Inheritance is a fundamental concept in programming that allows a class to inherit properties and behaviors from another class. This means that the subclass can reuse code from the superclass, which promotes code reusability and organization. A significant benefit of inheritance is that it helps to reduce code duplication. By inheriting common properties and methods from a base class, multiple subclasses can share the same code, making the program more maintainable and less prone to errors. Inheritance can be applied in a scenario where you have a base class containing general information and behavior, such as a `Student` class with properties like `Name` and methods like `SubmitAssignment`. Subclasses could then inherit from `Student`, such as `MathStudent` or `WritingStudent`, each with additional specific properties and methods.

Here is my code:

public class WritingAssignment : Assignment {

private string \_title;

public WritingAssignment(string studentName, string topic, string title)

: base(studentName, topic) {

\_title = title;

}

public string GetWritingInformation() {

string studentName = GetStudentName();

return $"{\_title} by {studentName}";

}

}

In the provided code example, `WritingAssignment` is a subclass that inherits from the `Assignment` superclass. The `Assignment` class contains common properties such as `studentName` and `topic`, and possibly methods like `GetStudentName`. The `WritingAssignment` subclass extends this functionality by adding a new property `\_title` and a method `GetWritingInformation` that returns a string combining the title and the student's name. This demonstrates how inheritance allows for the extension and reuse of existing code, making it easier to manage and extend programs without duplicating code.