Problem 1: Encapsulation

Create a Python class `Employee` with the following requirements:

- The class should have private attributes `__name` and `__salary`.
- Provide methods to set and get the values of these attributes.
- Ensure that the `__salary` attribute cannot be set to a negative value.

Problem 2: Inheritance

Create a subclass `Manager` of the `Employee` class with the following requirements:

- Add a new attribute `__department`.
- Override the `__str__` method to include department information along with name and salary.

Test Cases

Test your implementation by creating instances of the `Employee` and `Manager` classes and performing the following operations:

1. Create an `Employee` object with name "John" and salary 50000.
2. Try to set the salary of the employee to a negative value.
3. Create a `Manager` object with the name "Alice", salary 70000, and department "HR".
4. Print the details of both the `Employee` and `Manager` objects.

Problem 2: Encapsulation

Create a Python class `Person` with the following requirements:

- The class should have private attributes `__name` and `__age`.
- Provide methods to set and get the values of these attributes.
- Ensure that the `__age` attribute cannot be set to a negative value.

Problem 3: Inheritance

Create a subclass `Student` of the `Person` class with the following requirements:

- Add a new attribute `__student_id`.
- Override the `__str__` method to include student ID information along with name and age.

Test Cases

Test your implementation by creating instances of the `Person` and `Student` classes and performing the following operations:

1. Create a `Person` object with the name "Alice" and age 25.
2. Try to set the age of the person to a negative value.
3. Create a `Student` object with name "Bob", age 20, and student ID "S1234".
4. Print the details of both the `Person` and `Student` objects.