

Victoria university of Bangladesh

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Course: CSI-227 (Algorithm)

Dept. - CSE (evening)

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Ans to the qu no - 1

① As we study algorithm, we can learn analysis that allow us to compare and contrast solutions base solely on their own characteristics not the characteristics of the program or computer used to implement them. Computer scientists learn by experience we learn by seeing others solved problem and by solving problems by ourselves. Being exposed to different Algorithms are designed helps us to take on the next challenging problem that we are given.

Application of the Algorithm: Here we will see some of the practical of the algorithm.

⇒ First we will start with the internet which is very much important for our daily life and we cannot even imagine our life with out the internet and it is the out income of clever and creative algorithm. Numerous sites on the internet can operate and falsity this huge number of data, only with the helps.

(P.T.O)

⇒ The every electronic commerce activities are massively subject to our data. for example, credit or debit card number, password, OTPs and many more. The centre technology used incorporate public key cryptography and digital signature which depend on mathematical algorithms.

⇒ Even an application that does not need algorithm content at the application relies upon Hardware, GUI, networking, or object direction and all of these create substantiation us of algorithms.

⇒ There are some vital use case where take. Algorithm has been used such as if we watch any video on youtube then next time, we will get related type advice as recommended videos for us.

(P.T.O)

⇒ Difference between Algorithm and pseudocode

Algorithm	pseudocode
<p>(i) It is a step by step description of the solutions.</p>	<p>(i) It is an easy way of writing Algorithm for users to understand</p>
<p>(ii) It is always a real Algorithm and not fake codes.</p>	<p>(ii) These are fake codes.</p>
<p>(iii) They are sequence of solution to a problem.</p>	<p>(iii) They are representations of algorithm.</p>
<p>(iv) It is a systematically written code.</p>	<p>(iv) These are simpler way of writing codes.</p>
<p>(v) They are an unambiguous of writing codes.</p>	<p>(v) They are method of describing written in a algorithm.</p>
<p>(vi) They can be considered pseudocode.</p>	<p>(vi) They can't consider Algorithm.</p>
<p>(vii) They are no rules of writing Algorithms.</p>	<p>(vii) certain rules of writing pseudocode are there.</p>

C11 Types of Algorithm: Here is 7 types of Algorithm —

- (i) Brute force Algorithm
- (ii) Recursive . " "
- (iii) Dynamic " "
- (iv) Divide and conquer Algorithm
- (v) Greedy Algorithm
- (vi) Backtracking " "
- (vii) Randomized Algorithm.

⇒ Greedy Algorithm: A greedy Algorithm is an approach for solving a problem by selecting the best option available at the moment. It doesn't worry whether the current best result with bring the overall optimal result. The Algorithm reverses the earlier decision exam. if the choice is working in a top-down approach.

There are few variation of the greedy Algorithm —

- (i) pure greedy algorithm.
- (ii) Orthogonal greedy Algorithm.
- (iii) Relaxed greedy Algorithm.

Ans to the que no-2

①

Searching Algorithm: In computer since search algorithm is an algorithm designed to solve a search problem. search algorithm work to retrieve information stored within particular data structure or calculated in the search space of a problem domain, with either discrete or continuous values.

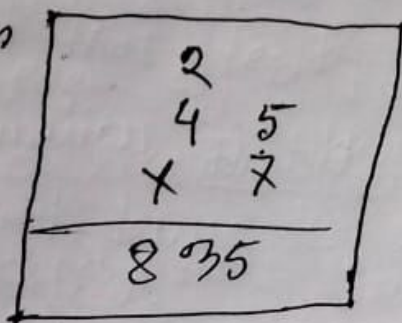
⇒ Sorting algorithm: In computer since, a sorting algorithm is an algorithm that puts elements of a list into an order. The most frequently used orders are numerical order and lexicographical order and either ascending or descending. A sorting algorithm is used to rearrange a given array or list of element according to a comparison operator on the elements. The comparison operator is used to decide the new order of elements in the respective data structure:

-1	0	1	2	4	8
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Array sorted in increasing order.

c) Mathematical Algorithm: An algorithm in math is a procedure a description of a set of steps that can be used to solve a mathematical computation. For example a step by step procedure used in long division is common example of a mathematical algorithm.

Algorithm



⇒ Graph Algorithm: Graph algorithms are a set of instructions that traverse a graph. Some algorithms are used to find a specific node or the path between two given nodes. An abstract way of representing connectivity using nodes and edges. We will label the nodes from 1 to n.

an edge. ~~We will label the nodes from~~ cannot some parts of nodes.

Nodes and edges can have some auxiliary information.

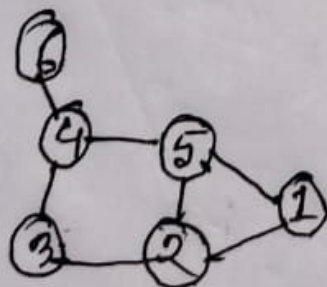


Fig : Graph Algorithm.