import sqlite3

import os

from datetime import datetime

# Create a SQLite database and transactions table if it doesn't exist

def create\_database():

conn = sqlite3.connect('budget\_tracker.db')

cursor = conn.cursor()

cursor.execute('''

CREATE TABLE IF NOT EXISTS transactions (

id INTEGER PRIMARY KEY,

date DATE,

category TEXT NOT NULL,

description TEXT,

amount REAL

)

''')

conn.commit()

conn.close()

# Function to input an expense or income

def input\_transaction(conn, category, description, amount):

cursor = conn.cursor()

date = datetime.now().strftime('%Y-%m-%d %H:%M:%S')

cursor.execute('INSERT INTO transactions (date, category, description, amount) VALUES (?, ?, ?, ?)',

(date, category, description, amount))

conn.commit()

# Function to calculate the remaining budget

def calculate\_budget(conn):

cursor = conn.cursor()

cursor.execute('SELECT SUM(amount) FROM transactions')

total\_amount = cursor.fetchone()[0]

if total\_amount is None:

total\_amount = 0

return total\_amount

# Function to analyze expenses by category

def analyze\_expenses(conn):

cursor = conn.cursor()

cursor.execute('SELECT category, SUM(amount) FROM transactions WHERE amount < 0 GROUP BY category')

expenses\_by\_category = cursor.fetchall()

return expenses\_by\_category

# Main function

def main():

create\_database()

conn = sqlite3.connect('budget\_tracker.db')

while True:

print("\nOptions:")

print("1. Enter an expense")

print("2. Enter income")

print("3. Calculate budget")

print("4. Analyze expenses by category")

print("5. Quit")

choice = input("Enter your choice (1/2/3/4/5): ")

if choice == "1" or choice == "2":

category = input("Enter the category: ")

description = input("Enter a description (optional): ")

amount = float(input("Enter the amount: ")) \* (-1 if choice == "1" else 1)

input\_transaction(conn, category, description, amount)

print(f"Transaction added successfully.")

elif choice == "3":

total\_amount = calculate\_budget(conn)

print(f"Total budget: {total\_amount}")

elif choice == "4":

expenses\_by\_category = analyze\_expenses(conn)

if not expenses\_by\_category:

print("No expenses to analyze.")

else:

print("Expenses by category:")

for category, amount in expenses\_by\_category:

print(f"{category}: {amount}")

elif choice == "5":

conn.close()

print("Goodbye!")

break

else:

print("Invalid choice. Please try again.")

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

main()