

EMERGING METHODS FOR EARLY DETECTION FOREST FIRES DEEP LEARNING

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UTILIZATION OF ALGORITHMS

An algorithm is a process or set of rules which must be followed to complete a particular task. This is basically the step-by-step procedure to complete any task. All the tasks are followed a particular algorithm, from making a cup of tea to make high scalable software. This is the way to divide a task into several parts. If we draw an algorithm to complete a task then the task will be easier to complete.

The algorithm is used for,

To develop a framework for instructing computers.

Introduced notation of basic functions to perform basic tasks.

For defining and describing a big problem in small parts, so that it is very easy to execute.

Characteristics of Algorithm

An algorithm should be defined clearly.

An algorithm should produce at least one output.

An algorithm should have zero or more inputs.

An algorithm should be executed and finished in finite number of steps.

An algorithm should be basic and easy to perform.

Each step started with a specific indentation like, "Step-1",

There must be "Start" as the first step and "End" as the last step of the algorithm.

Let's take an example to make a cup of tea,

How to Use Algorithms to Solve Problems?

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Let's take an example to make a cup of tea,

Step 1: Start

Step 2: Take some water in a bowl.

Step 3: Put the water on a gas burner.

Step 4: Turn on the gas burner

Step 5: Wait for some time until the water is boiled.

Step 6: Add some tea leaves to the water according to the requirement.

Step 7: Then again wait for some time until the water is getting colorful as tea.

Step 8: Then add some sugar according to taste.

Step 9: Again wait for some time until the sugar is melted.

Step 10: Turn off the gas burner and serve the tea in cups with biscuits.

Step 11: End

Here is an algorithm for making a cup of tea. This is the same for computer science problems.

There are some basics steps to make an algorithm:

Start – Start the algorithm

Input – Take the input for values in which the algorithm will execute.

Conditions – Perform some conditions on the inputs to get the desired output.

Output – Printing the outputs.

End – End the execution.

Let's take some examples of algorithms for computer science problems.

Example 1. Swap two numbers with a third variable

Step 1: Start

Step 2: Take 2 numbers as input.

Step 3: Declare another variable as "temp".

Step 4: Store the first variable to "temp".

Step 5: Store the second variable to the First variable.

Step 6: Store the "temp" variable to the 2nd variable.

Step 7: Print the First and second variables.

Step 8: End

Example 2. Find the area of a rectangle

Step 1: Start

Step 2: Take the Height and Width of the rectangle as input.

Step 3: Declare a variable as "area"

Step 4: Multiply Height and Width

Step 5: Store the multiplication to "Area", (its look like $\text{area} = \text{Height} \times \text{Width}$)

Step 6: Print "area";

Step 7: End

Example 3. Find the greatest between 3 numbers.

Step 1: Start

Step 2: Take 3 numbers as input, say A, B, and C.

Step 3: Check if($A > B$ and $A > C$)

Step 4: Then A is greater

Step 5: Print A

Step 6: Else

Step 7: Check if($B > A$ and $B > C$)

Step 8: Then B is greater

Step 9: Print B

Step 10: Else C is greater

Step 11: Print C

Step 12: End

Advantages of Algorithm

An algorithm uses a definite procedure.

It is easy to understand because it is a step-by-step definition.

The algorithm is easy to debug if there is any error happens.

It is not dependent on any programming language

It is easier for a programmer to convert it into an actual program because the algorithm divides a problem into smaller parts.

Disadvantages of Algorithms

An algorithm is Time-consuming, there is specific time complexity for different algorithms.

Large tasks are difficult to solve in Algorithms because the time complexity may be higher, so programmers have to find a good efficient way to solve that task.

Looping and branching are difficult to define in algorithms.