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Literacy in Computer Science

**lit·er·a·cy** – lĭt'ər-ə-sē - *noun* – A person’s knowledge of a particular subject or field. www.dictionary.com

Literacy, simply put, is the mastery of a basic set of necessary skills related to a particular subject. Typically, we speak of literacy in the context of reading and writing. But literacy goes well beyond simply the written word. Literacy can be applied and defined for a wide range of disciplines. Conversationally, the most common use of literacy outside reading and writing is “computer literacy”. Computer Literacy has come to mean a basic understanding and aptitude for using computers to perform common tasks necessary for business and learning.

“Computer Literacy” typically entails all of those skills which permit a user to successfully navigate a computer system and perform basic tasks like word processing, spreadsheet computations, surf the web and print documents. While this will suffice for most users, the definition of “Computer Science Literacy” runs a bit deeper.

We should first define Computer Science. Computer Science encompasses all of the theory and structure used to plan a computer program. Computer Science is typically thought of as simply programming, but it’s more than that, just as the study of Mathematics is deeper than the algebra problem at hand. Mathematics is the discipline that encompasses all forms of numerical analysis. Computer Science deals with the logic, analysis and construction of algorithms that best suit a particular task. Computer Science could easily be boiled down to “structured problem solving”.

To be literate in Computer Science, one must understand certain fundamental ideas and nomenclature of the discipline. This study of ideas is most commonly demonstrated through a particular programming language, but the programming verbiage is merely the vehicle. The logic behind such programming is the real jewel. In a similar way, we use words to convey deep thoughts on theology and philosophy, yet the subject matter remains the same regardless of the language in which it is delivered.

If computer science is so abstract, why bother to study computer science? Computer Science builds critical thinking skills, logical analysis, structured diagnosis through troubleshooting, and an appreciation for what is possible with technology. Being “computer literate” is not enough when you’re faced with a problem. You must be able to creatively attack the problem head-on, be able to impartially analyze every possible solution, and choose the best solution possible. By doing so, you empower yourself to be more productive and self-sufficient. This mindset can be applied to just about any situation and the outcome will most surely be positive.

To be literate in computer science is to be a critical thinker and be able to see through a problem to its root causes. Computer science empowers the student to meet challenges with an enthusiasm where others may see frustration.

Computer Literacy is the total sum of skills to *use* a computer program, Computer Science is the ability to design, create and streamline the program. Computer Literacy can be viewed as the ability to simply *drive* a car. Literacy in Computer Science is the ability to understand and design a better car.