Introduction to Godot

# Learning Intentions

* To be able to create and save a **new scene** in Godot.
* To be able to **attach a script** and enter code correctly.
* To be able to **run** a scene and check the **output**.
* To be able to **add a child node** and position it in the scene.
* To be able to **connect a signal** to a script.

# Setup

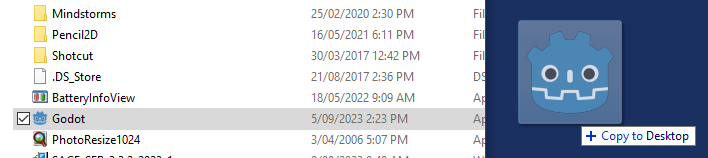
How to create a **project** that will contain all of your scenes:

1. Open the Student Drive and go into the Programs folder:

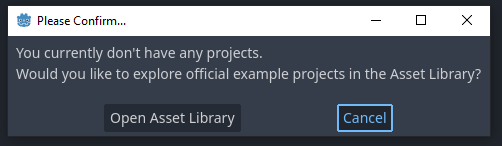
A screenshot of a computer

Description automatically generated

1. Copy the file onto your desktop:



1. Close the Programs folder and run Godot from your desktop. Click Cancel in the popup.



1. Click , then click , then click 
2. You have finished creating a project!

# Exercise 1: Print

1. Since you have just created a new project, you are looking at an empty scene.

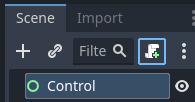
Click  to give the scene a **User Interface** root node.

1. Press Ctrl and S together to save the scene. Call it **Exercise1.tscn**

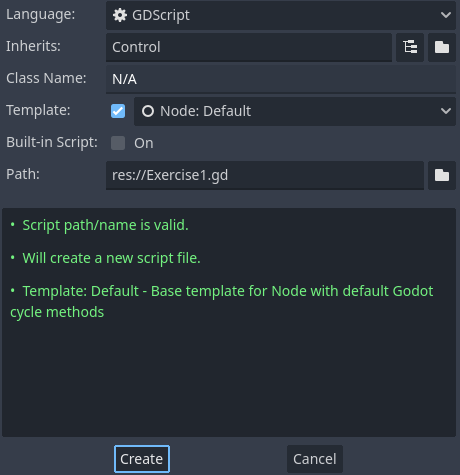
A screen shot of a computer

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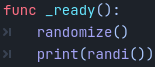
1. Attach a new script to the **Control** node by clicking the  button.



1. Click Create to finish creating the new script.



1. Under func \_ready():, delete the word pass and change the code to this:



The  is a tab space (use the Tab key on the left of the keyboard, **not** the spacebar).

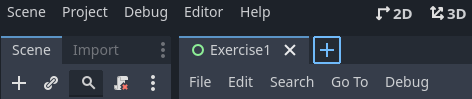
1. Run the scene  (top right), a random number will appear in the Output box at the bottom of Godot (ignore/close the grey window that appears, that’s only for games with images).

A screenshot of a computer

Description automatically generated

# Exercise 2: Variables

1. Click the + next to  to create a new scene.



1. Click  to give the scene a **User Interface** root node.
2. Press Ctrl and S together to save the scene. Call it **Exercise2.tscn**

A screen shot of a computer

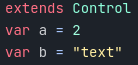
Description automatically generated

1. Attach a new script to the **Control** node by clicking the  button, then click Create.

A screenshot of a computer menu

Description automatically generated

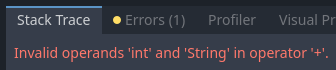
1. Near the top of the code, under extends Control, add the following two lines:



1. Under func \_ready():, delete the word pass and instead enter this line:



1. Run the scene , an error should say this message:



This is because you can’t add a number (int) to a word (string).

1. Try making a and b both numbers or both strings by changing the code at the top of the script, and run the scene  again. The result should appear in the Output box.

# Exercise 3: Signals

1. Create a new scene, choose , and save the scene as **Exercise3.tscn**
2. Switch to 2D view using the button at the top of the window:

A screenshot of a computer

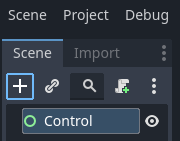
Description automatically generated

1. Click the padlock at the top of the viewport to lock the Control node.

A screenshot of a computer

Description automatically generated

1. Attach a new script  to the Control node, save it as **Exercise3.gd**.
2. Click the + on the left of side of the window to add a new node.



1. Search for **TextEdit** and click Create. Then use the orange handles to move and resize it.

A black rectangle with colorful dots and a cross

Description automatically generated

1. Open the **Node** tab in the right top corner of the window:

A screenshot of a computer

Description automatically generated

1. Right-click **text\_changed()** and choose Connect, then click Connect.

A screen shot of a computer

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1. At the bottom of the code that appears, delete the word pass and instead enter this code:



1. Run the scene , click in the dark grey area and then type something. Text should appear in the Output box.

# Exercise 4: Conditionals

1. Create a new scene, choose **User Interface** root node, and save it as **Exercise4.tscn**.
2. In 2D view, click the padlock (at the top of the Viewport) to lock the Control node.
3. Attach a new script  to the Control node, save it as **Exercise4.gd**.
4. Add a **TextEdit** node as a child of Control, then position and resize it.

A black rectangle with orange and pink circles

Description automatically generated

1. Right-click on the **Control** node and choose + Add Child NodeA screen shot of a computer

   Description automatically generated
2. Search for **Label** and click Create, then resize and position it above the textedit object:

A screenshot of a video game

Description automatically generated

1. In the **Inspector** on the right of the screen, set text to What kind of animal is a chameleon?

A screenshot of a computer

Description automatically generated

1. Add a **Button** node as a child of Control, and position it under the textedit object.

A black rectangular object with red dots

Description automatically generated

1. Open the Node tab on the right top of the screen and connect the **pressed()** signal.

A screen shot of a computer

Description automatically generated

1. At the bottom of the code that appears, delete the word pass and instead enter this code:

A screen shot of a computer code

Description automatically generated

1. Run the scene , type in the dark grey area and click the button, look in the Output box to see the result.

# Reflection: Do I know how to…

* create and save a **new scene** in Godot?
* **attach a script** and enter code correctly?
* **run** a scene and check the **output**?
* **add a child node** and position it in the scene?
* **connect a signal** to a script?

# Challenge: Make a “Guess the number” game

Make a game where the computer secretly chooses a number and the player tries to guess it. If the player guesses too high, the programs should print “Too high!” and if the player guesses too low the program should print “Too low!” If the player guesses the number, print “Correct!”

*Hints:*

* Create the random number by putting this line in the code:   
  
* In your “if” check, you can’t compare words with numbers so you’ll need to convert the words to numbers using “int” like this:

