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**Assignment # 1**

**Question # 1**

**What are design patterns?**

**Design patterns:**

The best practices used by professional object-oriented software developers are defined by design trends. Application trends are solutions to general problems encountered by software developers during the development of software. These solutions have been achieved over quite a long period of time through trial and error by various software developers.

**Usage of Design Pattern:**

Design Patterns have two main usages in software development.

**Common platform for developers:**

Style trends are common vocabulary and are unique to specific situations. A singleton design pattern, for instance, means the use of a single object, so all developers familiar with a single design pattern can use a single object and they can inform each other that a singleton pattern is followed by the program.

**Best Practices:**

Over a long period of time, design trends have evolved and they offer the best solutions to many problems faced during software development. Learning these trends makes it easier and quicker for unexperienced developers to learn software design.

**How many types of design patterns are? Name them.**

There are 23 design patterns that can be grouped into three groups according to the design pattern guide book Design Patterns - Components of Reusable Object-Oriented Software:

* *Creational*
* *Structural*
* *Behavioral patterns*
* *We'll also cover another design pattern category: J2EE design patterns.*

**Where we can use patterns?**

Man-made patterns, including those used in mathematics, science, and language, are also used in architecture and can be abstract. Patterns may be used in design and art to create visual impacts on the viewer. Patterns are important because they provide an underlying order with visual clues.