



Digital Design Verification

Weekly Task

Game of Life

Submitted by:

Name:	Khalil Rehman
Instructor:	Hira Sohail

Date:

July 26, 2025

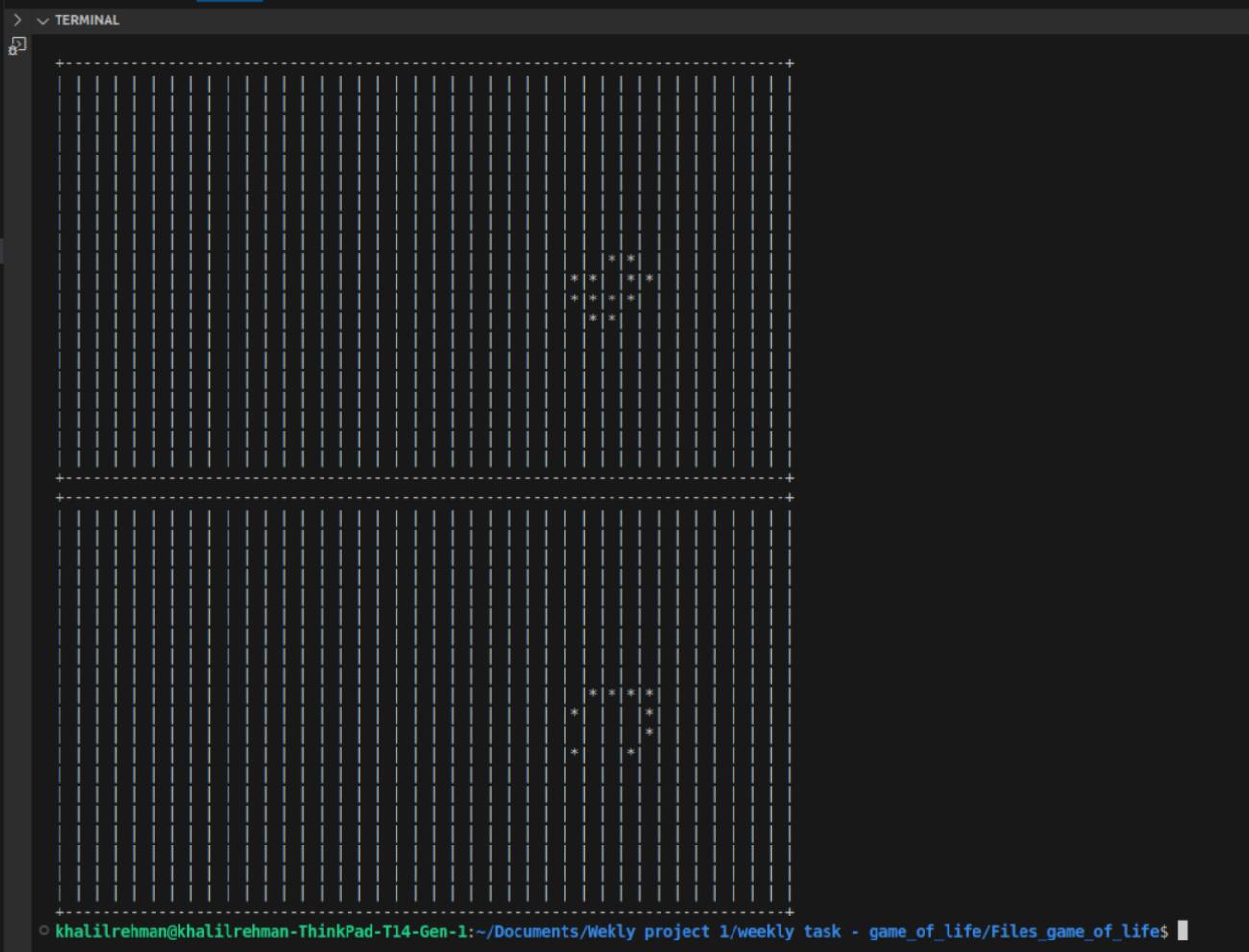
NUST Chip Design Centre (NCDC), Islamabad, Pakistan



In this lab, I implemented Conway's Game of Life in C by developing two main programs: lab1a.c, which computes and outputs only one generation of the game, and lab1b.c, which simulates multiple generations with live visualization. The core challenges I faced involved correctly calculating neighbors for each cell and applying the game rules consistently across generations. Initially, handling edge cases and syncing current and next generations caused unexpected results, but by isolating logic into helper functions like `get_next_state()` and `num_neighbors()`, and finalizing updates using `finalize_evolution()`, I ensured correctness. I also learned how to modularize code using headers (lifegame.h) and source files (lifegame.c), and how to interact with external files for input and output.

Lab1a.c

Project 1 www.ncdc.pk



The screenshot shows a terminal window with a dark background. The title bar at the top says "TERMINAL". The main area of the terminal is filled with a grid of dashed lines. In the upper right quadrant of the grid, there is a small cluster of asterisks (*) arranged in a pattern that resembles a small, irregular shape. In the lower right quadrant, there is another cluster of asterisks, but it is slightly different in shape, with a few asterisks missing or added compared to the one above. The overall appearance is that of a Game of Life simulation running on a terminal.