

Project 3. Now that we have all the parts (refer to Homework 9, Exercise 20, Exercise 21, and Homework 10), here's the project: Initialize the board using `rand`. Put the counting, updating, plotting parts of the game into a loop. When busy calculating MATLAB avoids updating the plots. To force MATLAB to update the plots, place a `pause(0.1)` after `pcolor`.

Once you have the basic dynamics working, there are various directions for further study:

- You will find that a large grid still requires too much memory and computation time. Since the matrices `A` and `count` are mostly zeros, it can be beneficial to use a `sparse` matrix for them. Figure out how to do it. To get a random sparse matrix use `sprand`.
- What happens if you change the rules? You can change the birth/life/death rules, or you can change the definition of neighborhood, or both. Find an alternative dynamic with nice results.
- A square grid is only one possibility. You could also consider a triangular or hexagonal grid. How would you implement them? Can you find nice game rules for them? How would you plot them? You cannot use `pcolor` any more.

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18.S997 Introduction To MATLAB Programming
Fall 2011

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