"Code Breaker – The Array Heist"

🎮 **Game Concept:**

You are a hacker in training, trying to break into a secure system by manipulating a digital code array. The vault's password is hidden in a pattern within the array.

Your mission:

- Insert digits to build potential codes
- Delete wrong digits to fix mistakes
- Search for secret patterns (e.g., [2, 1, 4]) to unlock clues
- Crack the code before time runs out!

This game teaches: ✓ Insertion

✓ Deletion

✓ Linear Search for Subarrays (Pattern Matching)

✓ Array bounds and shifting logic

✔ **Your Task:**

Create an interactive "Code Breaker" game where the user manipulates a numeric array to find a hidden password pattern.

Use HTML, CSS, and JavaScript to build:

- A visual array of digits
- Buttons for insert, delete, and search
- Animations for all operations
- Feedback messages and success effects

Game Features

1. Visual Array Display

- Show an array of 8–10 cells (divs) in a horizontal row
- Each cell holds a number (0–9) or is empty
- Example: [3][1][7][ ][2][1][4][9]

2. Operations Panel

Provide buttons and inputs:

Insert at Index	Add a number at a given index; shift others right
Delete at Index	Remove number at index; shift left
Search for Pattern	Find a subarray (e.g.,[2, 1, 4]) in the array
Reset	Clear the array

Inputs:

- Index: number input (0–9)
- Value: number input (0–9)
- Pattern: text input like 2,1,4

3. Animations

- Insert: Existing elements slide right; new number fades in
- Delete: Elements slide left; deleted number shrinks and fades
- Search: Highlights each segment of the array as it checks for the pattern

4. Feedback System

- Show messages like:
    - "Inserted 5 at index 3!"
    - "Deleted element at index 2."
    - "Index out of bounds!"
    - "Enter a valid pattern (e.g., 1,2,3)"

EXTRA

1. Auto-Generate Secret Pattern
    - On load, pick a random 3-digit pattern (e.g., [3,7,1])
    - Player must insert digits to match it
    - "Level Complete!" when found
2. Time Attack Mode
    - Add a 60-second timer
    - "You cracked the code in 23 seconds!"
3. Sound Effects
    - Beep on insert
    - Error buzz on invalid input
    - Victory fanfare on unlock
4. Multiple Levels
    - Level 1: Find any 2-digit pattern
    - Level 2: Find a 3-digit pattern
    - Level 3: Find a pattern in reverse order