An algorithm has a specific format which is shown in fig. ① . An algorithm is a sequence of operational steps. It transforms input output.

```
ALGORITHM : Algorithm_Name
Input : _ _ _ _ _ _ _
Step 1 : _ _ _ _ _ _
Step 2 : _ _ _ _ _
Step 3 : _ _ _ _ _ _
    .
    .
    .
Step n : _ _ _ _ _ _
output : _ _ _ _ _
```
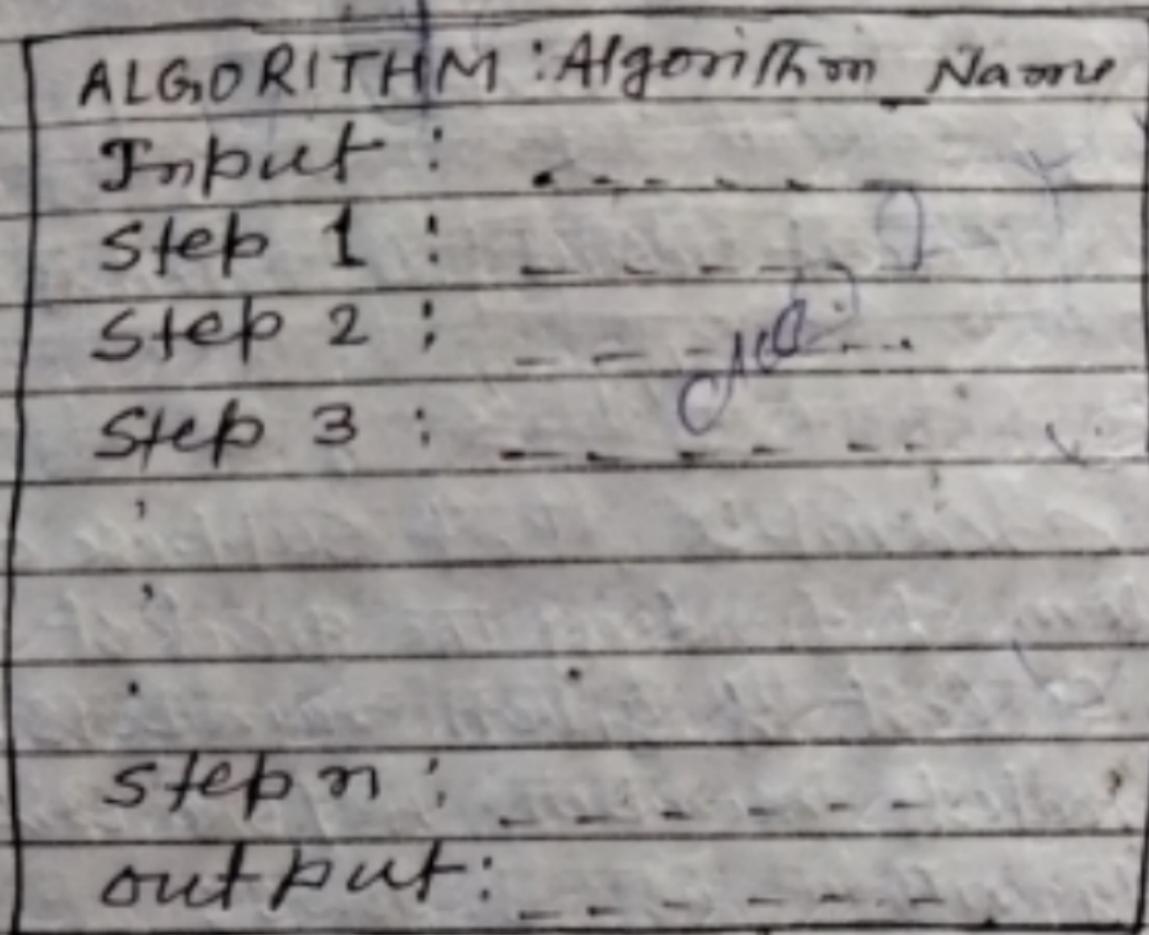
fig-1 Format of Algorithm.

Fig-2 demonstrates the Problem Solving with the help of algorithm.

This Problem can be solved by using different methods. Thus, we can design different algorithm for solving the same Problem. These algorithm can vary widely in number of steps, time and effort.

```
┌──────────────────────┐
│ Problem to be Solved │
└──────────────────────┘
          │
          ▼
┌─────────────────────────────┐
│ Algorithm Created for Perform-│
│ ing Particular task          │
└─────────────────────────────┘
                │
                ▼
┌────────┐    ┌──────────┐
│ Input  │──→ │ Computer │
└────────┘    └──────────┘
                  │
                  ▼
            ┌──────────┐
            │ Output   │
            └──────────┘
              ╱       ╲
             ▼          ▼
   ┌──────────────┐  ┌──────────────┐
   │ Correct result│  │ Error if any │
   └──────────────┘  └──────────────┘
```
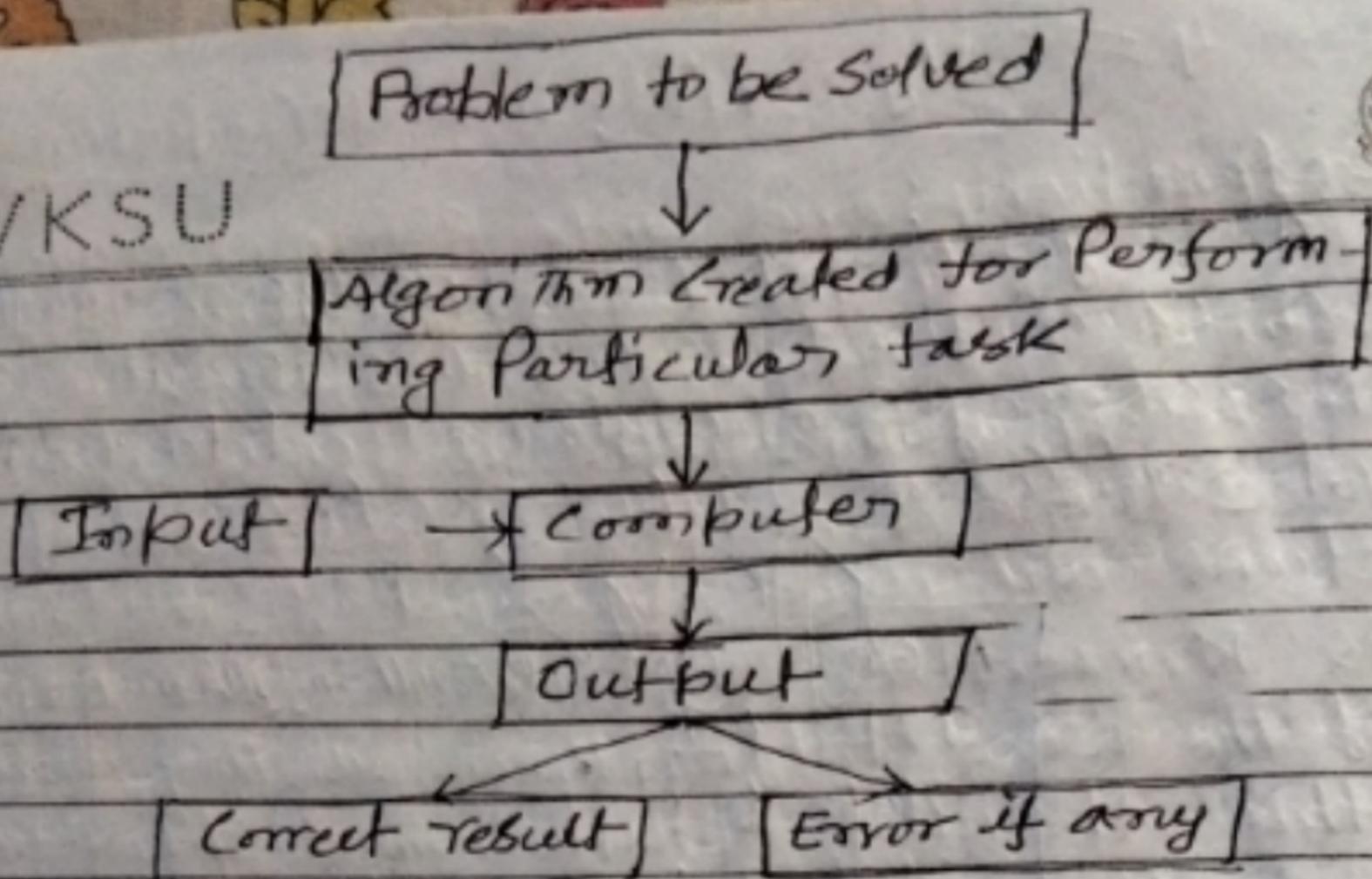
fig-2

for example, Let suppose one has a problem of finding the greatest number from a list of given numbers. To find The greatest number, he/she will write The algorithm as follows:

Algorithm : Largest Number

step 1) Largest $\leftarrow L_0$
step 2) for every item in The list $L \geq 1$, do
step 3) If the item > largest, Then
step 4) Largest $\leftarrow$ item
step 5) Return largest.

Properties of Algorithm:
Salient properties of an algorithm are as follows:

1) Finiteness : After finite number of steps it terminates.

2.) **Definiteness** : Specified rigorously and unambiguously.

3.) **Input** : It clearly specified the valid input.

4) **Output** : For a valid input it can be proved to give the accurate output.

5:) **Effectiveness** : Simple and basic steps are used,

Algorithm Development :

The steps which are included in the development of algorithm are given below :

1.) **Input** : The input is the first step. In this step we will define the inputs that the algorithm will use. The algorithm will operate on input. Input can be anything from a single value to a complex data structure.

2) **Processing** : Processing is the core phase where the algorithm performs operations on the inputs using a series of computational steps. Processing is guided by logical and arithmetic calculations to process the data effectively. This step involves sub-steps !

(i) Decision Making: Decisions must be made based on Certain Criteria at different stages of Processing. For This Sub-step, the algorithm's flow is guided by Conditional statements, which results in several algo- rithmic Paths.

(ii) Looping: several steps in many algorithms must be carried out repeatedly until a Particular Condition is satisfied. looping optimizes the Process and saves time by allowing the algorithm to repeat the same Processes.

3.) Output: the algorithm generates an O/P after Putting the inputs Through a number of Conditional and Computational stages. This output is the result of the algorithm's operations and is utilized to address the issue or complete the task.

4.) Termination:

To make sure an algorithm doesn't run endlessly, it needs a specified stopping Point. The algorithm reaches its termination Point when every step is completed successfully and the output is generated