



# A Short Dive Into Game ~~Tinkering~~ Programming

Christian Scharr

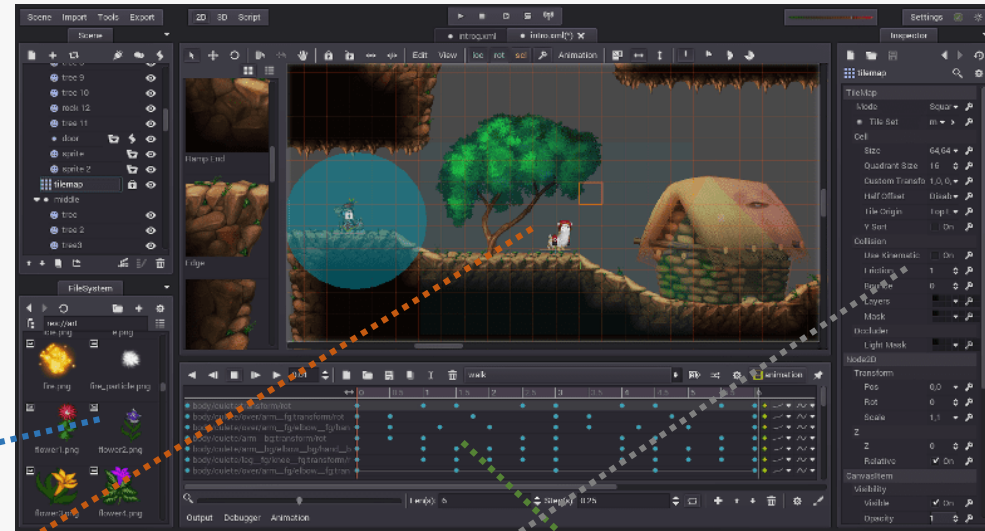
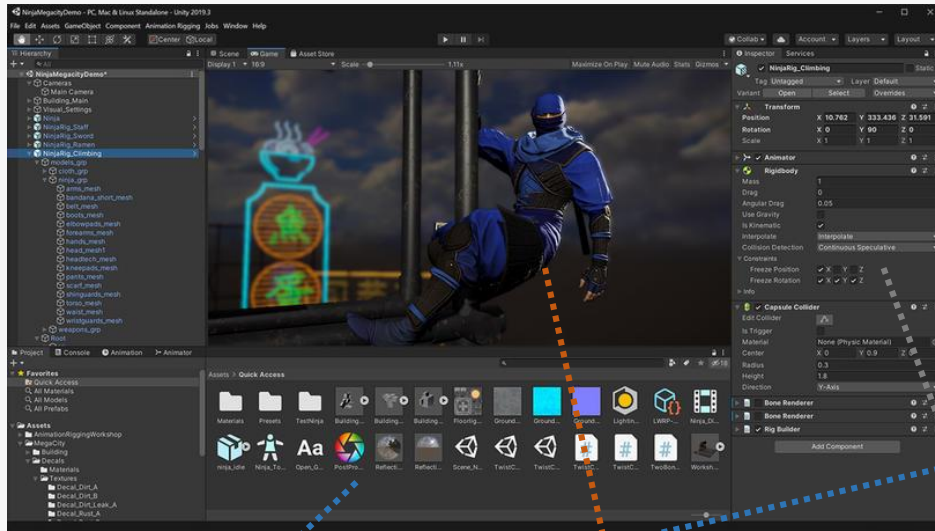
«Alcor Code Renovation» Cohort 5

Community Of Practice

# Indie Game Development Team



# Development Tools



pretty picture gallery

cinema screen  
With game preview

Fancy animation  
timeline cutting thingy

a whole universe of  
toggles, sliders,  
dropdowns, inputs, ...



# Finally... The sourcecode (of hell)

```
public class GBuild : MonoBehaviour
{
    public static GBuild INSTANCE;

    private static Dictionary<string, TileBase> bs = new Dictionary<string, TileBase>();

    public GridLayout gl;
    public Tilemap mainT;
    public Tilemap assT;

    private Building cb;
    private Vector3 pp;

    private void Awake()
    {
        INSTANCE = this;
    }

    private void Start()
    {
        string p = @"Tiles\";
        tileBases.Add(0, null);
        tileBases.Add(1, Resources.Load<TileBase>(p + "Avbl"));
        tileBases.Add(2, Resources.Load<TileBase>(p + "Bl"));
        tileBases.Add(3, Resources.Load<TileBase>(p + "Ok"));
    }

    private void Update()
    {
        if (!cb)
        {
            return;
        }

        if (Input.GetMouseButtonDown(0))
        {
            if (EventSystem.current.IsPointerOverGameObject(0))
            {
                return;
            }

            if (!cb.Placed)
            {
                Vector2 tp = Camera.main.ScreenToWorldPoint(Input.mousePosition);
                Vector3Int cp = gridLayout.LocalToCell(tp);

                if (pp != cp)
                {
                    cb.transform.localPosition = gridLayout.CellToLocalInterpolated(cp
                        + new Vector3(.5f, .5f, 0f));
                    pp = cp;
                }
            }
        }
    }
}
```





# Powered by Alcor...

```
public class GridBuildingSystem : MonoBehaviour
{
    public static GridBuildingSystem INSTANCE;

    private static Dictionary<TileType, TileBase> tileBases = new Dictionary<TileType, TileBase>();

    public GridLayout gridLayout;
    public Tilemap mainTilemap;
    public Tilemap assistantTilemap;

    private Building currentBuilding;
    private Vector3 previousPosition;

    #region Unity Methods

    private void Awake()
    {
        INSTANCE = this;
    }

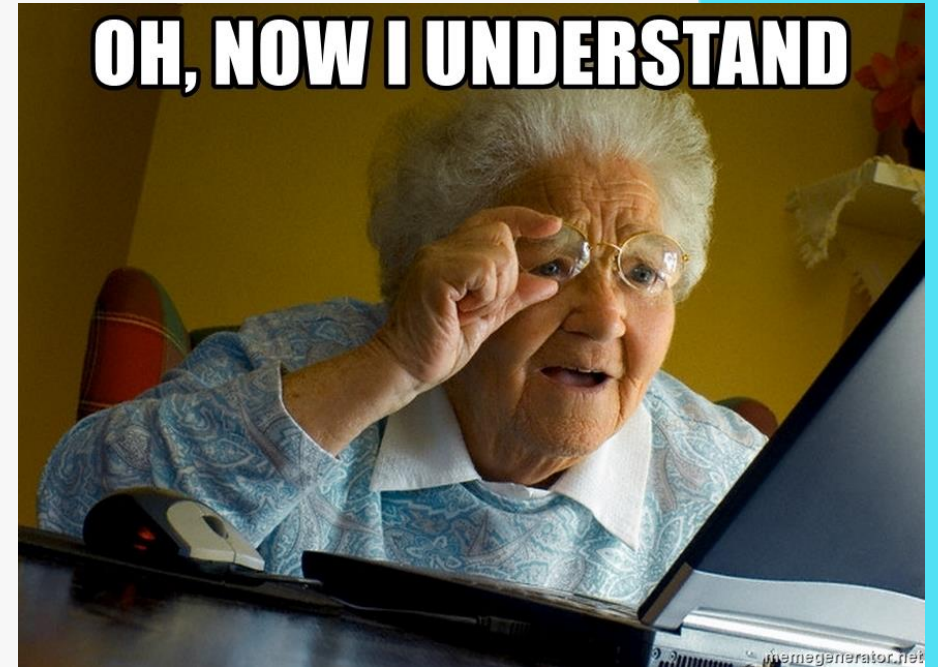
    private void Start()
    {
        string tilePath = @"Tiles\";
        tileBases.Add(TileType.EMPTY, null);
        tileBases.Add(TileType.AVAILABLE, Resources.Load<TileBase>(tilePath + "FieldAvailable"));
        tileBases.Add(TileType.BLOCKED, Resources.Load<TileBase>(tilePath + "FieldBlocked"));
        tileBases.Add(TileType.OKAY, Resources.Load<TileBase>(tilePath + "FieldOkay"));
    }

    private void Update()
    {
        if (!currentBuilding)
        {
            return;
        }

        if (Input.GetMouseButtonDown(0))
        {
            if (EventSystem.current.IsPointerOverGameObject(0))
            {
                return;
            }

            if (!currentBuilding.Placed)
            {
                Vector2 touchPosition = Camera.main.ScreenToWorldPoint(Input.mousePosition);
                Vector3Int cellPosition = gridLayout.LocalToCell(touchPosition);

                if (previousPosition != cellPosition)
                {
                    currentBuilding.transform.localPosition = gridLayout.CellToLocalInterpolated(
                        cellPosition + new Vector3(.5f, .5f, 0f));
                    previousPosition = cellPosition;
                }
            }
        }
    }
}
```



# Funny Facts

(from the not so funny professional game making industry)

- Video-game market: \$175B (2021)
  - global education market: \$24.8B (2020)
- Minecraft is the Best-Selling Game Ever
- Unity Engine first released in 2005
  - market share: 45% (statista.com)
    - closest competitor: Unreal Engine with 17%
  - Unity Testing Framework introduced in mid-2019



# Wanna Give It A Try?

- Engine (beginner friendly)
  - Unity Engine (C#)
  - Godot Engine (GDScript / C# / C++)
- Programming IDE
  - Visual Studio Code
  - JetBrains Rider (C#) / JetBrains Clion (C++)
- Assets
  - kenney.nl (sprites, 3D models, sound effects, ...)
  - freesound.org (sound effects)
  - luckylionstudios.com (game music)
- Practice & Network
  - itch.io/jams
  - ldjam.com (Ludum Dare - Make A Game in A Weekend)

