Problem 3: Student Information System (Hard Level)

Description:
Design a **student information system** using Java with the following features:

- **Abstract class** `Person` with attributes `name, age`
- **Derived classes** `Student` (with roll number) and `Teacher` (with subject)
- **Override** `displayDetails()`

Code:

```java
abstract class Person {
    protected String name;
    protected int age;

    public Person(String name, int age) {
        this.name = name;
        this.age = age;
    }
    abstract void displayDetails();
}
class Student extends Person {
    private int rollNumber;

    public Student(String name, int age, int rollNumber) {
        super(name, age);
        this.rollNumber = rollNumber;
    }
    public void displayDetails() {
        System.out.println("Student Details:");
        System.out.println("Name: " + name);
        System.out.println("Age: " + age);
        System.out.println("Roll Number: " + rollNumber);
    }
}
class Teacher extends Person {
    private String subject;

    public Teacher(String name, int age, String subject) {
        super(name, age);
        this.subject = subject;
    }
    public void displayDetails() {
        System.out.println("Teacher Details:");
        System.out.println("Name: " + name);
        System.out.println("Age: " + age);
        System.out.println("Subject: " + subject);
    }
}
public class StudentInfoSystem {
    public static void main(String[] args) {
        Student student = new Student("Anshuman", 20, 12477);
        Teacher teacher = new Teacher("Mr. Mayank", 30, "Java");
        student.displayDetails();
        System.out.println();
        teacher.displayDetails();
    }
}
```
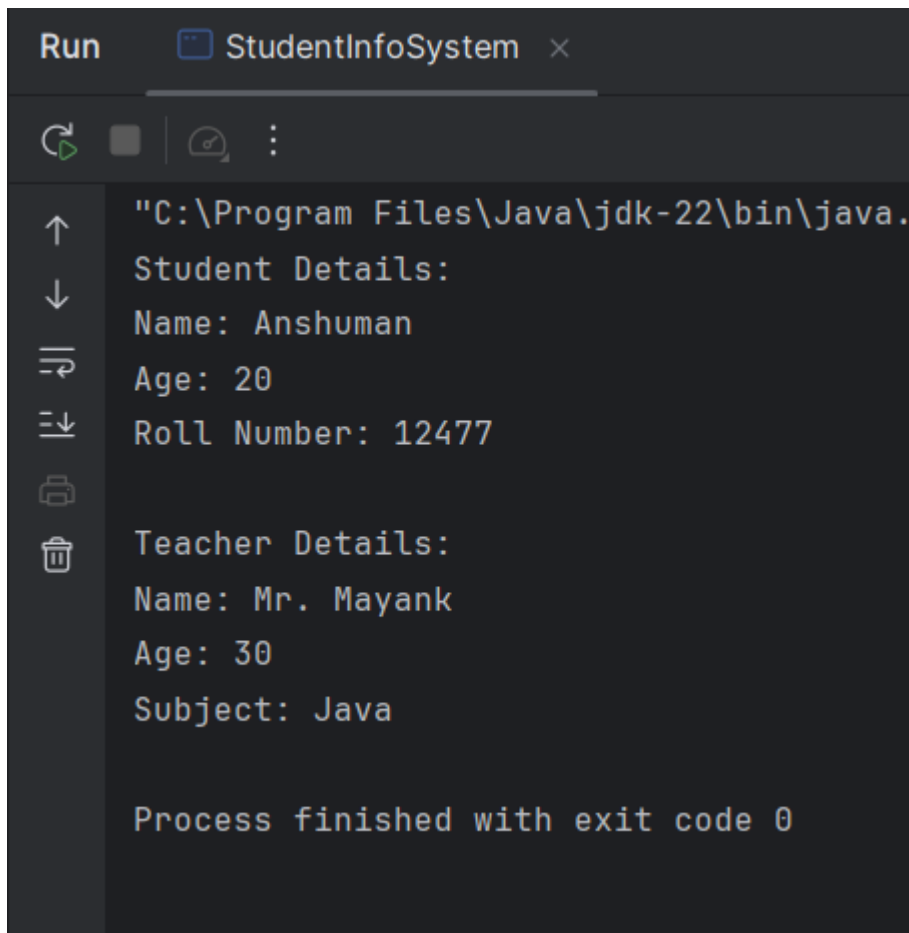
Output:

```
Run        StudentInfoSystem  ×

"C:\Program Files\Java\jdk-22\bin\java.
Student Details:
Name: Anshuman
Age: 20
Roll Number: 12477

Teacher Details:
Name: Mr. Mayank
Age: 30
Subject: Java

Process finished with exit code 0
```