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Virtues Needed by Software Engineers

It is important that engineers have virtuous character traits when it comes to their field of engineering in order for them to flourish as human beings. I will explain why different types of virtues are practically essential through my know field of engineering of computer science and software engineering.

However, to get a better understanding of virtues and how they relate to engineers, we must understand Aristotle's point of view of virtue which is the base of all virtue ethics today. He believed that as humans, we have a desire to achieve a well-lived life which he called eudaimonia, which is also known as "human flourishing." To have a well-lived life we must strive to be a better person in all aspects of our life and never settling down on the mentality that we are as good as we are going to get. Something is considered virtuous when it is seen as outstanding of its kind, also known as being arête. An example of this is knives; generally, a good knife is one that is sharp as opposed to being dull, thus the sharper the knifes the more virtuous it becomes.

However, human beings are not inanimate objects; we are living breathing social creatures and this makes it harder to clearly define what makes someone virtuous. Though Aristotle believed there was no need to be specific, we as humans were born with "the primitive beginning of character traits—the qualities that Aristotle calls natural virtues." Then as time passes and thorough our own judgment, we can decide what moral virtues we want to instill in ourselves through our observation of others being virtuous. This practical judgment and

reasoning of other's virtues come from our own intellectual virtues and give us the ability to evaluate if others are indeed virtues.

Software engineers, in this case, definitely require good practical judgment and other certain intellectual virtues. Techne is a virtue that means to have "knowledge of the skill of making". Software engineers, as the name implies, create and produce software of all kinds. In modern-day software development, there are many programming languages that are good for or even made for developing certain types of software. Depending on what you are developing, it is important for a software engineer to know which programming languages are best to use and how to utilize them effectively. With technology rapidly evolving as it does on the day to day basis, programming languages evolve and improve at the same rate. Virtuous software engineers should strive to keep themselves up-to-date on the latest improvements in the language that they develop. As well as keeping an eye out for new upcoming languages that have the potential to greatly affect the kind of software they create.

Another virtue that software engineers need to inject in themselves is episteme or having the ability to give explicit reasoning for their decisions. In the world of programming, when software engineers are asked to solve a problem by creating software to be its solution, there can be hundreds of ways do it. As mentioned before, knowing the ideal programming language to use can be important, but arguably what is more crucial is how one implements the language. Namely, how one approaches writing the code. This is where a software engineer's level of episteme becomes critical because it is more than likely that in the company they work for, they are going to develop the project in a team. If the engineer can't explain their reasoning behind coding their portion of the project a certain way, then how can the rest of the team be reassured that was the best way to implement that part?

This ties into the last virtue sophia; which is the is a combination of episteme and another virtue named nous that is “directed toward the highest and best end” which translates to software engineers to how efficient is the code they write. Though modern programming languages are a lot faster than their predecessors, the amount of data that software engineers have to manage has increased exponentially. This requires that programmers be able to create fast and effective algorithms that can traverse through large databases quickly to receive the data that’s needed or relevant.

By establishing these different vitreous, software engineers will be able to experience a well-lived life, in regards to their field of practice. As a consequence from the perspective of Aristotle and virtue ethics, software engineers will be able to flourish as human beings.

Citations

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