Code:

import pygame

import sys

import random

import time

pygame.init()

pygame.mixer.init()

try:

    flip\_sound = pygame.mixer.Sound("flip.wav")

    match\_sound = pygame.mixer.Sound("match.wav")

except:

    flip\_sound = None

    match\_sound = None

WIDTH, HEIGHT = 600, 600

SCREEN = pygame.display.set\_mode((WIDTH, HEIGHT))

pygame.display.set\_caption("Memory Matching Game")

BG\_COLOR = (30, 30, 30)

CARD\_BACK\_COLOR = (50, 50, 50)

CARD\_BORDER\_COLOR = (0, 200, 150)

TEXT\_COLOR = (255, 255, 255)

FONT = pygame.font.SysFont(None, 36)

ROWS, COLS = 4, 4

CARD\_SIZE = WIDTH // COLS - 15

GAP = 10

COLORS = [

    (255, 0, 0), (0, 255, 0), (0, 0, 255), (255, 255, 0),

    (255, 0, 255), (0, 255, 255), (255, 165, 0), (128, 0, 128)

]

def create\_cards():

    card\_colors = COLORS \* 2

    random.shuffle(card\_colors)

    cards = []

    for row in range(ROWS):

        for col in range(COLS):

            x = col \* (CARD\_SIZE + GAP) + GAP

            y = row \* (CARD\_SIZE + GAP) + GAP + 50

            cards.append({

                'rect': pygame.Rect(x, y, CARD\_SIZE, CARD\_SIZE),

                'color': card\_colors.pop(),

                'flipped': False,

                'matched': False

            })

    return cards

def draw\_cards(cards):

    for card in cards:

        rect = card['rect']

        if card['flipped'] or card['matched']:

            pygame.draw.rect(SCREEN, card['color'], rect)

        else:

            pygame.draw.rect(SCREEN, CARD\_BACK\_COLOR, rect)

        pygame.draw.rect(SCREEN, CARD\_BORDER\_COLOR, rect, 3)

def draw\_text(text, pos):

    label = FONT.render(text, True, TEXT\_COLOR)

    SCREEN.blit(label, pos)

def main():

    cards = create\_cards()

    flipped = []

    matched\_pairs = 0

    start\_time = None

    running = True

    wait\_time = 0

    clock = pygame.time.Clock()

    while running:

        dt = clock.tick(30) / 1000

        for event in pygame.event.get():

            if event.type == pygame.QUIT:

                running = False

            if event.type == pygame.MOUSEBUTTONDOWN and event.button == 1:

                if wait\_time > 0:

                    continue

                pos = pygame.mouse.get\_pos()

                for card in cards:

                    if card['rect'].collidepoint(pos):

                        if not card['flipped'] and not card['matched']:

                            card['flipped'] = True

                            flipped.append(card)

                            if flip\_sound:

                                flip\_sound.play()

                            if start\_time is None:

                                start\_time = time.time()

                        break

        if len(flipped) == 2:

            c1, c2 = flipped

            if c1['color'] == c2['color']:

                c1['matched'] = True

                c2['matched'] = True

                matched\_pairs += 1

                flipped = []

                if match\_sound:

                    match\_sound.play()

            else:

                wait\_time = 1

        if wait\_time > 0:

            wait\_time -= dt

            if wait\_time <= 0:

                for card in flipped:

                    card['flipped'] = False

                flipped = []

        SCREEN.fill(BG\_COLOR)

        draw\_cards(cards)

        elapsed = 0

        if start\_time is not None:

            elapsed = time.time() - start\_time

        draw\_text(f"Time: {elapsed:.1f} s", (10, 10))

        draw\_text(f"Matches: {matched\_pairs} / {len(COLORS)}", (WIDTH - 200, 10))

        if matched\_pairs == len(COLORS):

            draw\_text("You won! ", (WIDTH//2 - 80, HEIGHT//2 - 20))

        pygame.display.flip()

    pygame.quit()

    sys.exit()

if \_\_name\_\_ == "\_\_main\_\_":

    main()