

Python Project: University Environment

-Demonstrating Python Concepts: Functions, Dictionaries, Lists, Loops

This project includes the following features:

- Add a student: Adds a new student to the student dB dictionary, including the student's ID, name, age, and courses they're enrolled in.
- Enroll in a Course: Enrolls an existing student in a new course.
- Display Student Info: Displays the information of a single student given their student ID.
- Display All Students: Displays the information of all students in the database.

The program will add some sample students to the database, enroll Alice in a new course, display Alice's updated information, and then display information for all students.

- Function to add a student

```
def add_student(student_db, student_id, name, age, courses=[]):  
    student_db[student_id] = {  
        'name': name,  
        'age': age,  
        'courses': courses  
    }
```

-Function to enroll a student in a course

```
def enroll_in_course(student_db, student_id, course_name):  
    if student_id in student_db:  
        student_db[student_id]['courses'].append(course_name)  
    else:  
        print(f"Student with ID {student_id} not found.")
```

-Function to display student information

```
def display_student_info(student_db, student_id):  
    if student_id in student_db:  
        student = student_db[student_id]
```

```
print(f'Student ID: {student_id}')
print(f'Name: {student['name']}')
print(f'Age: {student['age']}')
print(f'Courses: {', '.join(student['courses'])}')
else:
    print(f'Student with ID {student_id} not found.')
```

-Function to display all students

```
def display_all_students(student_db):
    for student_id, student_info in student_db.items():
        print("=====")
        display_student_info(student_db, student_id)
```

-Main code

```
if __name__ == "__main__":
```

- Initialize an empty dictionary to hold student data

```
student_db = {}
```

Add some students

```
add_student(student_db, 1, "Alice", 20, ["Math", "Physics"])
add_student(student_db, 2, "Bob", 21, ["History"])
add_student(student_db, 3, "Charlie", 22, ["Chemistry", "Biology"])
```

-Enroll Alice in a new course

```
enroll_in_course(student_db, 1, "Computer Science")
```

-Display information of a single student

```
print("Info for student with ID 1:")
display_student_info(student_db, 1)
```

-Display information of all students

```
print("\nInfo for all students:")  
display_all_students(student_db)
```