

MAJOR PROJECT

SOURCE CODE:

```
class Student:

    def __init__(self, name, roll_number):

        self.name = name

        self.roll_number = roll_number

        self.grades = {}

    def add_grade(self, subject, grade):

        self.grades[subject] = grade

    def calculate_average(self):

        return sum(self.grades.values()) / len(self.grades)

    def display_details(self):

        print(f"Name: {self.name}")

        print(f"Roll Number: {self.roll_number}")

        print("Grades:")

        for subject, grade in self.grades.items():

            print(f"{subject}: {grade}")

        print(f"Average Grade: {self.calculate_average():.2f}")

class StudentTracker:

    def __init__(self):

        self.students = {}
```

```
def add_student(self, name, roll_number):  
    self.students[roll_number] = Student(name, roll_number)
```

```
def add_grade(self, roll_number, subject, grade):  
    if roll_number in self.students:  
        self.students[roll_number].add_grade(subject, grade)  
    else:  
        print("Student not found.")
```

```
def view_student_details(self, roll_number):  
    if roll_number in self.students:  
        self.students[roll_number].display_details()  
    else:  
        print("Student not found.")
```

```
def main():  
    tracker = StudentTracker()
```

```
    while True:  
        print("\nStudent Performance Tracker")  
        print("1. Add Student")  
        print("2. Add Grade")  
        print("3. View Student Details")  
        print("4. Exit")
```

```
    choice = input("Choose an option: ")
```

```
if choice == "1":  
    name = input("Enter student name: ")  
    roll_number = input("Enter roll number: ")  
    tracker.add_student(name, roll_number)  
elif choice == "2":  
    roll_number = input("Enter roll number: ")  
    subject = input("Enter subject: ")  
    grade = float(input("Enter grade: "))  
    tracker.add_grade(roll_number, subject, grade)  
elif choice == "3":  
    roll_number = input("Enter roll number: ")  
    tracker.view_student_details(roll_number)  
elif choice == "4":  
    break  
else:  
    print("Invalid option. Please choose again.")
```

```
if __name__ == "__main__":  
    main()
```