**PDF Document for Project 9 Submission : Ohad Swissa**

**1. Concept / Idea of my game:**

X-Tricks is a two-player game inspired by the classic Tic Tac Toe. Built in Jack, this game offers an interactive and engaging experience with features such as seamless keyboard-to-screen input, bold visual elements, dynamic player announcements, and clear win or tie detection. Players can restart or quit at the end of each round, making it a fun and collaborative experience that captures the nostalgic vibe of arcade games.

**2. Architecture:**

**Explanation of Key Components**:

* **Main.jack**:
  + **Purpose**: Acts as the entry point and main controller of the game.
  + **Responsibilities**:
    - Displays the opening screen with instructions and styling.
    - Handles the main game loop, alternating between players (X and O).
    - Displays player announcements and the grid mapping for ease of input.
    - Detects game outcomes (win/tie) and prompts for restarting or exiting.
  + **Notable Features**:
    - Uses the Jack OS Keyboard class for real-time key detection.
    - Implements visual transitions with Screen.clearScreen() for a polished user experience.
* **XTricks.jack**:
  + **Purpose**: Implements the core game logic and rendering of the grid and symbols.
  + **Responsibilities**:
    - Manages the game board as an array of 9 elements, representing grid cells.
    - Validates player moves and ensures they are placed in empty cells.
    - Detects win conditions and ties by checking combinations of cells.
    - Provides methods to reset the board for a new game.
  + **Notable Features**:
    - Draws a visually bold and polished 3x3 grid using Screen.drawLine.
    - Implements custom methods to draw X and O symbols dynamically, ensuring accurate placement and aesthetics.
    - Utilizes helper methods like isValidMove, makeMove, and checkLine for efficient and modular logic.

**Key OS Class Integration**:

* **Keyboard**: Detects key presses to allow player input (e.g., keys 1–9 for moves, SPACE to start, Y/N for restart and quit).
* **Screen**: Handles all visual aspects, including the grid, symbols, and game messages.
* **Output**: Used for printing messages and player announcements dynamically.

**3. Motivation:**

I chose to create X-Tricks because it was one of my favorite games as a child, and I wanted to recreate that nostalgic experience while applying the programming concepts I’ve learned in the Nand2Tetris course. The project allowed me to combine creativity with technical design, making it a rewarding and fun challenge. Further more, I believe that a game for two is always better and can make connections between peoples.

**4. Google Drive Link to my Video:**

Watch the demo here:[*X-Tricks by Ohad Swissa*](https://drive.google.com/file/d/1MaNo4ogTxkE-Ag1O-KDSNp005cfrNbP1/view?usp=sharing)

**5. Names and Emails**

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