**Assignment No: 7**

**Problem Statement:**

Implement the Forward Chaining Algorithm.

**Theory:**

Forward Chaining is an inference method that begins with known facts and applies inference rules to generate new facts until a specified goal is achieved. This technique is commonly used in expert systems and rule-based engines.

**Methodology:**

1. Define Rules:
   * Establish a set of rules structured as "If-Then" statements. For instance:  
     If (A is true) and (B is true), Then C is true.
2. Initial Facts:
   * Start with a collection of known facts. These serve as the foundational truths or base knowledge from which new facts will be derived.
3. Chaining Process:
   * Utilize the known facts to fulfill the conditions of the defined rules. When all conditions of a rule are satisfied, derive the new fact (conclusion).
   * Continue this iterative process until the goal is reached or no further new facts can be inferred.
4. Applications:
   * Medical Diagnosis: Forward chaining can help deduce a diagnosis based on presented symptoms.
   * Expert Systems: It can be employed to suggest actions or provide recommendations based on given conditions.

**Conclusion:**

We successfully implemented forward chaining, showcasing its capability to derive new facts and achieve a goal through rule-based inference.