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# ------------------------------------------------
# Python + MongoDB CRUD Operations (Menu-driven)
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from pymongo import MongoClient
# Connect to MongoDB
client = MongoClient("mongodb://localhost:27017/")
db = client["university_db"]          # Database
students = db["students"]             # Collection
print(" Connected to MongoDB successfully!\n")
# Menu-driven program using while loop
while True:
    print("\n====== Student Database Menu ======")
    print("1. Insert Record")
    print("2. Display All Records")
    print("3. Update Record")
    print("4. Delete Record")
    print("5. Exit")
    choice = input("Enter your choice (1-5): ")
    if choice == "1":
        # Insert Record
        name = input("Enter student name: ")
        age = int(input("Enter student age: "))
        dept = input("Enter student department: ")

        student = {"name": name, "age": age, "department": dept}
        students.insert_one(student)
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        print(" Record inserted successfully!")
    elif choice == "2":
        # Display All Records
        print("\n📋 Student Records:")
        for s in students.find():
            print(f"ID: {s['_id']} | Name: {s['name']} | Age: {s['age']} | Department:
{s['department']}")
    elif choice == "3":
        # Update Record
        name = input("Enter the name of the student to update: ")
        new_age = int(input("Enter new age: "))
        new_dept = input("Enter new department: ")

        result = students.update_one(
            {"name": name},
            {"$set": {"age": new_age, "department": new_dept}}
        )
        if result.matched_count > 0:
            print(" Record updated successfully!")
        else:
            print(" Student not found!")
    elif choice == "4":
        # Delete Record
        name = input("Enter the name of the student to delete: ")
        result = students.delete_one({"name": name})
        if result.deleted_count > 0:
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            print(" Record deleted successfully!")
        else:
            print(" Student not found!")
    elif choice == "5":
        # Exit
        print(" Exiting program...")
        client.close()
        break
    else:
        print(" Invalid choice! Please enter a number from 1 to 5.")
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