import sqlite3

import re

# Connect to the database (or create it if it doesn't exist)

conn = sqlite3.connect("students.db")

cursor = conn.cursor()

# Create the students table if it doesn't already exist

cursor.execute("""

CREATE TABLE IF NOT EXISTS students (

id INTEGER PRIMARY KEY AUTOINCREMENT,

student\_name TEXT NOT NULL,

student\_id TEXT NOT NULL UNIQUE,

birth\_date TEXT NOT NULL

)

""")

conn.commit()

# Input validation functions

def validate\_student\_name(name):

if not name or len(name) > 100:

     return False

return True

def validate\_student\_id(student\_id):

return re.match(r"^[a-zA-Z0-9\_-]{1,50}$", student\_id) is not None

def validate\_birth\_date(birth\_date):

return re.match(r"^\d{4}-\d{2}-\d{2}$", birth\_date) is not None

# Function to add a student to the database

def add\_student():

student\_name = input("Enter the student's name (max 100 characters): ").strip()

student\_id = input("Enter the student's ID (letters, numbers, '-', '\_', max 50 characters): ").strip()

birth\_date = input("Enter the student's birth date (YYYY-MM-DD): ").strip()

# Validate inputs

if not validate\_student\_name(student\_name):

     print("Invalid name. Please ensure it's not empty and under 100 characters.")

     return

if not validate\_student\_id(student\_id):

     print("Invalid student ID. Please use only letters, numbers, '-', or '\_' and ensure it's under 50 characters.")

     return

if not validate\_birth\_date(birth\_date):

     print("Invalid birth date. Please use the format YYYY-MM-DD.")

     return

try:

     cursor.execute("""

     INSERT INTO students (student\_name, student\_id, birth\_date)

     VALUES (?, ?, ?)

     """, (student\_name, student\_id, birth\_date))

     conn.commit()

     print("Student added successfully!")

except sqlite3.IntegrityError:

     print("Error: A student with this ID already exists.")

except sqlite3.Error as e:

     print(f"Database error: {e}")

# Main program loop

while True:

print("\nStudent Database")

print("1. Add a new student")

print("2. Exit")

choice = input("Enter your choice: ").strip()

if choice == "1":

     add\_student()

elif choice == "2":

     print("Exiting the program. Goodbye!")

     break

else:

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

# Close the database connection

conn.close()