**Assignment No: 7**

**Problem Statement:-**

Implement the Forward Chaining Algorithm.

**Theory:-**

**Forward Chaining** is an inference technique where reasoning starts with known facts and applies inference rules to generate new facts until a goal is reached. It is typically used in expert systems or rule-based engines.

**Methodology:-**

1. **Define Rules**:
   * Create a set of rules in the form of "If-Then" statements. For example:

If (A is true) and (B is true), Then C is true.

1. **Initial Facts**:
   * Begin with a set of known facts. These are the initial truths or base knowledge from which new facts will be derived.
2. **Chaining Process**:
   * Use the known facts to satisfy the conditions of rules. When all conditions of a rule are satisfied, derive the new fact (conclusion).
   * Continue this process iteratively until the goal is reached or no more new facts can be inferred.
3. **Application**:
   * **Medical Diagnosis**: Forward chaining can infer a diagnosis based on symptoms.
   * **Expert Systems**: It can be used to recommend actions or provide advice based on given conditions.

**Conclusion:-**

We implemented forward chaining, demonstrating its ability to derive new facts and reach a goal through rule-based inference