



Green Computing

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Abstract: Green computing is a way of using the computer resource in an eco friendly while maintaining and decreasing the harmful environmental impact. Minimising toxic materials and reducing energy usage can also be used to recycle the product. Green computing refers to the conscious design, manufacturing, use and disposal of computers and related technologies in a way that reduces carbon emissions and energy consumption.

Introduction: Green Computing uses computers and other devices of computing and equipment in energy efficient and eco-friendly ways. It is the efficient and effective implementation of computers and IT resources in sustainable way so it is also known as sustainable computing or Green IT. It is used to maximize energy efficiency and minimize environmental impact in the ways computer chips, systems and software are designed and used.

Purpose of Green Computing: The purpose of green computing is to reduce the negative effects of technology on environment, optimizes power usage in IT operations, to reuse and recycle the hardware. Green computing support sustainable manufacturing.

The upgradation of Information technology systems can support by replacing older machines or hardware that consume more energy and produces more heat than newer technologies.

Importance: Green Computing reduces the consumption of energy. It helps in reducing cost of energy and also reducing carbon footprints of IT assets. It is a great method of cost saving.

IMPORTANCE OF GREEN COMPUTING



The Futuristic Minds

Importance of Green Computing

The 3 R's of Green Computing:

Green computing operates on the 3R model (Reduce, Reuse, and Recycle):

- **Reduce:** Minimizing energy consumption via power optimization, deployment of energy-efficient hardware, and virtualization practices
- **Reuse:** Extending technology product life through refurbishment, resale, and repurposing of hardware
- **Recycle:** Correct recycling of obsolete hardware to prevent the accumulation of e-waste and recover precious materials

Achieving Green Computing: To increase energy efficiency in data centers and IT facilities, various methods can be implemented:

Installing energy efficient environment systems.

Purchase of energy efficient servers, switches, laptops, desktop systems, printer and other IT equipment.

Turn off devices that are not in scheduled work.

Using printer cartridges which are refillable.

There are four main methods to implement the use of green computing, with each method of green computing remaining dynamic in order to be as effective as possible.

Green Use

This method of green computing seeks to reduce the amount of electricity consumed by computers and their sister devices in order to ensure they are used in an environmentally friendly way. For instance, a computer with a long-lasting battery won't need to be charged as often – meaning the computer won't require extensive amounts of electricity and ultimately become a more energy efficient, sustainable device.

Green Disposal

While it is important to manufacture devices to comply with green computing standards, it is also important that they can be disposed of safely – not only to prevent excessive waste, but in order to protect the environment from toxic substances such as ozone depleting substances. Green disposal can be done by either reworking the use of existing green computing equipment or by properly disposing of obsolete pieces of technology.

Green Design

Design isn't just for looks – but it can also help to improve the energy efficiency of a piece of technology, especially in green computing. Design teams should seek to rectify the design of green computing devices such as printers, projectors, or servers to ensure minimal energy consumption.

Green Manufacturing

Last but not least, green manufacturing is an imperative component of green computing – as ultimately, many of the emissions created by any company are produced as a result of mass production. Therefore, it is essential that companies handling the production of green computing

technologies seek ways to reduce their emissions whilst manufacturing their products.

Examples of Green Computing for Manufacturers:

Here are some real-life examples of green computing for manufacturers:

- Dell's use of recycled plastics in their computers and their commitment to closed-loop recycling initiatives.
- HP's focus on energy-efficient data center design and their efforts to reduce packaging materials.
- Lenovo's implementation of power-saving modes and their involvement in e-waste collection programs.

Conclusion: The concept of Green Computing is the efficient and effective implementation of computers and IT resources in sustainable way so it is also known as sustainable computing or Green IT. It is used to maximize energy efficiency and minimize environmental impact in the ways computer chips, systems and software are designed and used. It is based on 3 R's model of reduce, reuse and recycle.

