

Copilot

Sure! Here's a step-by-step guide to create a Python script that reads a defined area of the screen to detect dice, counts the total number of dice and the number displayed on each die, and saves this information in a SQLite database.

Step 1: Install Required Libraries

First, you'll need to install some libraries. You can use `opencv-python` for image processing, `pytesseract` for optical character recognition (OCR), and `sqlite3` for database operations.

```
pip install opencv-python pytesseract
```

Step 2: Set Up Tesseract OCR

Make sure you have Tesseract OCR installed on your system. You can download it from [here](#).

Step 3: Write the Python Script

```

import cv2
import pytesseract
import sqlite3
from pynput import keyboard

# Configure Tesseract path
pytesseract.pytesseract.tesseract_cmd = r'C:\Program Files\Tesseract-OCR\tesseract.exe' # Update this path

# Database setup
conn = sqlite3.connect('dice_data.db')
c = conn.cursor()
c.execute('''CREATE TABLE IF NOT EXISTS dice_data
            (total_dice INTEGER, num_1 INTEGER, num_2 INTEGER, num_3 INTEGER, num_4 INTEGER, num_5 INTEGER, num_6 INTEGER)''')
conn.commit()

def read_dice_area():
    # Capture the screen area (you can define the area as needed)
    screen = cv2.imread('dice_area.png') # Replace with actual screen capture code

    # Convert to grayscale
    gray = cv2.cvtColor(screen, cv2.COLOR_BGR2GRAY)

    # Use thresholding to preprocess the image
    _, thresh = cv2.threshold(gray, 128, 255, cv2.THRESH_BINARY)

    # Use pytesseract to detect numbers
    custom_config = r'--oem 3 --psm 6 outputbase digits'
    text = pytesseract.image_to_string(thresh, config=custom_config)

    # Process the detected text
    dice_counts = [0] * 6
    total_dice = 0
    for char in text:
        if char.isdigit() and 1 <= int(char) <= 6:
            dice_counts[int(char) - 1] += 1
            total_dice += 1

    # Save to database
    c.execute("INSERT INTO dice_data (total_dice, num_1, num_2, num_3, num_4, num_5, num_6) VALUES (?, ?, ?, ?, ?, ?, ?)",
              (total_dice, dice_counts[0], dice_counts[1], dice_counts[2], dice_counts[3], dice_counts[4], dice_counts[5]))
    conn.commit()

    print(f"Total Dice: {total_dice}, Counts: {dice_counts}")

def on_press(key):
    try:
        if key.char == 'r': # Press 'r' to read the dice area
            read_dice_area()
    except AttributeError:
        pass

# Listen for key press
with keyboard.Listener(on_press=on_press) as listener:
    listener.join()

```

```
# Close the database connection  
conn.close()
```

Explanation

1. **Install Required Libraries:** Install `opencv-python` for image processing and `pytesseract` for OCR.
2. **Set Up Tesseract OCR:** Ensure Tesseract OCR is installed and configure its path.
3. **Database Setup:** Create a SQLite database with a table to store dice data.
4. **Capture and Process Screen Area:** Capture the screen area containing the dice, convert it to grayscale, and apply thresholding.
5. **Detect Numbers Using Tesseract:** Use Tesseract OCR to detect numbers in the processed image.
6. **Save Data to Database:** Count the total number of dice and the occurrences of each number, then save this data to the database.
7. **Key Press Listener:** Use `pynput` to listen for a key press (e.g., 'r') to trigger the dice reading function.

Feel free to adjust the screen capture part to fit your specific needs. Let me know if you need any further assistance!