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**LAB #6**

[ACTIVITY 1 2](#_Toc49109900)

[ACTIVITY 2 4](#_Toc49109901)

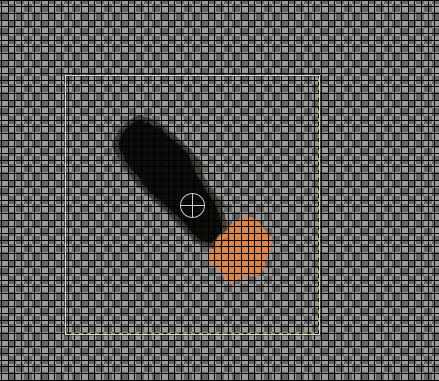
[ACTIVITY 3 6](#_Toc49109902)

# ACTIVITY 1

## DRAWING IN LAYERS

The most flexible and clever approach on character design is using layers. Each layer should represent one or more than one movable character parts. As an example, the head or the hands could be two different layers. This tutorial demonstrates how to draw a character using layers.

Follow the steps below:

1. Double – click on the GIMP shortcut on your desktop.
2. Click File 🡪 New…
3. Set the Width and Height to 1920 and set the Fill with option to Transparency.
4. Click Image 🡪 Configure Grid.
5. Set the Spacing to 40 for Vertical and Horizontal.
6. Click View 🡪 Show Grid.
7. Click File 🡪 Open as Layers.
8. Pick the Ninja image (make sure the Fill with is set to Transparency).
9. Click OK.
10. Name the new Layer Background.
11. Set the layers Opacity to around 40.
12. Right – Click over the layer panel 🡪 New Layer.
13. Name the new layer Torso Layer.
14. Draw a torso based on the Background level.
15. Hide the Torso layer clicking on the eye icon next to its name.
16. Repeat steps 12 – 15 but create layer for the head and name it Head Layer, for the right hand and name it Right Hand Layer and for the Right Foot and name it Right Foot Layer.
17. Hide all other layers and click on the Right Hand Layer.
18. Select the hand using the Rectangle Tool under the Toolbox.
19. Press Edit 🡪 Copy and then Edit Paste.
20. Click on the Flip Tool under the toolbox and select Horizontal.
21. Click on the Rotate Tool and move the Pivot point (the small cross at the top of the selection.
22. Rotate slightly the hand, as shown below:  
      
    
23. Click on the copied hand.
24. Under the Layers right – click on the new Floating Selection and click **To Layer**.
25. Name the new layer Left Hand Layer and move it right under the torso and head layers in the layers’ hierarchy.
26. Repeat steps 17 to 23, but select the Right Foot and name the new layer Left Foot Layer.
27. Place the Left Foot Layer at the bottom of the layers order.
28. Click on the Paintbrush and the Healing tool and fix and inconsistencies of the color.
29. Click File 🡪 Save As…
30. Save the project as CharacterTemplate.xcf.
31. Click File 🡪 Export As…
32. Export the file as Idle1.png.

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| **TASK 1.1:**  Upload the CharacterIdel1.png file and add it to the submission folder. |
| upload iconIn the LMS, add the file to the assignment Lab #6 submission folder. You can submit multiple files at a time. |

# ACTIVITY 2

## DESIGNING MULTIPLE SPRITES USING LAYERS

The next challenge is to draw different character stances for creating a more complete Sprite Sheet, with various stances. This tutorial demonstrates how to easily create these stances using GIMP, multiple layers and Transformations.

Follow the steps below:

1. Keep using the same CharacterTemplate project.
2. Select the Left Hand, set the pivot point to the top of the arm and move it, slightly, forward.
3. Select the Right Hand, set the pivot point to the top of the arm and move it, slightly, backwards.
4. Select the Left Foot, set the pivot point to the top and move it, slightly, backwards.
5. Select the Right Foot, set the pivot point to the top and move it, slightly, forward.
6. Select the torso and slightly rotate and move it, slightly forward.
7. Select the head and do the same.
8. Click File 🡪 Export as.
9. Name the image Idle2.
10. Move the hands and the feet at the opposite directions but almost at the same locations of the opposite body part and Export as Idle3.
11. Move all the body parts and the head on higher angles and design a walking stance.
12. Export as Walk1.
13. Move the body parts at the opposite direction and Export as Walk2.png.
14. Create an intermediate walking stance and Export as Walk3.png.
15. Move the body parts lower, keeping the same lower coordinates.
16. Rotate both hands backwards and bring the torso slightly forward.
17. Export as Jump1.png.
18. Set the character stance as shown below:  
      
    
19. Export as Jump2.png.
20. Gather all the images under three difference folders Walk for Walking, Idle for Idling and Jump for Jumping.

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| **TASK 2.1:**  Locate all images created as .jpg files and add them to the submission folder. |
| upload iconIn the LMS, add the file to the assignment Lab #6 submission folder. You can submit multiple files at a time. |

Advanced:

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| **TASK 2.2:**  Create the same stances but for the opposite facing (aka the character should face left), generate a .zip file containing them, and add it to the submission folder. |
| upload iconIn the LMS, add the file to the assignment Lab #6 submission folder. You can submit multiple files at a time. |

# ACTIVITY 3

## PACKING AND IMPORTING TO UNITY

After designing several stances, we need to pack them to a single Sprite Sheet. The obvious option is the Texture Packer application. Then, we import and slice them in the Unity Game Engine. This activity demonstrates how to create a Sprite Sheet from individual images, how to import them to Unity Editor, how to Slice them and how to create a basic game character.

Follow the steps below:

1. Double – click on the Texture Packer shortcut on the Desktop.
2. Click on the Add Sprites button.
3. Navigate to all the folders and select all the newly created sprites staring from the Idle.
4. Set the Data Format to JSON (Array), the Texture Format to PNG-32 and the max size to 8192x8192 (more if needed).
5. Name it **Ninja.png**.
6. Click Public Sprite Sheet.
7. Double – Click on the Unity Hub icon.
8. Create a new 2D project and name it **2DCharacterTutorial**.
9. When the Editor opens, under the Project, in the Assets folder, right – click 🡪 Create 🡪 Folder.
10. Name the new folder Character.
11. Drag and drop the Ninja.png spritesheet in the Character folder.
12. Click on the Ninja asset and under the inspector select:
    1. Texture Type: Sprite (2D and UI).
    2. Sprite Mode: Multiple.
    3. Filter Mode: No Filter.
13. Click Apply.
14. Click Sprite Editor.
15. In the Sprite Editor click Slice 🡪 Automatic.
16. Click Slice.
17. Select the difference sliced sprites and name them according to their stance e.g. Walk1, Walk2 etc…
18. Drag and Drop one of the images in the Hierarchy.
19. Rename it Character.

Once you complete the previous steps:

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| **TASK 3.1:**  Draw a right leg, duplicate, flip it and attach it to the body, then draw a head following a perspective shape, hide all the layer but the top, export as PerspectiveCharacter.png and and add it to the submission folder. |
| upload iconIn the LMS, add the file to the assignment Lab #6 submission folder. You can submit multiple files at a time. |

FINAL STEP: Save this document as a PDF. Upload the PDF to the Lab #6 submission folder.