Alt School Study Class Notes(WHAT IS COMPUTER SCIENCE)

Introduction to Computer Science

- What is Computer Science?
  - It's the study of problems, problem-solving, and the solutions that come out of the problem-solving process.
  - Computer science can be thought of as the study of algorithms.
  - Computer science is the study of problems that are and that are not computable, the study of the existence and the nonexistence of algorithms.

- What is an Algorithm?

  - a step-by-step list of instructions for solving any instance of the problem that might arise.

  - Algorithms are literally solutions.

  - Algorithms are finite processes that if followed will solve the problem.

      i.   For example, you are trying to boil a water, you know the steps that are needed to boil a water, yes that is the algorithm. There are a lot of ways to boil water so definitely there will be different algorithms to solve some particular problems.

Computer Science as a study of abstraction

- What does study of abstraction mean?
    - It means making a complex thing so simple that anybody can use it.
    - It's making non-technical people do what they want to do without them knowing it really happens, i.e make life soft for everybody.
    - Abstraction means displaying only essential information and hiding the details.
        - For example, not everyone knows how a cryptocurrency trade app works under the hood but with a good **USER INTERFACE** you have a BUY/SELL button and that's all you need.
    - Same in programming, we have **PROCEDURAL ABSTRACTION,** this means we really do not have to care about what goes on behind the things(functions, classes,Methods e.t.c) we write or call. For instance, not everyone knows what goes on behind the JavaScript splice() or pop() method.

NOTE: one of the responsibilities if not the main responsibility of Software Engineers(Frontend/Mobile Engineers especially) is to make technical things easily usable for non-technical people.

End.

I try to keep this short, so it won't get boring. KEY CONCEPT OF COMPUTER SCIENCE IS COMING TOMORROW.

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