Difference Between Algorithm and Flowchart

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Key Difference - Algorithm vs Flowchart

There can be many methods to solve a problem. The order to solve the problem might change from one to another. In computer science, an algorithm is a sequence of steps to solve a problem. Algorithms can be written using two methods, such as using a flowchart or using pseudo-code. A flowchart gives a graphical representation of an algorithm using symbols. A pseudo-code uses natural language or compact mathematical notation to write algorithms. This article discusses the difference between algorithm and flowchart. The **key difference** between Algorithm and Flowchart is that **an algorithm is a step by step procedure to solve a given problem while flowchart is a diagram that is used to represent an algorithm.**

What is an Algorithm?

Every task happens according to an algorithm. If there is a question such as how to log in to a Facebook account, the sequence will be as follows. First, the user should open the browser. Then he should type the correct URL. After going to the Facebook page, he should enter the correct email address and password. Finally, the user has to press the login button. If the provided username and password is correct, he can open the Facebook account. Likewise, every task has a sequence of steps to follow. In computing, this mechanism is known as an algorithm. The algorithm cannot be defined without explaining the procedure. A procedure is a finite sequence of instructions, where each can be carried out in a finite amount of time. Therefore, an algorithm is a step by step procedure to solve a given problem. When there is a complex problem to solve, it can be divided into small sub problems. Writing algorithms for each sub problem is known as sub-algorithm.

Algorithm for adding two numbers is as follows.

1. Initialize sum = 0
2. Enter number1, number2
3. Add them and store the result in the sum.
4. Print sum

This sequence of steps in the algorithm using simple English to add two numbers.

Algorithm for finding the sum of five numbers is as follows.

1. Initialize sum = 0 and count= 0
2. Enter number
3. Find sum + number and assign the new value to sum and increment the count by one.
4. Is count < 5, if yes go to step 2, else print sum.

This sequence of steps in the algorithm using simple English to find the sum of five numbers. Some examples of algorithms are search algorithms and sort algorithms. Search algorithms are used to search an element in a data structure. The sort algorithms can sort items in a certain order.

What is a Flowchart?

A flowchart is a diagram that represents an algorithm. The algorithm can be written down using a flowchart. It is not a programming language. It is a graphical representation of writing the algorithm. A flowchart has a number of symbols. The oval shape indicates the start and end of a program. The rhombus symbol represents the input and output operations. For example, the program might be requesting user input. Else, it might print an answer to the screen as an output. A process is represented using a rectangle symbol. It represents variable initializations and calculations. These can be situations with decisions. Going through one path may give true while another path can give false. For that kind of situation, a diamond symbol is used. It is to check true or false. A small circle is known as a connector. It is used to connect breaks in the flowchart. The sequence from one step to the other is represented by an arrow key. The flowchart to calculate the sum of two numbers are as follows. The numbers are 2 and 3.

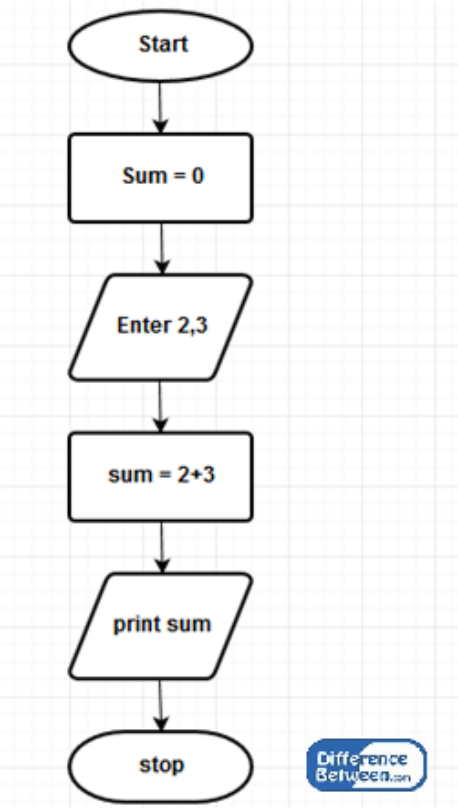

Figure 01: Flowchart to calculate the sum of two numbers

Below diagram illustrates the flowchart to calculate the sum of 10 numbers.

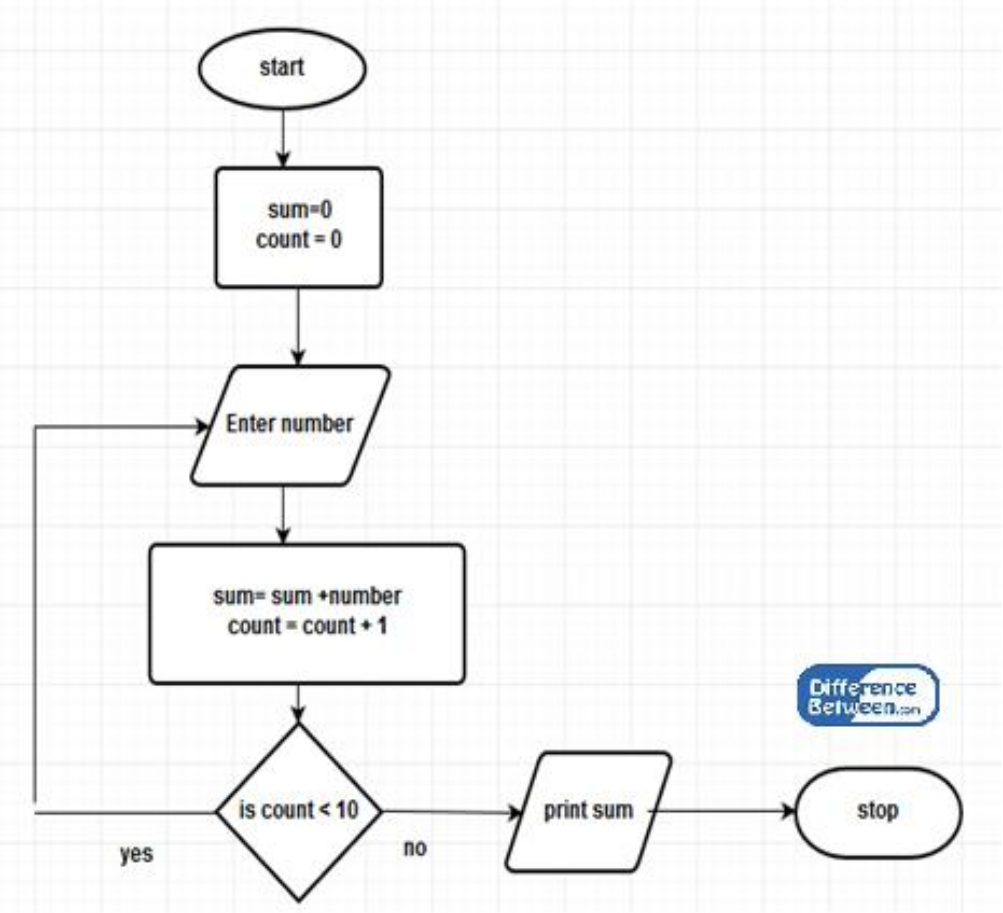

Figure 02: Flowchart to calculate the sum of 10 numbers

There are some rules to follow when drawing a flowchart. A flowchart should be drawn from top to bottom. All flowcharts should start with a start symbol, and all boxes should be connected with an arrow. Decision symbols have two exit points which are true or false. These facts should be considered when drawing a flowchart.

What are the Similarities Between Algorithm and Flowchart?

- Both are useful to solve a problem.
- Both can use natural language or compact mathematical notation.

What is the Difference Between Algorithm and Flowchart?

Algorithm vs Flowchart	
An algorithm is a step by step procedure to solve a	A flowchart is a diagram that represents an

given problem.	algorithm.
Representation	
Algorithms are represented using flowcharts or pseudo code.	A flowchart is represented using symbols.

Summary - Algorithm vs Flowchart

This article discussed the difference between algorithm and flowchart. The difference between Algorithm and Flowchart is that an algorithm is a step by step procedure to solve a given problem while flowchart is a diagram which represents an algorithm. An algorithm is designed to solve a given problem. There can be several approaches to solve the problem. It is important to analyze each solution and implements the best solution. The algorithms can be visualized using a flowchart. When analyzing the algorithm, the running time and the required space is also considered.

Reference:

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