

A dense, repeating pattern of white icons on a light gray background. The icons represent various fields: technology (laptops, smartphones, routers, headphones), education (graduation caps, books, lightbulbs), music (musical notes, pianos), and general creativity (cameras, microscopes, tools).

Geek Squad Academy

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GEEK SQUAD ACADEMY GAME DEVELOPMENT WITH GODOT ONLINE GUIDE

Welcome to Game Development with Godot!

For best results, be sure to read the full guide first before you get to work!

Godot is a free, open-source game engine that allows users to create games from scratch! This course was created to introduce some of the basic tools of Godot, understand how games can be made, and allow some time to create a game. Experimentation is key - take the chance to discover, change things, and make mistakes! This is going to be awesome!

WHAT YOU'LL LEARN:

- How to use the basic tools of Godot to build a video game
- How to write some basic video game code
- How to create web objects that interact
- How to include constants in your code

MATERIALS NEEDED:

- ☐ Computer (Windows, OSX)
- ☐ Internet access
- ☐ Godot software (free download)

MODULE 1: INTRO TO GODOT

What do you think it takes to build a video game? From the creation of an idea or concept, to writing a storyline, programming the game, and testing it, making a “professional” game that you’d buy in a store can be quite the process!

Luckily for us, it can be easy – and fun – to code your own video game! We’ll be using a game creation software called Godot...let’s look at some of its tools and functionality.

Want a little help with this Guide? Use the step-by-step video tutorial:

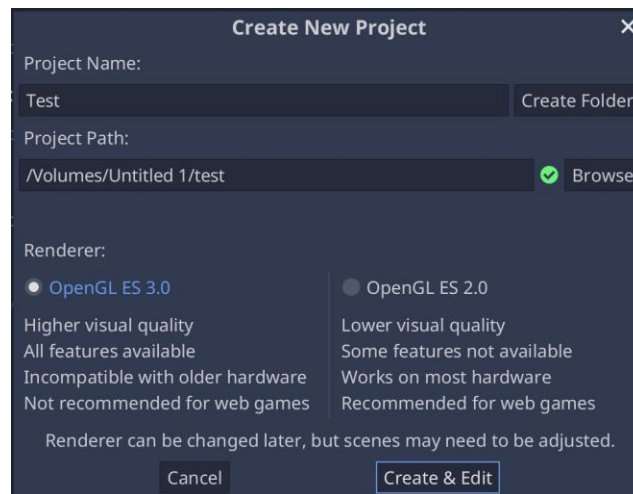
<https://youtu.be/1xpj8HpyKXc>

LET’S GET STARTED

First, you’ll need to download Godot from: **www.godotengine.org/download**.

Then it’s time to launch Godot!

1. Create a “New Project”.
2. Select the default OpenGL ES 3.0 renderer (see PRO TIP below).
3. Save the project in a new folder (it will not save unless it’s a new folder).
4. Click “Create and Edit”.



PRO TIP:

- Some older machines will not work on the OpenGL3.0 due to graphics issues. When in doubt, open in GL ES 2.0! The code will still work either way.

FIRST LOOK AT GODOT

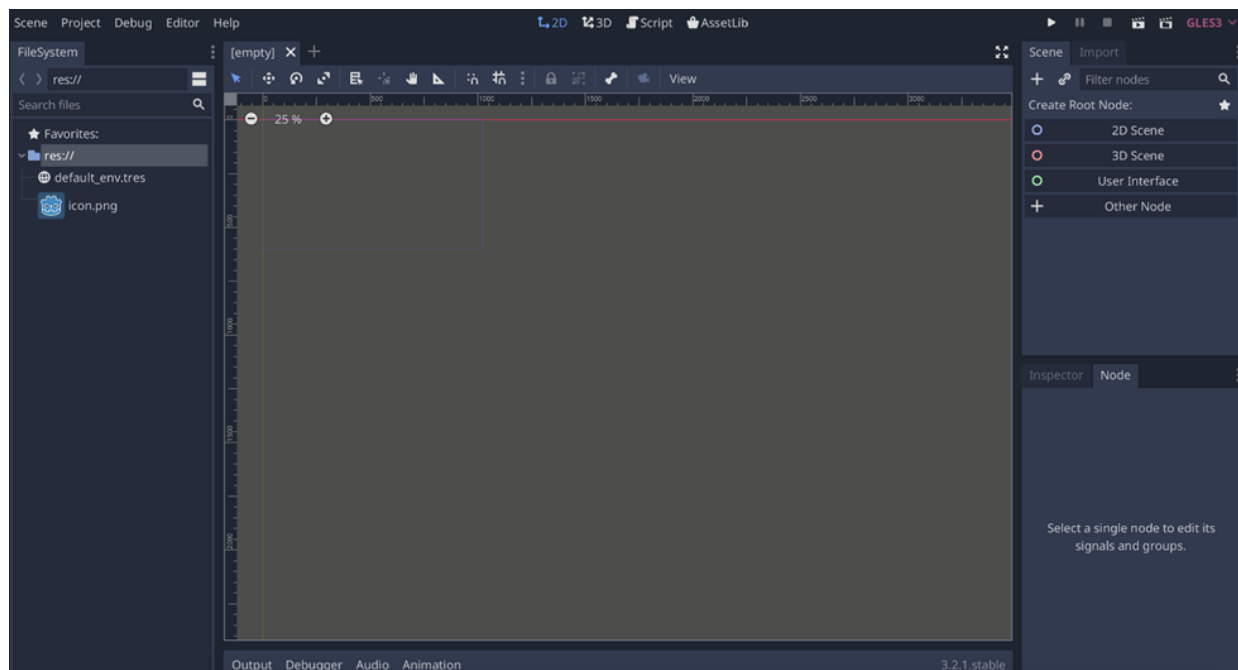
We'll be creating a game in 2D. Side scroller games are created in 2D – think Super Mario Brothers, Pac-Man, or Donkey Kong!

First, let's become familiar with where all the widgets are located.

- FileSystem (where you import items to your game)
- Canvas (your workspace)
- Scene (where we make sections of the world, via “nodes”)
- Inspector (where you can edit your nodes)

RECOMMENDED: Let's change the layout

- If you want to change the locations of any of your widgets, click on the three dots and move them around.
- Once you've settled on a layout that you like, save it by going to Editor > Editor Layout > Save Layout > Save: Save as Default. This will overwrite the existing default.
- We will be using the following Layout throughout the guide and video:
 - File System: Upper Left
 - Scene & Import: Upper Right
 - Inspector & Node: Lower Right

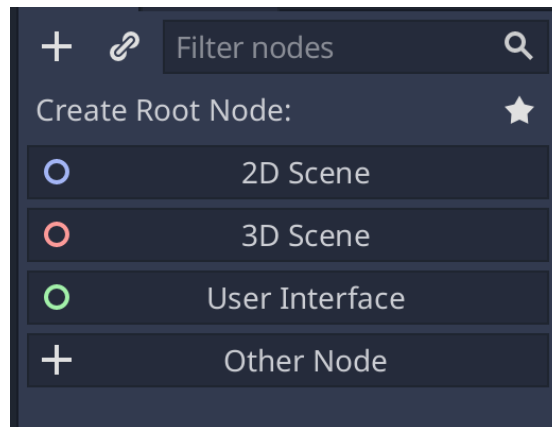


2D NODE

Nodes are the basic building blocks for creating games in Godot. A node is an object that does a special game function, such as displaying graphics, or playing an animation.

So...let's add our first node!

1. On the Scene widget, select the “2D Scene” node. This is what all other things will build from.
2. Double click on the 2D Scene node, and rename it “World” (because that's where all of our items will live).



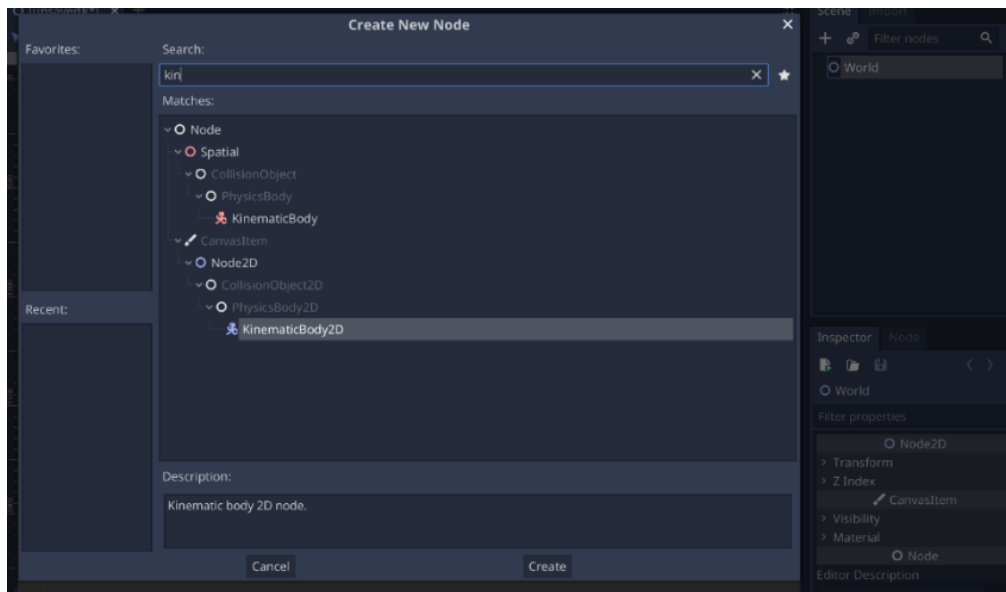
PRO TIP:

- What's a “widget”? A widget is a bit of self-contained code that displays a program, or a piece of a program. When we refer to a widget in this guide, we mean a section of the screen that contains all the settings for one feature. For example: FileSystem, Inspector, or Scene are widgets.
- There are different types of nodes. 2D Scene is a root node. Parent and child nodes become nested within the root node, which you'll start to see as you create your game.

KINEMATICBODY2D

This is what enables us to write code and apply our physics engine – also known as gravity!

1. Locate the Scene widget.
2. Click the “+” in the top left corner of the widget.
3. Search for “KinematicBody2D”.
4. Click “Create”.

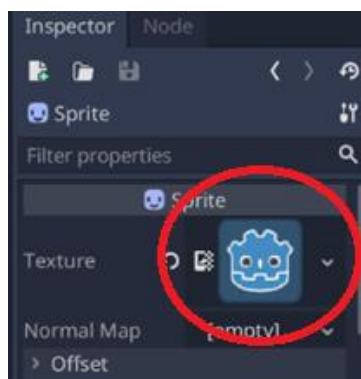
**PRO TIP:**

- If you ever make a mistake in Godot, you can always undo by pressing CTRL+Z

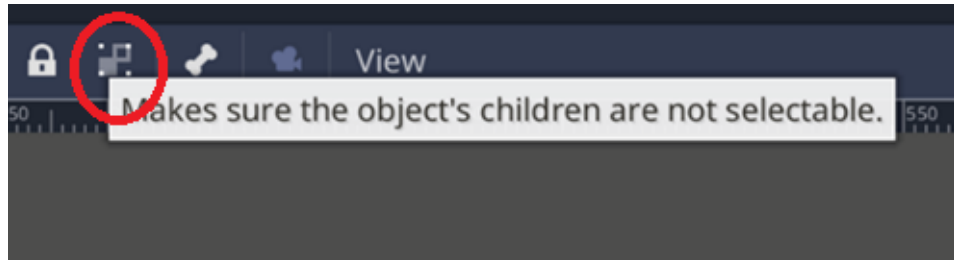
SPRITE

A Sprite is the graphical part of the world. It allows you to upload a picture to be in the game. Let's add one!

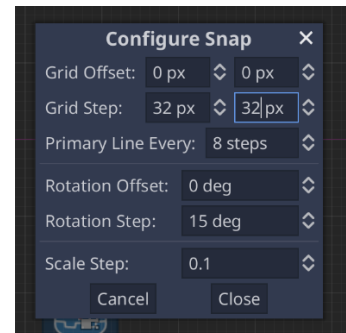
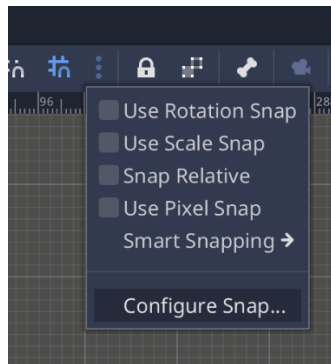
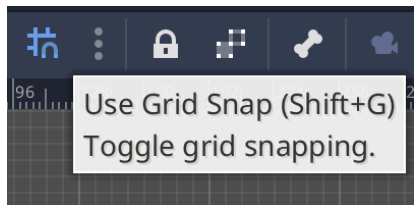
1. In the Scene widget, click the "+" in the top left corner.
2. Search for "Sprite". Once created, it should be the "child" of the KinematicBody2D parent node. (In other words, it will be listed under KinematicBody2D).
3. Look at the "Inspector" widget. The Inspector lists all the settings of a Node.
4. Go to the FileSystem widget. Drag and drop the "icon.png" into the "[empty]" space to the right of "Texture" in the "Inspector" widget. The monster should appear on the canvas.



5. Link the nodes together. This means that the two nodes act as one. On the toolbar of the Canvas, click on the symbol that looks like two boxes (located between the lock and the bone).



6. Just a few buttons away on the toolbar is the snap feature. This makes the editing space snap to a grid. After we turn on the snap, click on the three vertical dots to configure the snap to 32px x 32px (px = pixels).



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7. Move the little monster (your player) to the lower right quadrant of the grid (this is where our game world will be). If you see a faint purple line, you are in the right area.
8. Save your progress! (Ctrl+S) or in the menu, Scene > Save Scene.
9. Name your file "World".

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