**Week 06 Project: Assignment on Polymorphism**

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**1. What is Polymorphism?**

Polymorphism is the ability of different classes to be treated through the same interface, usually by sharing a common base class. It allows objects of different types to respond to the same method call in their own way.

**2. Key Benefit of using Polymorphism**

One major benefit of polymorphism is flexibility. It allows one to write code that works with different types of objects without knowing their exact class, making a person’s program easier to extend and maintain.

**3. Application of Polymorphism**

In my Eternal Quest program, I created a base class called Goal, and then made three subclasses: SimpleGoal, EternalGoal, and ChecklistGoal. Each one overrides methods like RecordEvent() and GetStatus() to behave differently depending on the goal type.

**4. Code Example**

*List<Goal> goals = new List<Goal>();*

*goals.Add(new SimpleGoal("Read Book", "Finish reading a novel", 50));*

*goals.Add(new EternalGoal("Exercise", "Go for a run", 10));*

*goals.Add(new ChecklistGoal("Attend Classes", "Go to 5 lectures", 20, 5, 100));*

*foreach (Goal goal in goals)*

*{*

*Console.WriteLine(goal.GetStatus());*

*}*

This loop treats all goals as Goal objects, but each one displays its status differently depending on its actual type. That’s polymorphism in action.