**Procedural Knowledge**

Procedural or imperative knowledge clarifies how to perform a certain task. It lays down the steps to perform. For example, - how to copy an array using javascript in a procedural way.

**Example**

var a=[1, 2, 3, 4, 5];

var b=[];

for(var i=0;i < a.length;i++) {

   b.push(a[i]);

}

console.log(b);

**Output**

[1, 2, 3, 4, 5]

**Declarative Knowledge**

Declarative or functional knowledge clarifies what to do to perform a certain task. It lays down the function to perform. For example, - how to copy an array using javascript in a declarative way.

**Example**

var a=[1, 2, 3, 4, 5];

var b=a.map(function(number){

   return number\*1

});

console.log(b);

**Output**

[1, 2, 3, 4, 5]

Comparison Chart

| **BASIS FOR COMPARISON** | **PROCEDURAL KNOWLEDGE** | **DECLARATIVE KNOWLEDGE** |
| --- | --- | --- |
| Basic | Includes the knowledge of how a particular thing can be accomplished. | Includes the basic knowledge about something. |
| Alternate name | Interpretive knowledge | Descriptive knowledge |
| Stated by | Direct application to the task and difficult to articulate formally. | Declarative sentences and easily articulated. |
| Popularity | Less common | Generally used |
| Ease of sharing the knowledge | Hard to communicate | Can be easily shared, copied, processed and stored. |
| Taken from | Experience, action, and subjective insight. | Artifact of some type as a principle, procedure, process and concepts. |
| Nature | Process oriented | Data-oriented |
| Represented by | Set of rules | Production systems |
| Feature | Debugging is difficult | Validation is quite simple |

|  |  |  |
| --- | --- | --- |
| S. No. | Forward Chaining | Backward Chaining |
| 1. | Forward chaining starts from known facts and applies inference rule to extract more data unit it reaches to the goal. | Backward chaining starts from the goal and works backward through inference rules to find the required facts that support the goal. |
| 2. | It is a bottom-up approach | It is a top-down approach |
| 3. | Forward chaining is known as data-driven inference technique as we reach to the goal using the available data. | Backward chaining is known as goal-driven technique as we start from the goal and divide into sub-goal to extract the facts. |
| 4. | Forward chaining reasoning applies a breadth-first search strategy. | Backward chaining reasoning applies a depth-first search strategy. |
| 5. | Forward chaining tests for all the available rules | Backward chaining only tests for few required rules. |
| 6. | Forward chaining is suitable for the planning, monitoring, control, and interpretation application. | Backward chaining is suitable for diagnostic, prescription, and debugging application. |
| 7. | Forward chaining can generate an infinite number of possible conclusions. | Backward chaining generates a finite number of possible conclusions. |
| 8. | It operates in the forward direction. | It operates in the backward direction. |
| 9. | Forward chaining is aimed for any conclusion. | Backward chaining is only aimed for the required data. |