Green in Software Engineering: How Does it matters
(Learning oriented)
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Abstract:

Green Software Engineering targets for minimal environmental impact from the design, production, and use of computers, servers, monitors, printers, storage devices, and networking and communications systems. It aims on product and process efficiency, in terms of environmental sustainability, as well as applying IT to create energy-efficient, environmentally sustainable business processes and practices.

Most of researchers and studies focus on hardware-related measurement, analysis, and control for energy consumption. In fact, all the hardware devices are associated with software components to function. Even though the software applications don’t consume the energy directly, they affect hardware utilization, leading to indirect consumption of energy. Hence, it’s always important to create the energy efficient software applications. In past couple of years, the use of information technology (IT) has drastically increased, causing an increase in IT-related power consumption and resulting in higher carbon emission.

Besides, the theory of Green IT is getting importance in our society after the realization that conservation of energy can increase the sustainability of resources and help in improving the health of its inhabitants. Most of the companies are taking this as a serious issue while planning and managing IT infrastructure and Software Development.

In this paper, we mainly focus on Green IT, how its related to software engineering, steps to achieve green in software engineering to attain sustainability in all aspects of IT, rules for creating green code and building a two-level green software model that covers the sustainable life cycle of a software product and the software tools promoting green and environmentally sustainable software. This paper also provides insight on green methodologies which can be implemented at work place, as most of the IT companies are yet to acustom to green IT in all their business solutions.

References:


Other References: