Building a Simple Platformer with Blender

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Defaults

1. Change the Blender Render dropdown at top to Blender Game.
2. Enlarge the right hand side panel.
3. In the Properties window, change the Shading from Multitexture to Glsl.
4. In the 3D window, change the Viewport shading from Solid to Texture.
5. Enlarge the bottom panel and change the window from Timeline to Logic editor.
6. Under the Game menu, enable Show debug properties.
7. You may now want to save your defaults, with File →User Preferences →Interface →Save User Settings. If you do this, you only have to do the above steps once!

Character movement on a plane

1. Drag the cube up a couple units.
2. Center the cursor with Shift-C
3. Add a mesh plane with Shift-A
4. Scale the plane with S, 20, Enter.
5. Select the cube with Right-click.
6. In the physics button on the Properties panel, make the cube's Physics type a Character.
7. Also check the Collision bounds box.
8. In the 3d window, press P to play the game and see if the cube falls to the plane.
9. Press Escape to stop playing the game.
10. Select the cube with Right-click.
11. Add a Sensor of type Keyboard.
12. Click the Key field of the sensor and touch the W key. Also name the sensor W
13. Add an Actuator of type Motion.

14. Change the motion from [Simple motion] to [Character motion].
15. Change the [Y] field to [0.1].
16. Wire up the sensor to the actuator.
17. In the 3d window press [P] and then in the game press [W] to see if the character moves.
18. Press [Escape] to stop playing the game.

Turning and jumping with the mouse

1. Add a [Mouse] sensor of type [Movement]
2. Connect it to a [Mouse] actuator of type [Look]
3. Disable the [Y] axis.
4. Test your game, moving and turning.
5. Add a [Keyboard] sensor for the [Space] key.
6. Activate the [Tap] button on the sensor.
7. Connect it to a [Movement] actuator of type [Character motion] and select the [Jump] button.
8. Test your game, moving, turning, and jumping.
9. If you want higher jumps, adjust the [Jump force] in the [Physics] button of the [Properties] panel.

Changing the shape of the cube

1. Select the cube.
2. Press [Tab] to enter edit mode.
3. Select the top two vertices on the [Y] side of the cube.
4. Scale them down a bit: press [S] and then slide the mouse, then click.
5. Move them back a bit: press [G] and then [Shift-x] and then slide the mouse, then click
6. Rename the cube. Call it [Bob].

Add colors

1. Change the lamp to a sunlamp. Select the lamp, and in the [Data] button on the [Properties] panel select [Sun].
2. Select the ground. In the [Material] button on the [Properties] panel add a new material.
3. Click in the [Diffuse] box and pick a color.
4. Slide the [Specular] intensity down to zero.
5. Similarly, pick a color for [Bob].
6. Adjust your lamp intensity as desired.
7. You may want to add a (shadowless) backlight in the opposite direction of your sun. Turn it way down.

Better Cameras

1. Camera 1:
   (a) Select the camera.
   (b) Add an Always sensor.
   (c) Add a Camera actuator.
   (d) Test the game, experimenting with the Min, Max, Height and Damping until you get it right.
2. Camera 2:
   (a) Add another camera.
   (b) Position this camera behind Bob so you can see over his/her shoulder: In the View part of the N-toggled shelf in the 3d view, click Lock Camera to View. Then fiddle with the camera until you're happy.
   (c) Unclick the Lock Camera to View and move to where you can see both camera and Bob.
   (d) Parent the camera to Bob:
      i. Select the camera
      ii. Shift-select Bob
      iii. Press Control-P and parent to the Object.
   (e) Test game.
   (f) Select the camera by itself.
   (g) Add another Mouse Movement sensor.
   (h) Link it to a Mouse Look actuator.
   (i) Disable the X axis in the actuator.
   (j) Test game.
3. Which camera do you like best?
   (a) You can add a keypress to switch between cameras.

Add platforms

1. Position 3d cursor.
2. Add a cylinder with Shift-s. Name it Platform.
3. Scale Z small and scale X and Y (use Shift-z) large.
4. Add a material.
5. Duplicate the platform and spread them about jumpable distances from each other.
6. Test the game. Make one platform hard to get to.

Add moving obstacle

1. Add a cube just above one of the platforms. Add material and color. Name it Blocker.
2. Add a Property: Open the N-shelf in the Logic window, click the plus. Set the type of the property to Integer. Set its name to Steps.
3. Enable debugging for Steps by clicking the little i.
4. Add an Always sensor, and click the True pulse button (three dots on top).
5. Add a Motion actuator, moving X positive 0.1.
6. Add a Property actuator, which adds 1 to Steps.
7. Connect the Always sensor to *both* the Motion and Property actuators using a single And controller.
8. Add a Property actuator, which checks whether the Steps value is greater than 120 (two seconds).
9. Connect this up to a State actuator which will change state to the lower-left corner state. (Actually state 16.)
10. Switch to State 16.
11. Add an Always sensor that will move -0.1 in X every step, and add -1 to the Steps property.
12. Add a Property sensor that will change back to State 1 when Steps becomes less than 0.
13. Test your game and see if the cube moves back and forth.
14. Duplicate the cube, rotate it, and place copies over other platforms.

Ending the game

1. Select your ending platform.
2. Add a Collision sensor. Set it to detect collisions with the Material of Bob.
3. Connect this sensor to a Scene actuator that Restarts the scene.
4. Test your game.

Game over delay

1. Select your ending platform.
2. Delete the Scene actuator that Restarts the game.
3. Replace it with a State actuator that sets the state to the one in the lower left-hand corner.
4. Reveal the State panel using the tiny plus sign next to the Add controller in the logic panel.
5. Select the state in the lower left-hand corner.
6. Add a Delay actuator, with a delay of 360 (3 seconds).
7. Connect the Delay actuator to a Scene actuator that will Restart the game.
8. Test your game.

Game Over overlay

1. Name the current scene Game by clicking inside the Scene drop-down at top.
2. Add a new scene with the plus sign, and name it Game Over overlay.
3. In this scene add a text object. Edit the text to say Game Over.
4. Convert the text to a mesh with the 3d view menu Object →Convert to →Mesh.
5. Add a material and colorize the text however you like. Edit the letters, scale them, go nuts. But leave it legible.
6. Add a camera.
7. Change the camera to an Orthographic camera with the Data buttons in the Properties panel.
8. Position the camera so you can see the text (use the Lock Camera to View checkbox.
9. Go back to the Game scene and select the final platform.
10. In the Initial state, where the platform has a Collision with Bob event, add a Scene actuator that will Add Overlay Scene with the Game Overlay scene selected.
11. In the other (lower-left) state, where the platform has a Delay sensor, add a Scene actuator that will Remove Scene with the Game Overlay scene selected.
12. Test the game.