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Object-oriented Modelling and Programming in Engineering

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Description: I have created in total 4 files:

1. **GameOfLifeLogic:**
    - **Responsibility:** Implements Conway's Game of Life rules, including the logic for counting live neighbors.
    - **Key Functions:**
        - **UpdateCells(cells: Cell[,]): void**: Applies Conway's rules to update the state of each cell based on its neighbors.
        - **CountLiveNeighbors(cells: Cell[,], x: int, y: int): int**: Counts the number of live neighbors for a given cell.
2. **GameOfLifeManager:**
    - **Responsibility:** Manages the overall game environment and patterns.
    - **Key Functions:**
        - **CreateGrid(): void**: Generates a grid of cells.
        - **InitializePattern1(): void**: Sets up the initial state based on Pattern 1.
        - **InitializePattern2(): void**: Sets up the initial state based on Pattern 2.
        - **InitializePattern3(): void**: Sets up the initial state based on Pattern 3.
        - **UpdateGame(): void**: Updates the game state, applying rules from **GameOfLifeLogic**.
        - Additional functions for managing game parameters.
3. **Cell:**
    - **Responsibility:** Represents an individual cell in the grid and handles its state and visuals.
    - **Key Functions:**
        - **UpdateCellVisuals(): void**: Updates the visuals of the cell based on its state.
        - Additional functions for initializing cell properties.
4. **Generating Text**

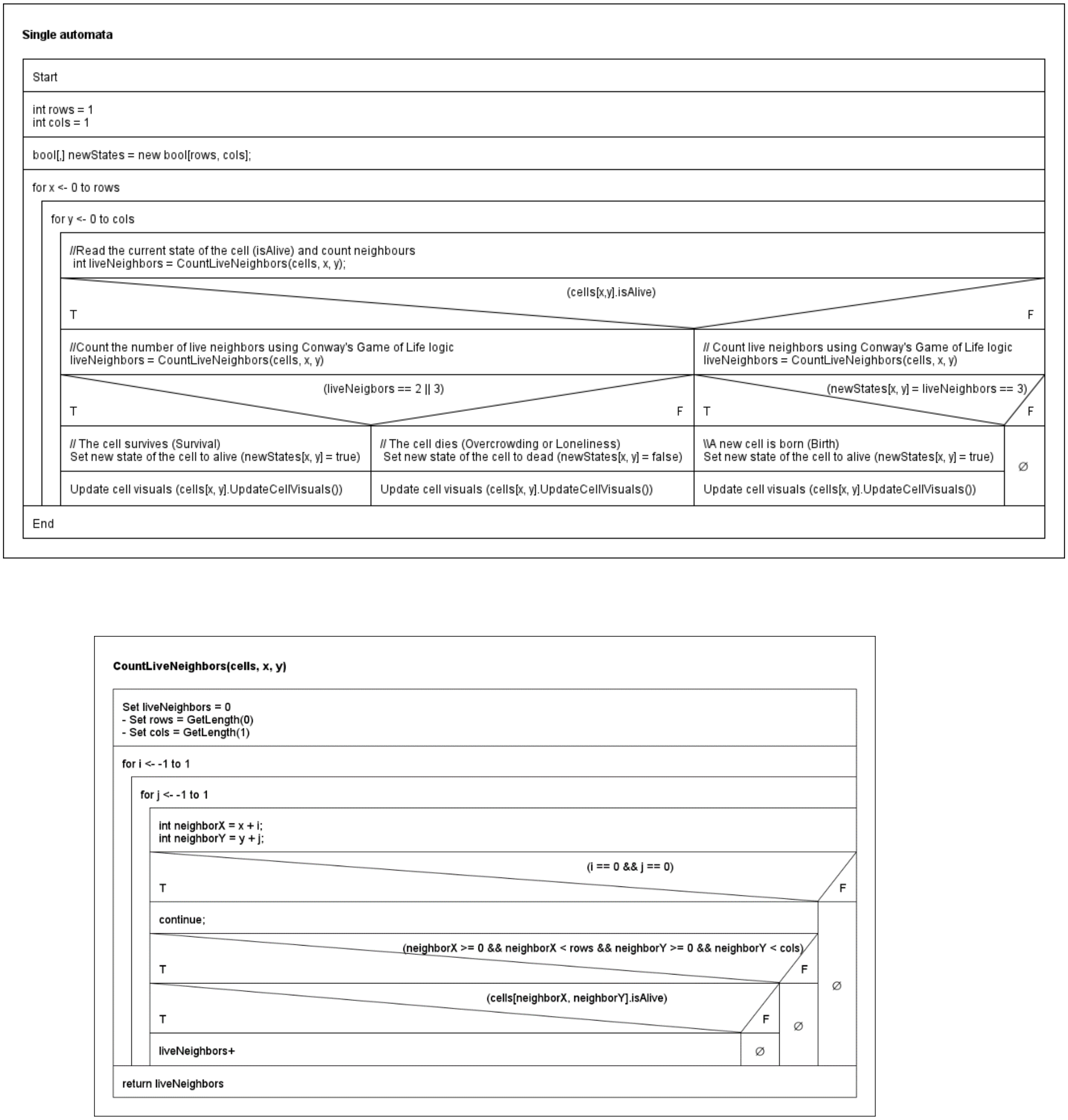


Figure 1: Graph to represent the behavior of a single automat via Nassi-Shneiderman

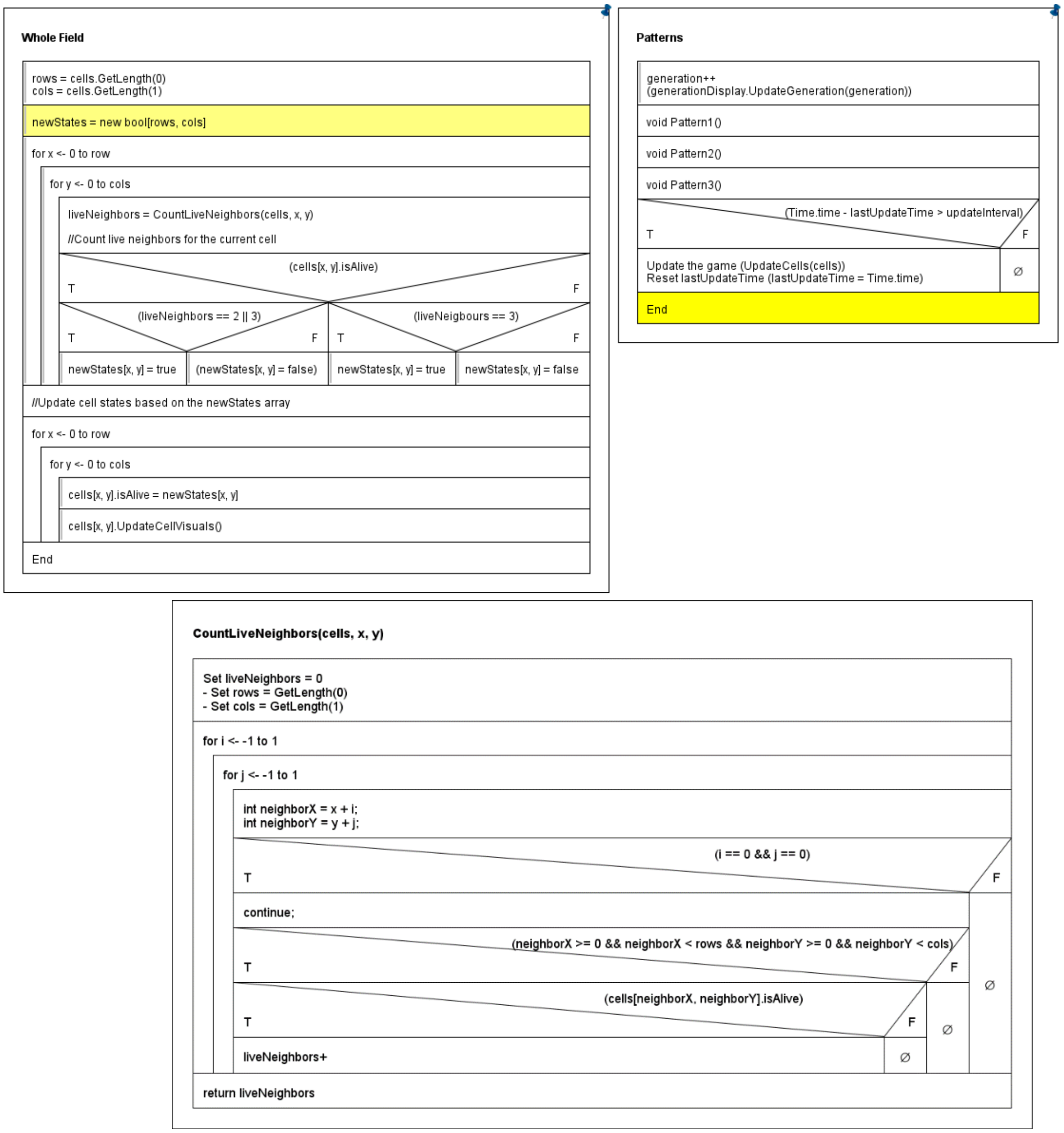


Figure 2: Nassi-Shneiderman diagram for the calculation of the whole field

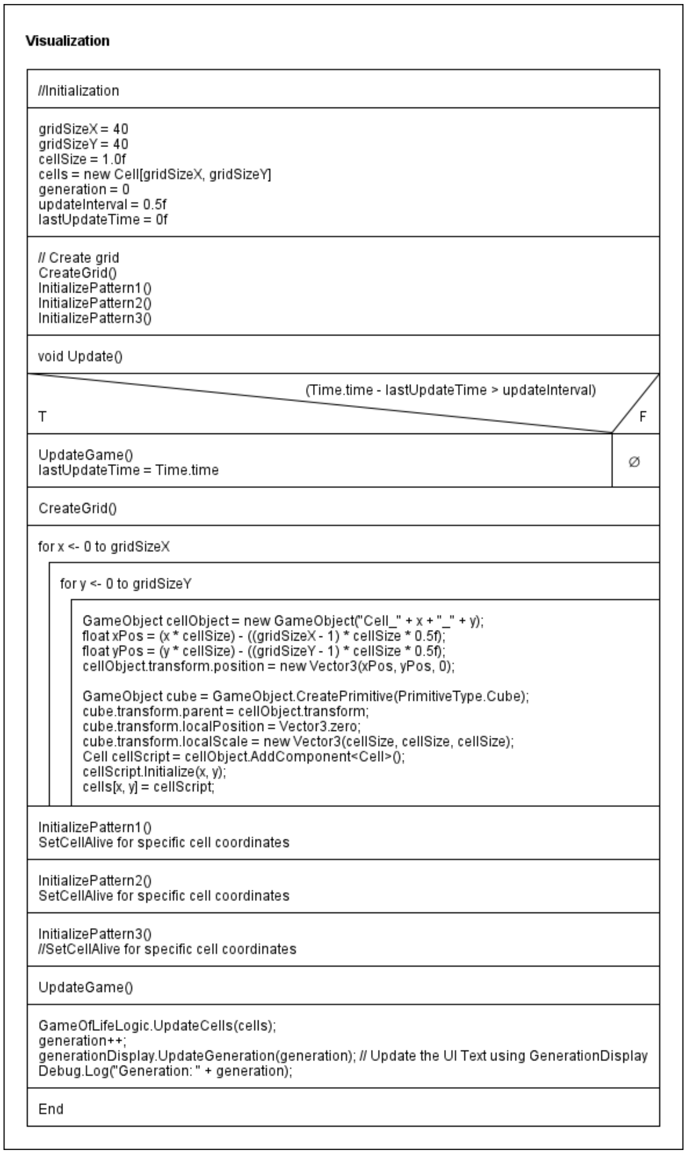


Figure 3: Nassi-Shneiderman diagram for the visualization of the field

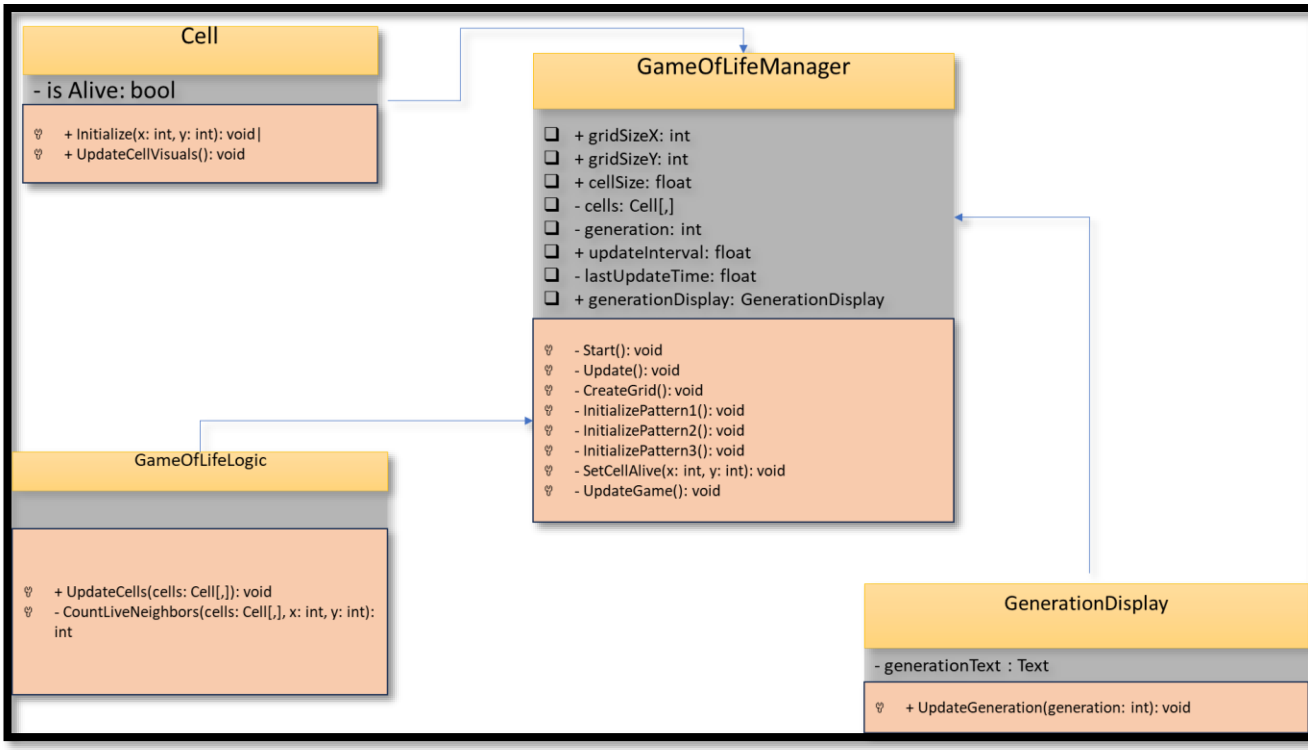
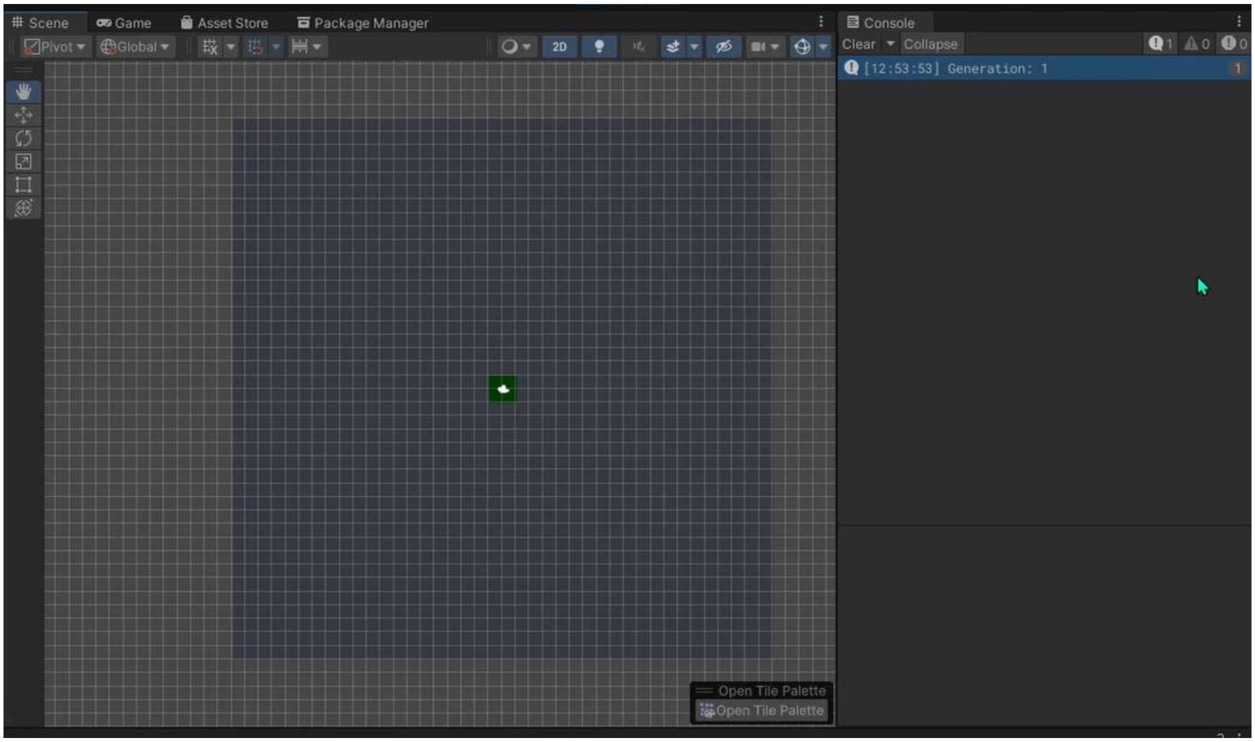


Figure 4: Class diagrams for the implemented classes

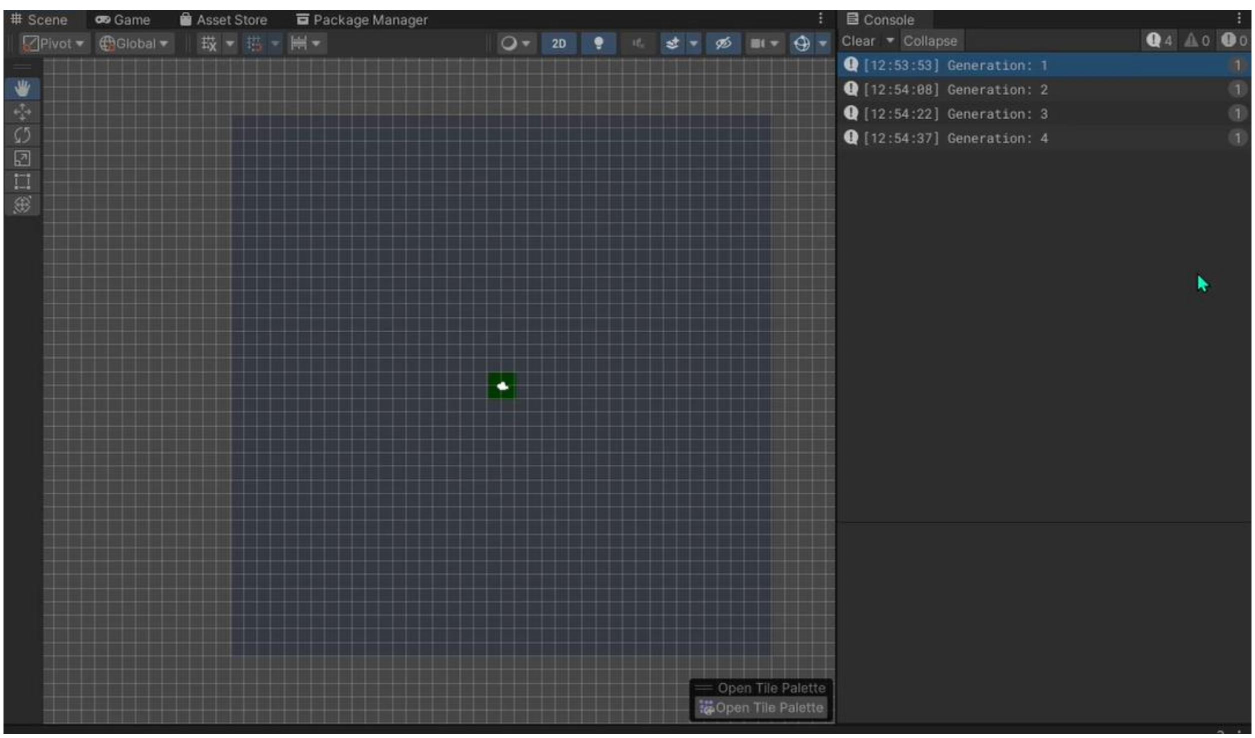
Screenshots of the evolution results

Pattern 1:

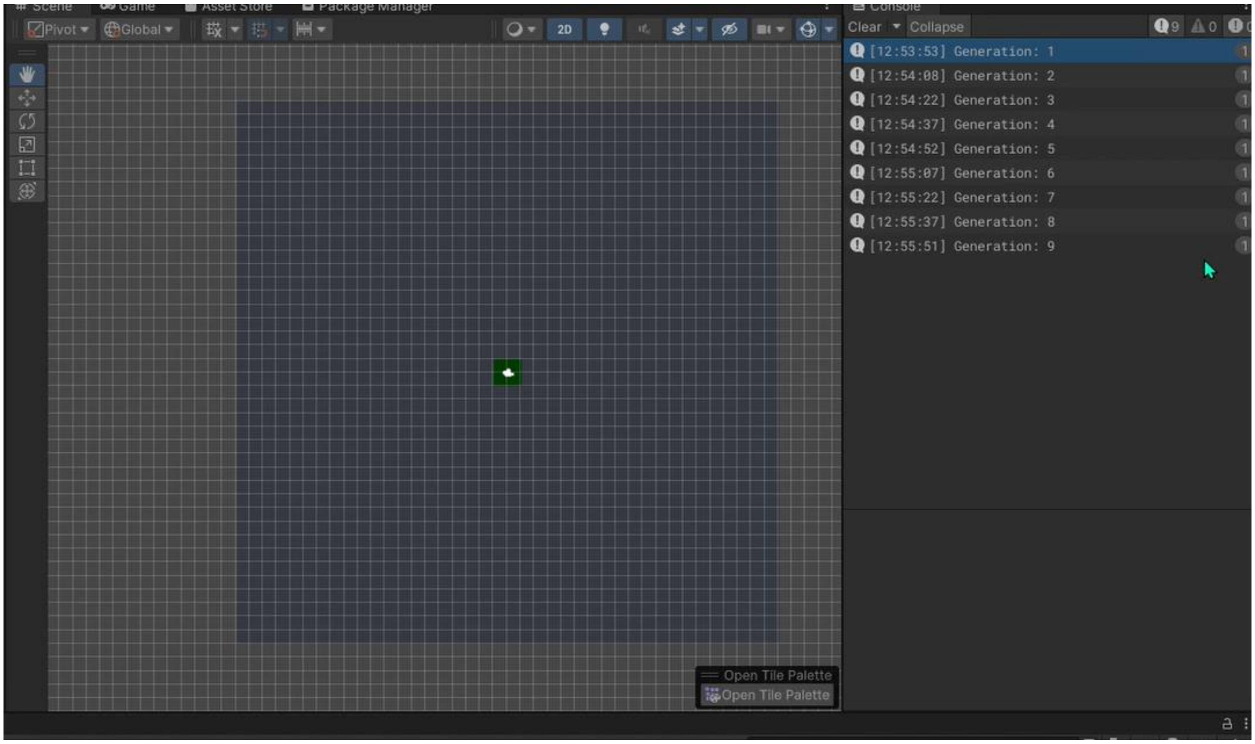
At the 1st generation (Initial)



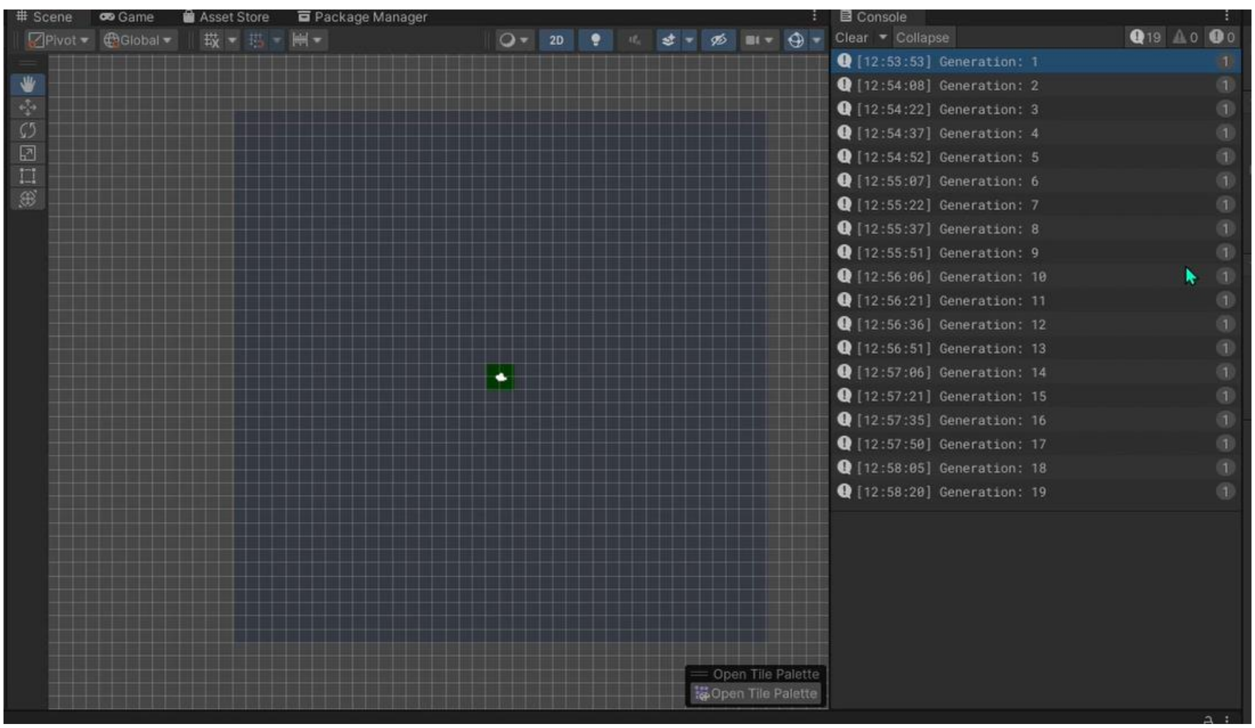
At the 5th generation



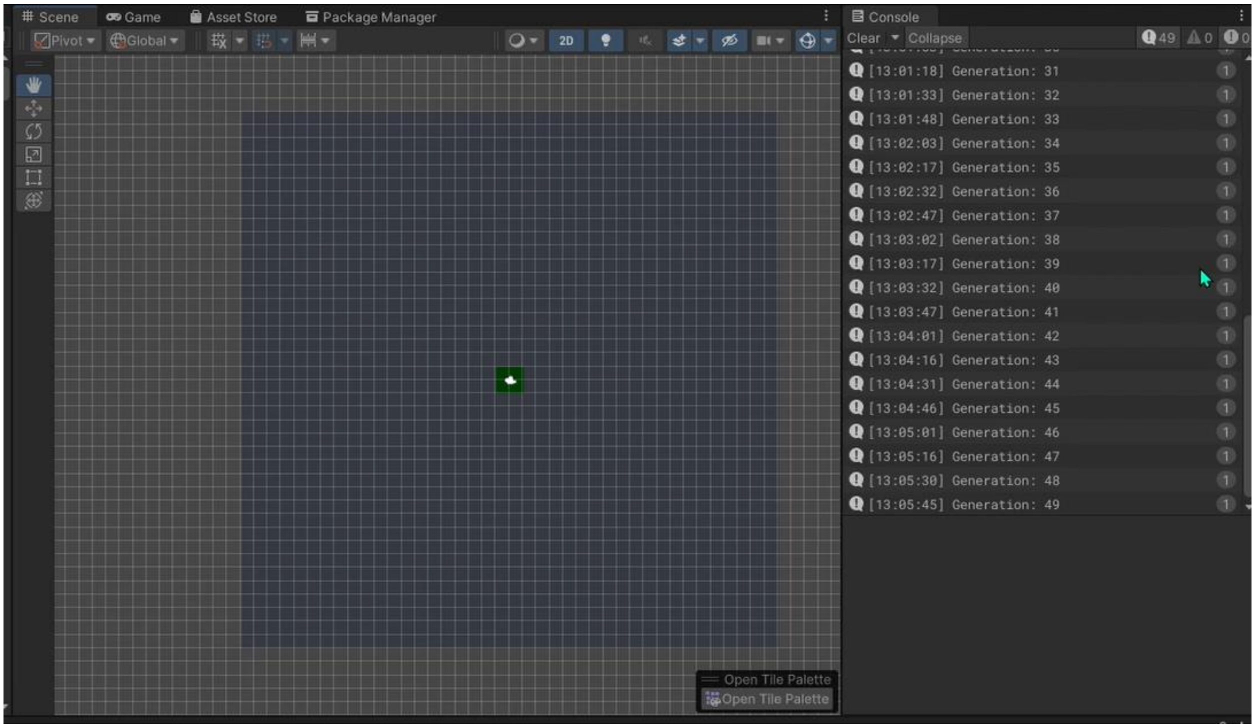
At the 10th generation



At the 20th generation

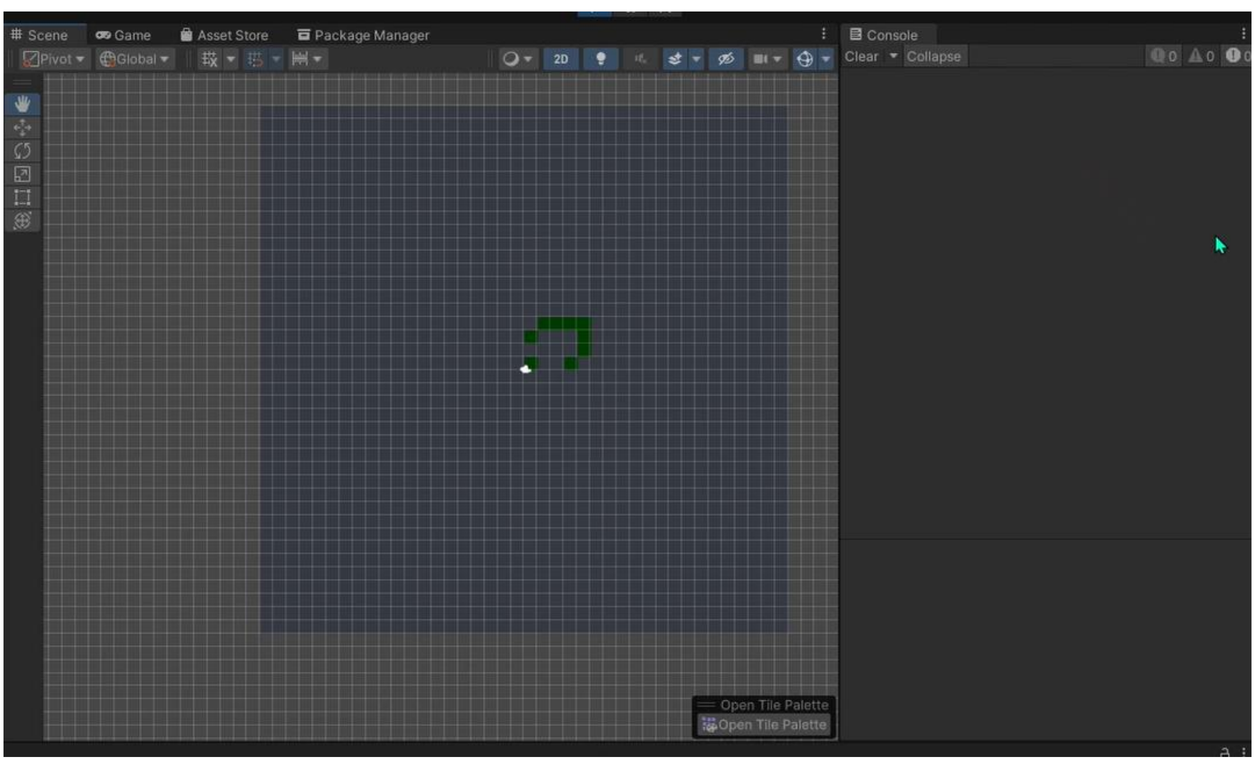


At the 50th generation

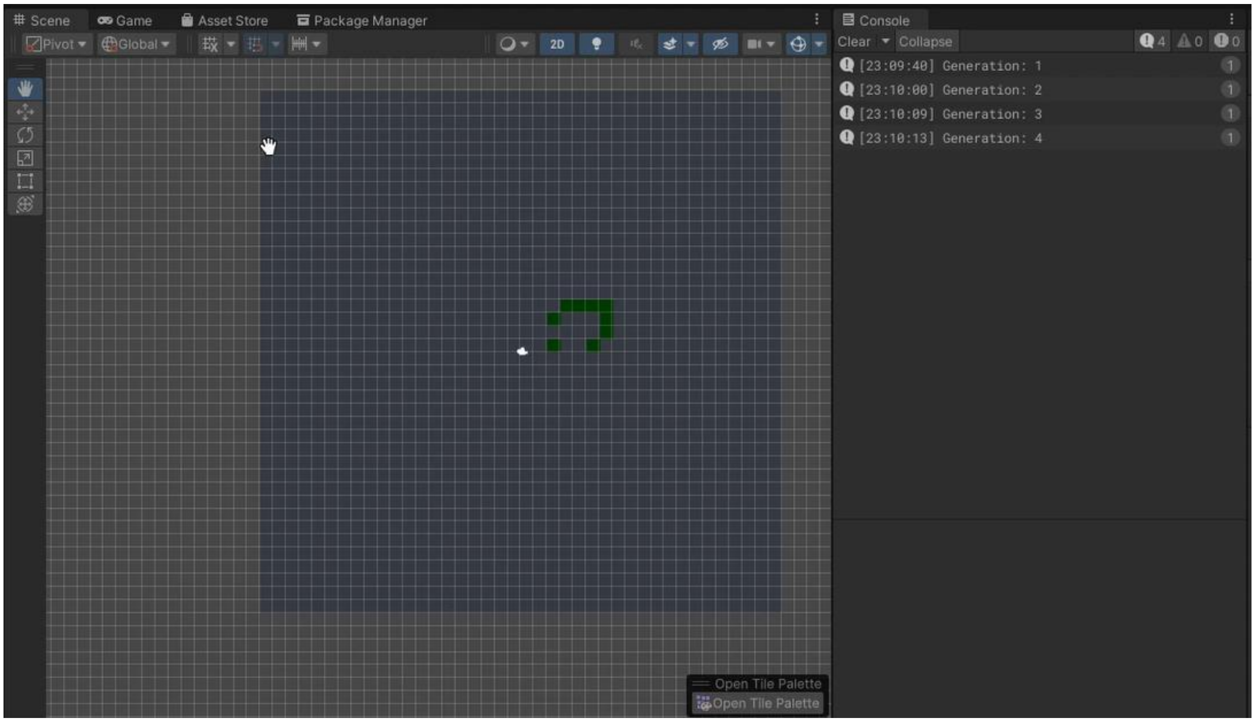


Pattern 2:

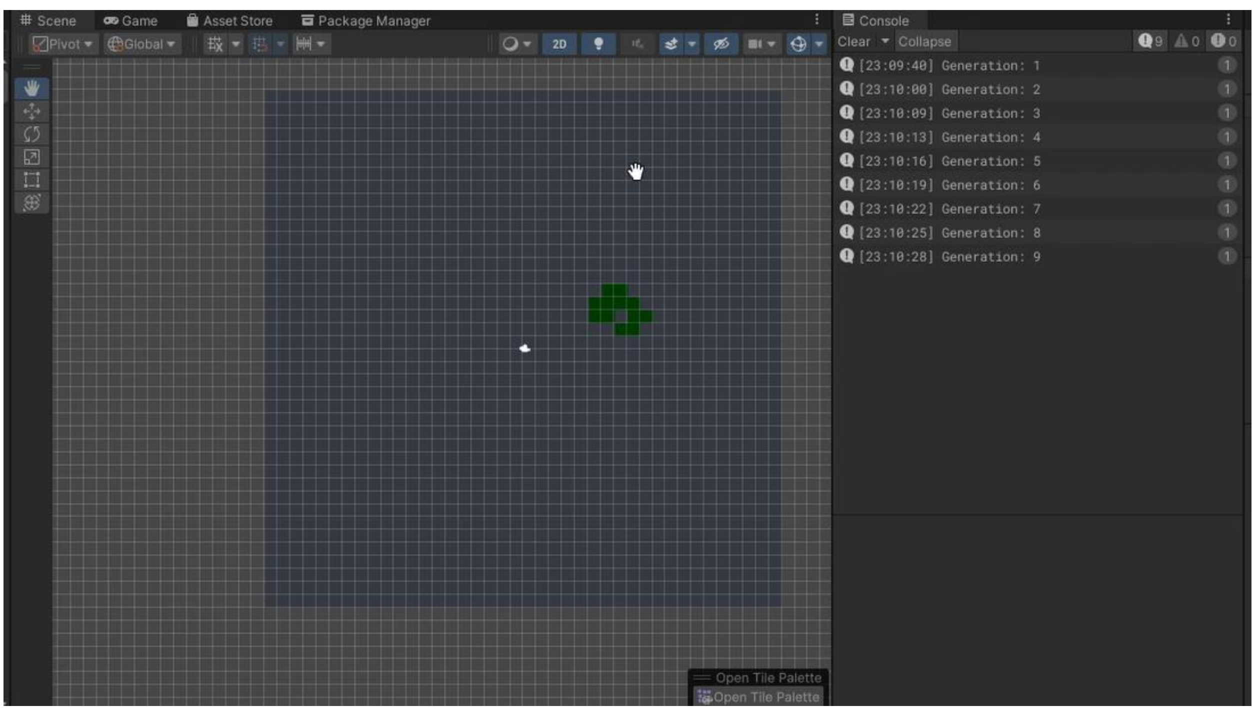
At the 1st generation (Initial)



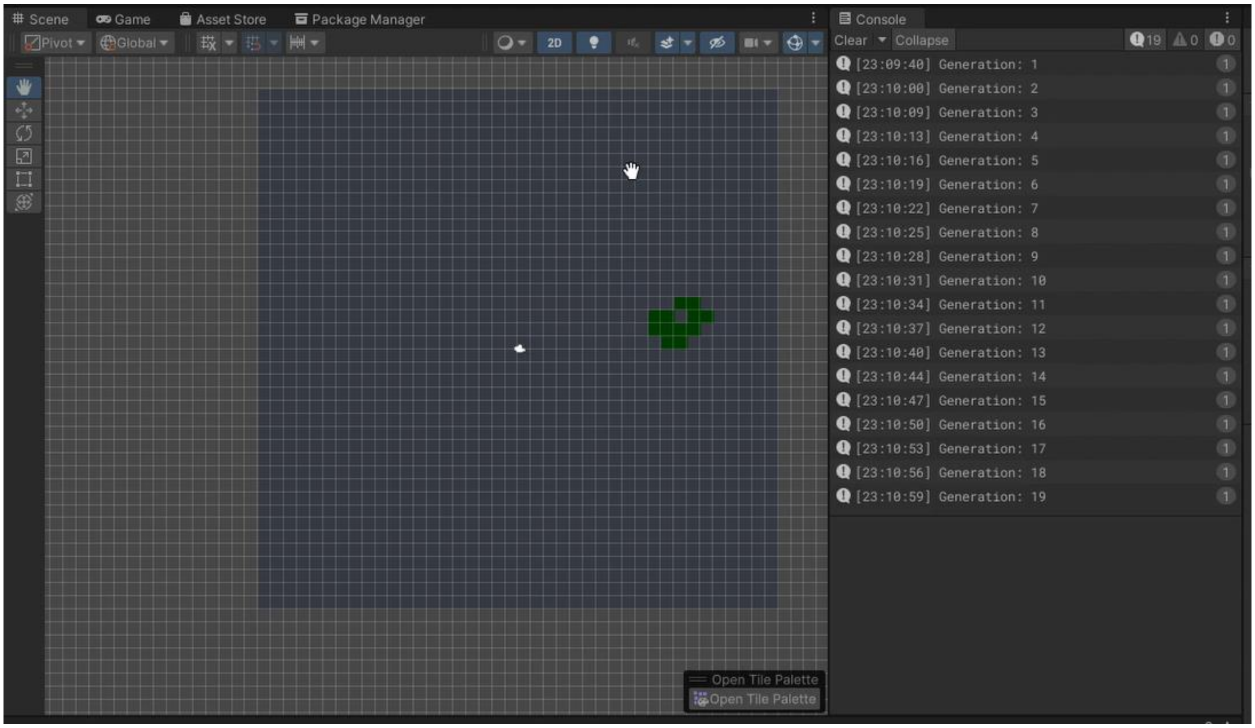
At the 5th generation



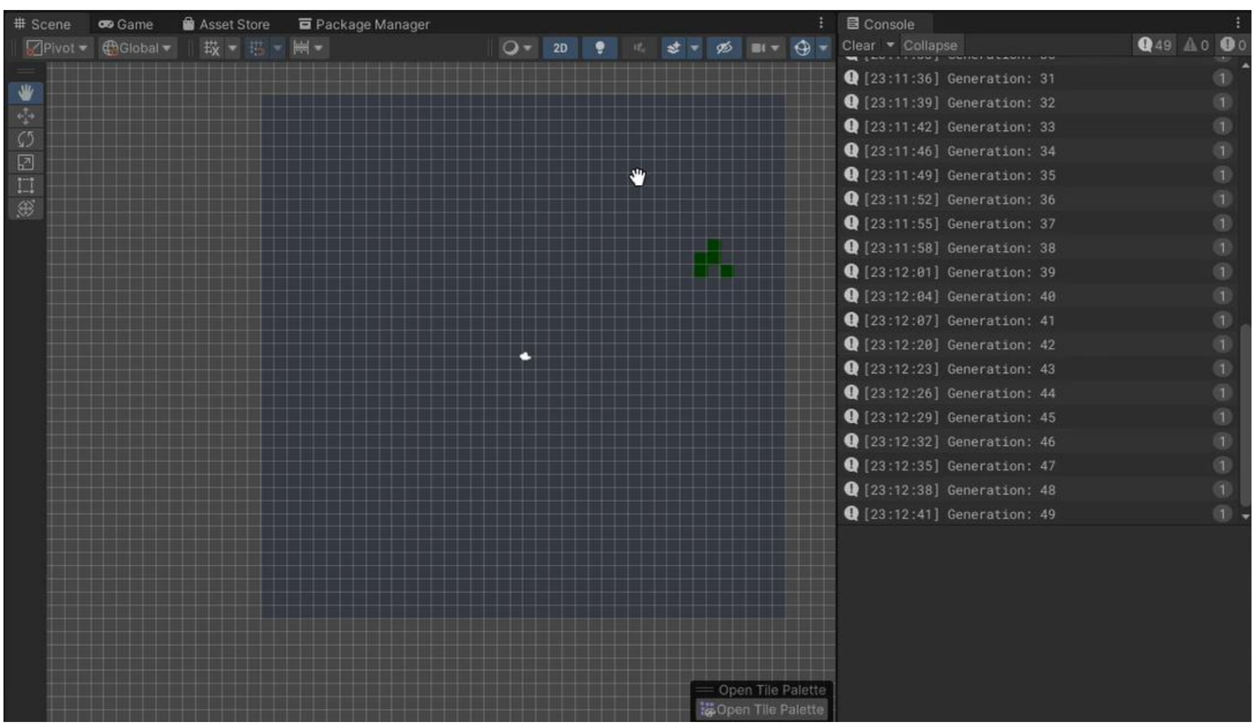
At the 10th generation



At the 20th generation

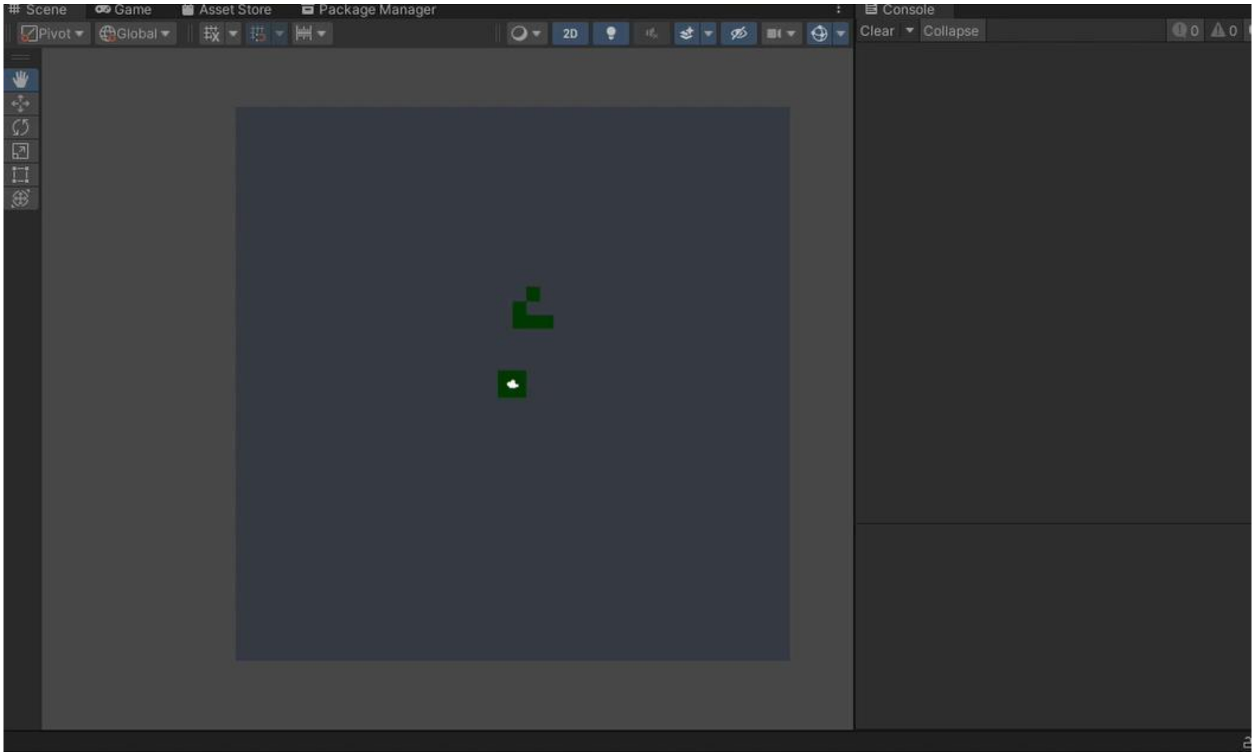


At the 50th generation

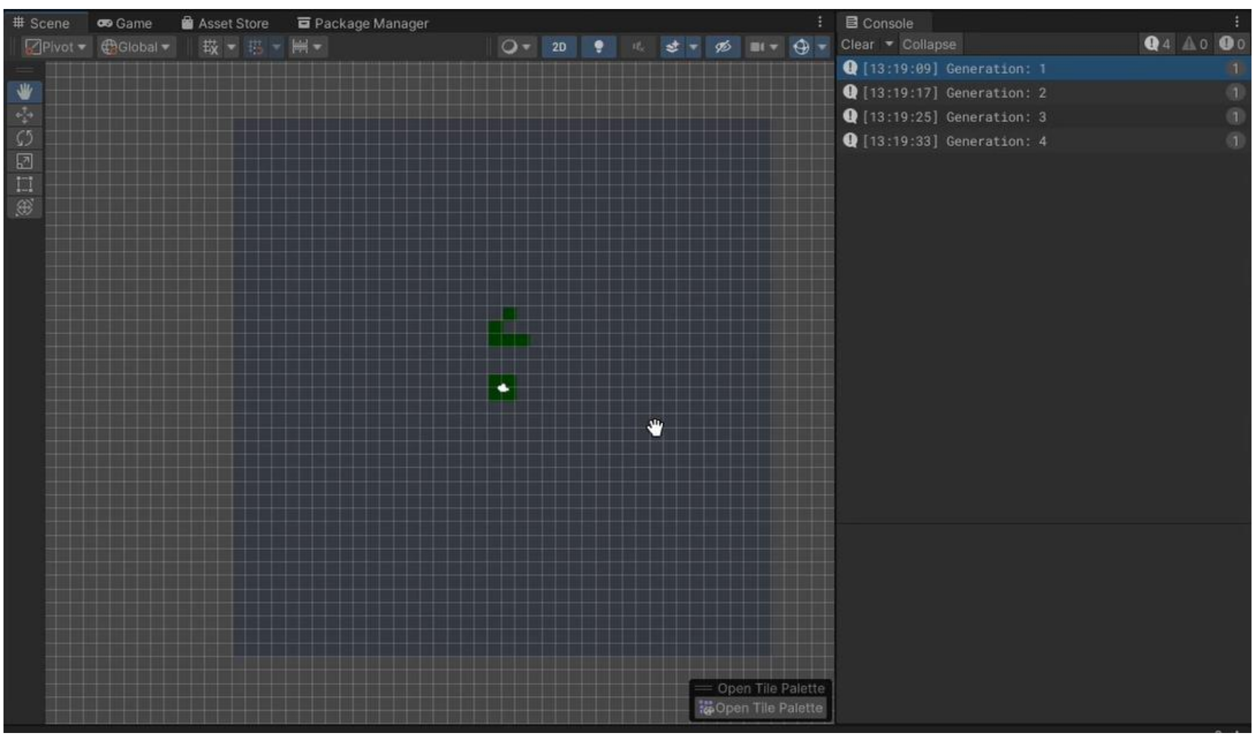


Pattern 3:

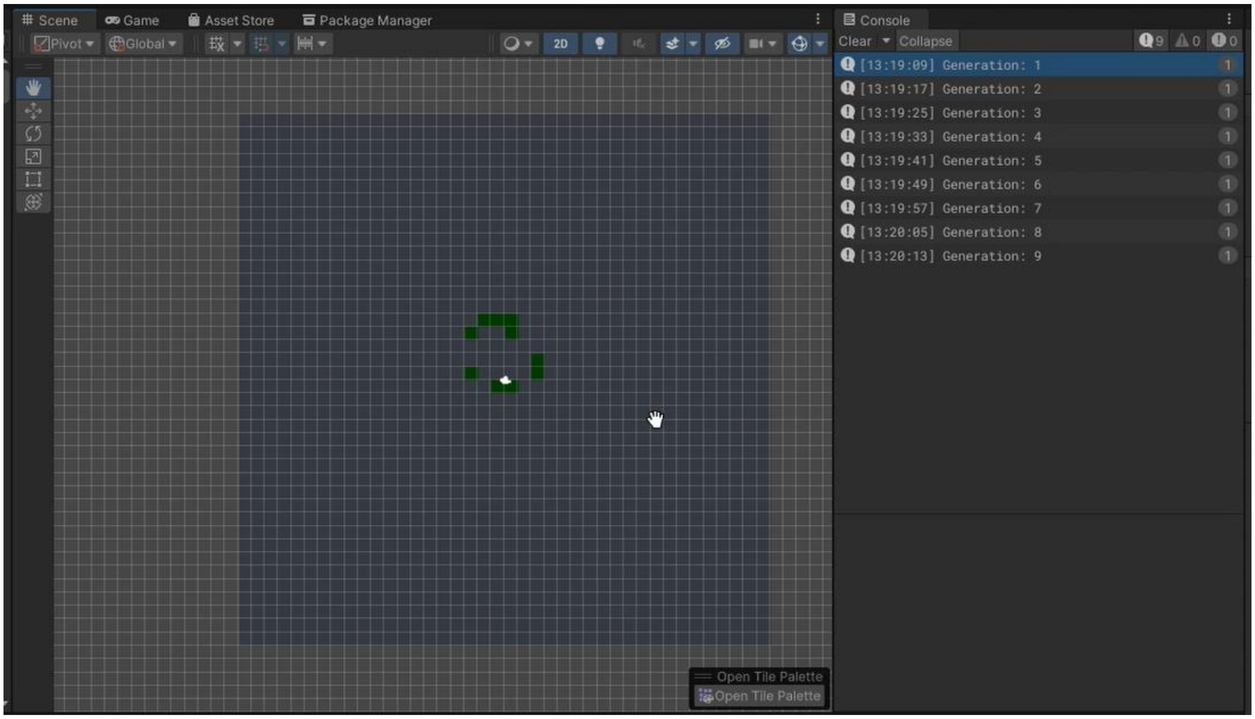
At the 1st generation (Initial)



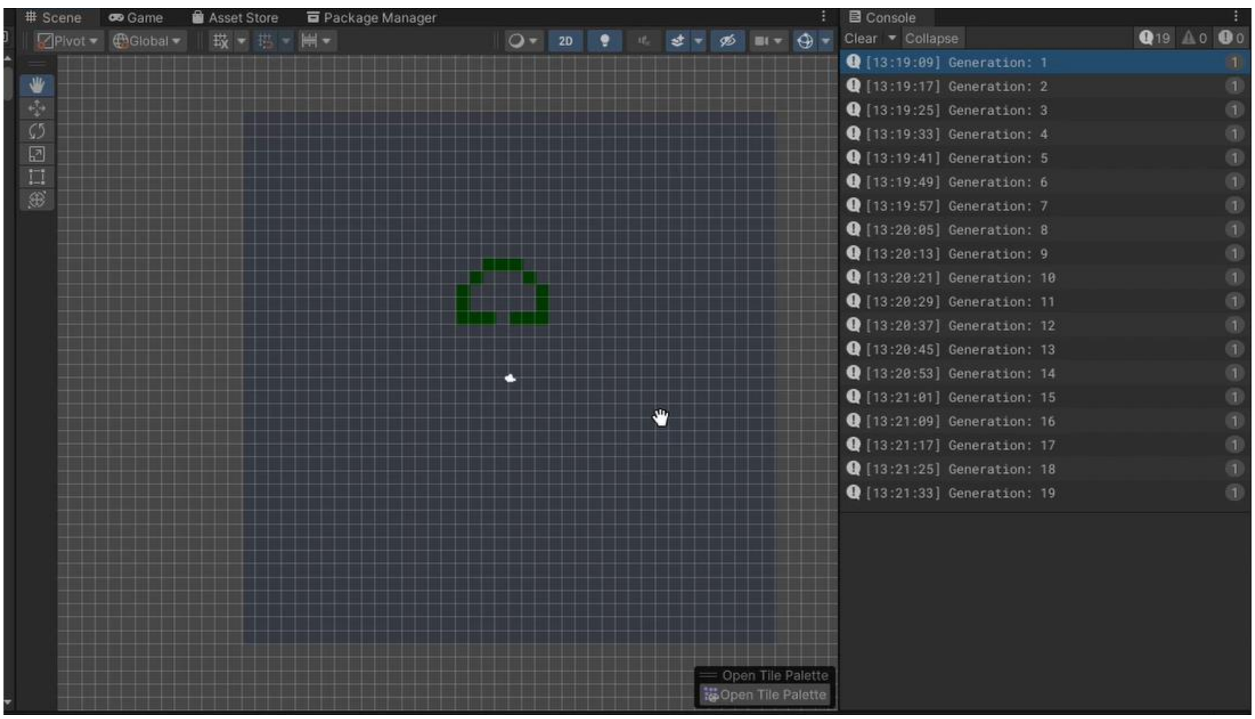
At the 5th generation



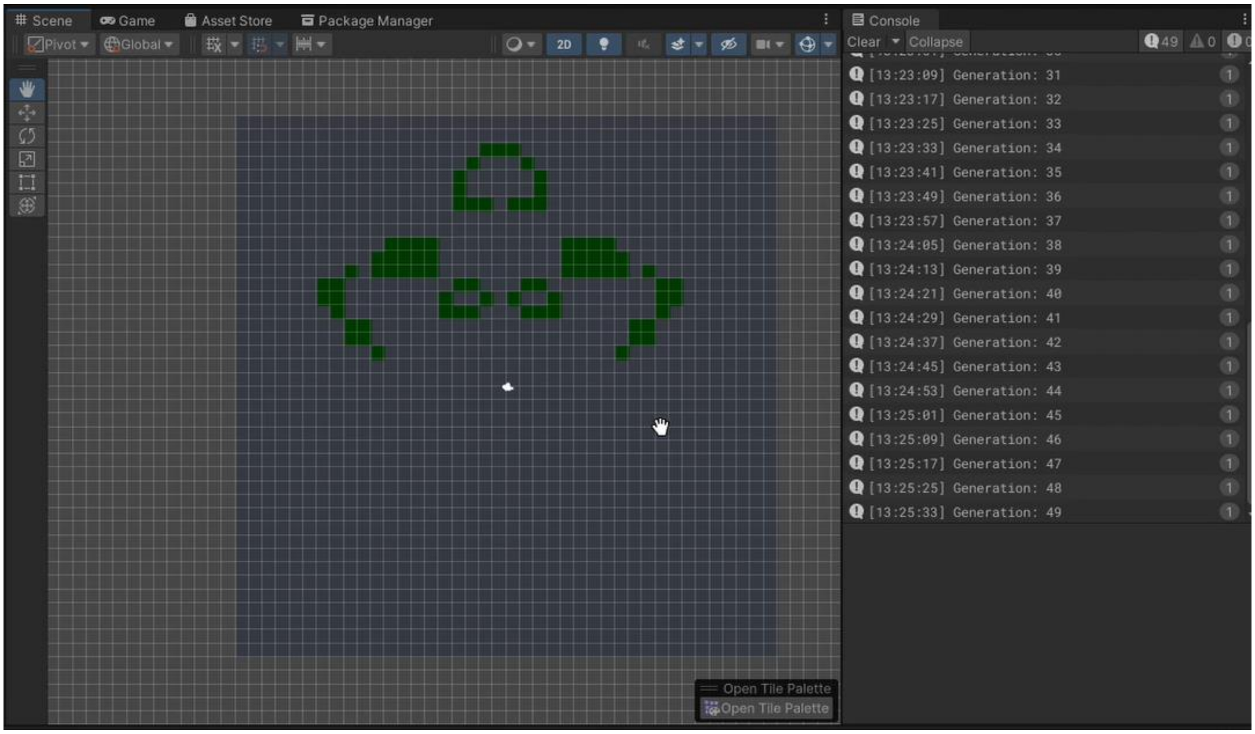
At the 10th generation



At the 20th generation



At the 50th generation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Asset Store
Package Manager
Pivot
Global
2D
Console
Clear
Collapse
49
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[13:23:25] Generation: 33
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[13:24:45] Generation: 43
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[13:25:01] Generation: 45
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[13:25:17] Generation: 47
[13:25:25] Generation: 48
[13:25:33] Generation: 49
Open Tile Palette
Open Tile Palette