AND LEVELS	How	How many points




LEVELS	Level	Requirement	Starting Background	Ending Background

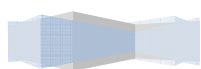
You may download the PDF form of above table [HERE](#).











Let's fill in each table for this game:

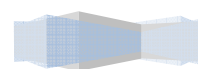
GAME NAME	Mini Mario
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Name	Look	Sound	Movement/ Action
Mario 	-Walk1 -Walk2 -Jump Up -Jump Down	-Jump -Die -Enter -Score -Grow -Shrink	-Walk -Jump -Die -Grow -Shrink
Fruit Platter 	-Delicious	None	None
Princess 	-Surprised -Happy	-Happy tune	-Jump up and down for joy
Brick 	-Regular -Cracked	-Crushed	-Crushed
Bat 	-Fly1 -Fly2	-Wing flap	-Fly
Coin 	-Spin1 -Spin2 -Spin3	-Bling-bling	-Spin
Crab 	Walk1 Walk2	-None	-Walk

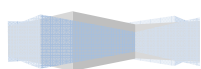


Sprite1	Sprite2	Interaction
Mario 	Brick 	If Mario hand hits Brick, then Brick would crack.
Mario 	Coin 	If Mario touches Coin, Coin would disappear and Mario would score 1 point.
Mario 	Crab 	If Mario touches Crab, he would die.
Brick 	Coin 	When Brick cracks, Coin would show spinning above Brick
Mario 	Stage 	When Mario hits the bottom of the stage, he would die.



Name	Description
Level1_1 	Solid ground, several bricks (to be added from sprites), crabs as enemies
Level1_2 	Holes in ground, several bricks, crabs as enemies
Level1_Passed 	Fruit platter
Level2_1 	Solid ground, several bricks, bats as enemies
Level2_2 	Holes in ground, several bricks, bats as enemies
Level2_Passed 	Princess

Level	Requirement for this Level	Starting Background	Ending Background
1	When the game is started	Level1_1	Level1_2
2	When Mario grabs the	Level2_1	Level2_2



	Fruit Platter in Level 1		
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Whew!! We are done for the design stage. This may seem a lot of work but it's always a good idea to lay out the design in as much detail as possible for your masterpiece, whether it is an animation or a game. Once you take the time to design your game, the building part should be straight forward.

In Lesson 11, we will work together to create the sprites for our Mini Mario game.

