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algorithms are necessary for solving complex problems efficiently and effectively they help to automate processes and make them more reliable faster and easier to perform algorithms also enable computers to perform tasks that would be difficult or impossible for humans to do manually in computer science an algorithm is a set of steps for a computer program to accomplish a task algorithms put the science in computer science and finding good algorithms and knowing when to apply them will allow you to write interesting and important programs let s talk about a few famous algorithms what are algorithms and why should you care we ll start with an overview of algorithms and then discuss two games that you could use an algorithm to solve more efficiently the number guessing game and a route finding game in mathematics and computer science an algorithm ˈ æ l g ə r ɪ ð əm is a finite sequence of mathematically rigorous instructions typically used to solve a class of specific problems or to perform a computation algorithms are used as specifications for performing calculations and data processing an algorithm is a set of defined steps designed to perform a specific objective this can be a simple process such as a recipe to bake a cake or a complex series of operations used in machine learning to analyze large datasets and make predictions this course is an introduction to mathematical modeling of computational problems as well as common algorithms algorithmic paradigms and data structures used to solve these problems algorithm is a step by step procedure for solving a problem or accomplishing a task in the context of data structures and algorithms it is a set of well defined instructions for performing a specific computational task this course covers the essential information that every serious programmer needs to know about algorithms and data structures with emphasis on applications and scientific performance analysis of java implementations part i covers elementary data structures sorting and searching algorithms an algorithm is a procedure that takes in input follows a certain set of steps and then produces an output oftentimes the algorithm defines a desired relationship between the input and output for example if the problem that we are trying to solve is sorting a hand of cards the problem might be defined as follows problem sort the input learn to define algorithms express them in flow chart and pseudocode and assess their correctness and efficiency see how algorithms can be used as shortcuts to solve problems that cannot be solved in a reasonable amount of time and how this applies to undecidable problems and parallel and distributed computing an algorithm is a set of steps for solving a known problem most algorithms are implemented to run following the four steps below take an input access that input and make sure it s correct show the result terminate the stage where the algorithm stop running introduction to algorithms is a book on computer programming by thomas h cormen charles e leiserson ronald l rivest and clifford stein the book has been widely used as the textbook for algorithms courses at many universities 1 and is commonly cited as a reference for algorithms in published papers with over 10 000 citations documented the goal of this introductions to algorithms class is to teach you to solve computation problems and communicate that your solutions are correct and efficient models of computation data structures and algorithms are introduced instructor jason ku transcript download video download transcript an algorithm represents the thinking process for solving a problem in an abstract yet precise way rather than the answer itself it is important to keep in mind that an algorithm is not the same as a program or code it is the logic or plan for solving a problem represented as a simple step by step description algorithm courses develop your ability to articulate processes for solving problems and to implement those processes efficiently within software you ll learn to design algorithms for searching sorting and optimization and apply them to answer practical questions show all software development mobile and development it covers the common algorithms algorithmic paradigms and data structures used to solve these problems the course emphasizes the relationship between algorithms and programming and introduces basic performance measures and analysis techniques for these problems algorithm systematic procedure that produces in a finite number of steps the answer to a question or the solution of a problem the name derives from the latin translation algoritmi de numero indorum of the 9th century muslim mathematician al khwarizmi s arithmetic treatise al khwarizmi concerning the hindu art of reckoning introduction to algorithms uniquely combines rigor and comprehensiveness the book covers a broad range of algorithms in depth yet makes their design and analysis accessible to all levels of readers an algorithm is fundamentally a set of rules or defined procedures that is typically designed and used to solve a specific problem or a broad set of problems the meaning of algorithm is a procedure for solving a mathematical problem as of finding the greatest common divisor in a finite number of steps that frequently involves repetition of an operation broadly a step by step procedure for solving a problem or accomplishing some end

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algorithm is a step by step procedure for solving a problem or accomplishing a task in the context of data structures and algorithms it is a set of well defined instructions for performing a specific computational task

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an algorithm is a procedure that takes in input follows a certain set of steps and then produces an output oftentimes the algorithm defines a desired relationship between the input and output for example if the problem that we are trying to solve is sorting a hand of cards the problem might be defined as follows problem sort the input

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an algorithm is a set of steps for solving a known problem most algorithms are implemented to run following the four steps below take an input access that input and make sure it s correct show the result terminate the stage where the algorithm stop running

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introduction to algorithms is a book on computer programming by thomas h cormen charles e leiserson ronald l rivest and clifford stein the book has been widely used as the textbook for algorithms courses at many universities 1 and is commonly cited as a reference for algorithms in published papers with over 10 000 citations documented

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an algorithm represents the thinking process for solving a problem in an abstract yet precise way rather than the answer itself it is important to keep in mind that an algorithm is not the same as a program or code it is the logic or plan for solving a problem represented as a simple step by step description

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algorithm systematic procedure that produces in a finite number of steps the answer to a question or the solution of a problem the name derives from the latin translation algoritmi de numero indorum of the 9th century muslim mathematician al khwarizmi s arithmetic treatise al khwarizmi concerning the hindu art of reckoning

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