The Game of Life is set in an infinite two-dimensional grid inhabited by “cells”. Every cell interacts with up to eight neighbours, which are the cells that are horizontally, vertically, or diagonally adjacent.

From an initial seed grid the game "evolves" one iteration at a time. An iteration applies rules to the grid to determine its next state. These scenarios are:

Scenario 1: Underpopulation  
 Given a game of life  
 When a live cell has fewer than two neighbours  
 Then this cell dies

Scenario 2: Overcrowding  
 Given a game of life  
 When a live cell has more than three neighbours  
 Then this cell dies

Scenario 3: Survival  
 Given a game of life  
 When a live cell has two or three neighbours  
 Then this cell stays alive

Scenario 4: Creation of Life  
 Given a game of life  
 When an empty position has exactly three neighbouring cells  
 Then a cell is created in this position

When applied these scenarios result in the following:

Scenario 5: Grid with no live cells  
 Given a game of life with the initial state containing no live cells  
 When the game evolves one turn  
 Then the next state also contains no live cells

**Continued overleaf…**

Scenario 6: Expected game outcome for seeded grid

Given a game of life with the initial state…

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When the game evolves one turn   
 Then the next state is…

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When the game evolves another turn   
 Then the next state is…

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Key: • = live cell