

Code

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#include <stdio.h>
#include <stdlib.h>
#include <time.h>

// Function to clear the console screen (works on Windows & Linux)
void clearScreen() {
    #ifdef _WIN32
        system("cls");
    #else
        system("clear");
    #endif
}

int main() {
    int board[6][6], shown[6][6];
    int size, totalScore = 0;
    int i, j;

    // Title
    clearScreen();
    printf("=====\\n");
    printf("      MEMORY MATCH MADNESS\\n");
    printf("=====\\n");
    printf("Match all pairs to win!\\n");
    printf("Scoring: +10 for a match, -2 for a wrong guess\\n\\n");

    // Choose difficulty
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printf("Choose difficulty:\n");
printf("1) Easy (2x2)\n2) Medium (4x4)\n3) Hard (6x6)\n> ");
int level;
scanf("%d", &level);
while (getchar() != '\n');

if (level == 1)
    size = 2;
else if (level == 2)
    size = 4;
else size = 6;

// Start from chosen level to Hard
for (int lvl = level; lvl <= 3; lvl++) {
    if (lvl == 1)
        size = 2;
    else if (lvl == 2)
        size = 4;
    else
        size = 6;

    // Initialize shown array
    for (i = 0; i < size; i++)
        for (j = 0; j < size; j++)
            shown[i][j] = 0;

    int total = size * size;
    int pairs = total / 2;
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int nums[36];

int k = 0;

// Fill pairs

for (i = 1; i <= pairs; i++) {

    nums[k++] = i;

    nums[k++] = i;

}

// Shuffle numbers

srand(time(NULL));

for (i = total - 1; i > 0; i--) {

    int r = rand() % (i + 1);

    int temp = nums[i];

    nums[i] = nums[r];

    nums[r] = temp;

}

// Fill the board

k = 0;

for (i = 0; i < size; i++)

    for (j = 0; j < size; j++)

        board[i][j] = nums[k++];



// Game loop

int found = 0, score = 0, tries = 0;

while (found < pairs) {

    clearScreen();
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printf("Level %dx%d | Total Score: %d | Attempts: %d\n",size, size, totalScore +
score, tries);

// Print board

printf("\n  ");

for (j = 0; j < size; j++)

    printf("%3d", j + 1);

printf("\n  +");

for (j = 0; j < size; j++)

    printf("---");

printf("\n");

for (i = 0; i < size; i++) {

    printf("%2d |", i + 1);

    for (j = 0; j < size; j++) {

        if (shown[i][j])

            printf("%3d", board[i][j]);

        else

            printf("%3s", "*");

    }

    printf("\n");

}

int r1, c1, r2, c2;

// First card

while (1){

    printf("\nSelect first card:\n Row (1-%d): ", size);

    scanf("%d", &r1);
}

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printf(" Col (1-%d): ", size);
scanf("%d", &c1);
while (getchar() != '\n');

r1--; c1--;
if (r1 < 0 || r1 >= size || c1 < 0 || c1 >= size) {
    printf("Invalid position!\n");
    continue;
}

if (shown[r1][c1]) {
    printf("Already revealed!\n");
    continue;
}

break;
}

shown[r1][c1] = 1;
clearScreen();

// Show after first pick

printf("Level %dx%d | Total Score: %d | Attempts: %d\n",
       size, size, totalScore + score, tries);

printf("\n  ");
for (j = 0; j < size; j++)
    printf("%3d", j + 1);

printf("\n  +");
for (j = 0; j < size; j++)
    printf("---");

printf("\n");

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for (i = 0; i < size; i++) {
    printf("%2d |", i + 1);
    for (j = 0; j < size; j++) {
        if (shown[i][j])
            printf("%3d", board[i][j]);
        else
            printf("%3s", "*");
    }
    printf("\n");
}

// Second card

while (1) {
    printf("\nSelect second card:\n Row (1-%d): ", size);
    scanf("%d", &r2);
    printf(" Col (1-%d): ", size);
    scanf("%d", &c2);
    while (getchar() != '\n');
    r2--; c2--;
    if (r2 < 0 || r2 >= size || c2 < 0 || c2 >= size) {
        printf("Invalid position!\n");
        continue;
    }
    if (r1 == r2 && c1 == c2) {
        printf("Same card! Try again.\n");
        continue;
    }
    if (shown[r2][c2]) {

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    printf("Already revealed!\n");

    continue;

}

break;

}

shown[r2][c2] = 1;

tries++;

clearScreen();

// Display board again

printf("Level %dx%d | Total Score: %d | Attempts: %d\n",
    size, size, totalScore + score, tries);

printf("\n  ");

for (j = 0; j < size; j++) {

    printf("%3d", j + 1);

    printf("\n  ");

    for (j = 0; j < size; j++) {

        printf("---");

        printf("\n");

        for (i = 0; i < size; i++) {

            printf("%2d |", i + 1);

            for (j = 0; j < size; j++) {

                if (shown[i][j])

                    printf("%3d", board[i][j]);

                else

                    printf("%3s", "*");

            }

        }

    }

}

}
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```
    printf("\n");
}

// Check match

if (board[r1][c1] == board[r2][c2]) {
    printf("\nMATCH! +10 points.\n");
    score += 10;
    found++;
} else {
    printf("\nNot a match! -2 points.\n");
    score -= 2;
    if (score < 0)
        score = 0;
    shown[r1][c1] = 0;
    shown[r2][c2] = 0;
}

printf("\nPress Enter to continue...");
getchar();
clearScreen(); // <-- clears after every try
}

printf("\nLEVEL COMPLETE! Score gained: %d\n", score);
totalScore += score;
printf("Press Enter to continue...");
getchar();
}
```

```
clearScreen();

printf("=====\\n");
printf("  GAME COMPLETE! FINAL SCORE\\n");
printf("=====\\n");
printf("Total Score: %d\\n", totalScore);
printf("Thanks for playing!\\n");

return 0;
}
```