

Manage Student Data Using Tuples and Various Methods You are tasked with managing student data using Python tuples. Each student's data will include:

Name (string) Roll Number (integer) Marks in 3 Subjects (tuple of 3 integers) Grade (string) Your program must use tuples and implement the following methods to perform the tasks:

- 1.Create Students: Create a list of student tuples.
- 2.Display All Students: Print all student records.
- 3.Add a New Student: Add a student to the list.
- 4.Search for a Student: Find a student by roll number and display their details.
- 5.Calculate Total Marks: Compute and display the total marks for each student.
- 6.Update Grades: Modify a student's grade using their roll number.
- 7.Remove a Student: Delete a student's record from the list using their roll number.

```
def create_student(name, roll_number, marks, grade):  
    """Creates a student tuple."""  
    return (name, roll_number, marks, grade)  
  
def display_students(students):  
    """Displays all student records."""  
    for student in students:  
        print(student)  
  
def add_student(students, name, roll_number, marks, grade):  
    """Adds a new student to the list."""  
    student = create_student(name, roll_number, marks, grade)  
    students.append(student)  
  
def search_student(students, roll_number):  
    """Finds a student by roll number and displays their details."""  
    for student in students:  
        if student[1] == roll_number:  
            return student  
    return None  
  
def calculate_total_marks(students):  
    """Computes and displays the total marks for each student."""  
    for student in students:  
        total_marks = sum(student[2])  
        print(f"Total marks for {student[0]}: {total_marks}")  
  
def update_grade(students, roll_number, new_grade):  
    """Modifies a student's grade using their roll number."""  
    for i in range(len(students)):  
        if students[i][1] == roll_number:  
            updated_student = list(students[i])  
            updated_student[3] = new_grade  
            students[i] = tuple(updated_student)  
            break  
  
def remove_student(students, roll_number):  
    """Deletes a student's record from the list using their roll
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number."""
    for i in range(len(students)):
        if students[i][1] == roll_number:
            del students[i]
            break

# Create an initial list of student tuples
students = [
    create_student("Alice", 101, (80, 90, 85), "A"),
    create_student("Bob", 102, (75, 85, 70), "B"),
]

# Display all student records
display_students(students)

# Add a new student
add_student(students, "Charlie", 103, (90, 95, 92), "A+")

# Search for a student
student = search_student(students, 102)
if student:
    print(f"Found student: {student}")
else:
    print("Student not found.")

# Calculate total marks
calculate_total_marks(students)

# Update a student's grade
update_grade(students, 101, "A+")

# Remove a student
remove_student(students, 102)

# Display updated student records
display_students(students)

('Alice', 101, (80, 90, 85), 'A')
('Bob', 102, (75, 85, 70), 'B')
Found student: ('Bob', 102, (75, 85, 70), 'B')
Total marks for Alice: 255
Total marks for Bob: 230
Total marks for Charlie: 277
('Alice', 101, (80, 90, 85), 'A+')
('Charlie', 103, (90, 95, 92), 'A+')

```