Green Software Development
Green software development. Code for sustainable future

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Introduction

In today's ever-evolving technological landscape, the concept of 'green software development' has emerged as a pivotal force in the tech industry. As we grapple with pressing environmental concerns and a growing need for sustainability, software development practices are no exception. Green software development represents a paradigm shift towards eco-conscious coding, energy efficiency, and the reduction of software's environmental impact. This presentation explores the principles and practices behind green software development, shedding light on how this innovative approach can help shape a more sustainable future for the tech world.

Definition:

Green software development is a sustainable approach that emphasizes eco-friendly coding practices, energy efficiency, and reduced environmental impact throughout the software development lifecycle. It involves optimizing code for minimal resource consumption, reducing energy usage, and minimizing carbon emissions associated with software operations.

Objectives:

- ❏ Make the audience aware of green software development's importance.
- ❏ Encourage eco-friendly coding and sustainable design.
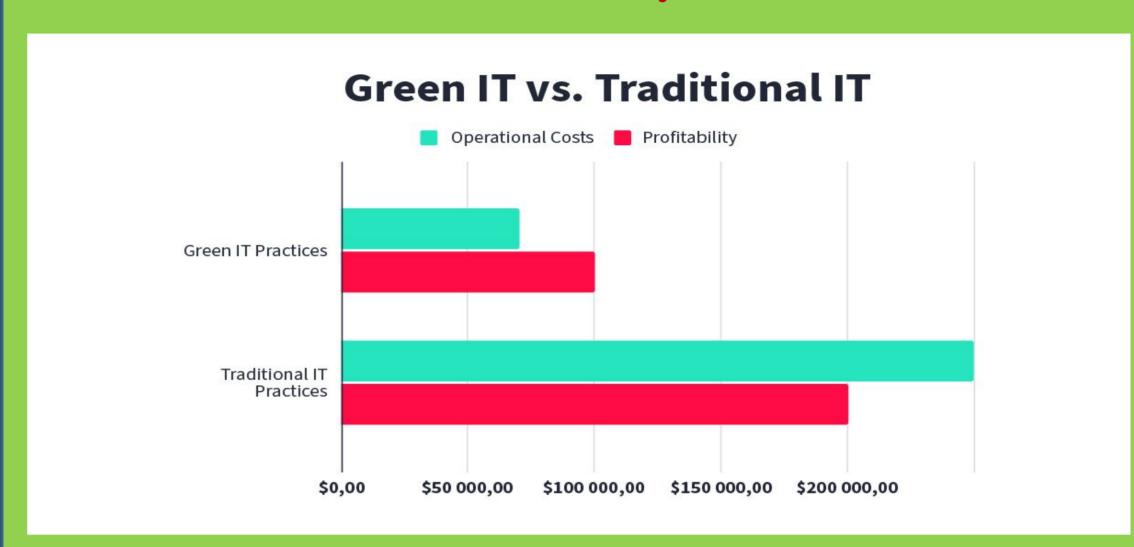- ❏ Emphasize cost savings, reputation and sustainability gains.

Challenges:

- Difficulty in accurately measuring environmental impact.
- Reluctance to adopt green practices.
- Potential disruptions due to system compatibility.
- Limited resources for green development.
- Insufficient industry awareness of green software practices.

Green Software Engineering Process

The green software development process involves optimizing code for energy efficiency, reducing resource consumption, and implementing sustainable design practices. This process aims to minimize the environmental impact of software throughout its lifecycle, from development to operation.

How is Green IT shaping the software development industry

Green IT vs. Traditional IT

Legend: ■ Operational Costs ■ Profitability

Green IT Practices
Traditional IT Practices

$0,00 $50 000,00 $100 000,00 $150 000,00 $200 000,00

Figure by Green Software Foundation

Potential Application Areas

- ➢ Data Centers
- ➢ IoT devices
- ➢ Smart Grids
- ➢ Renewable Energy
- ➢ Sustainable Agriculture
- ➢ Transportation
- ➢ Environmental Monitoring
- ➢ Energy Management

Conclusion

In conclusion, green software development is not just a choice but a responsibility in our era of environmental consciousness. By prioritizing eco-friendly coding practices, energy efficiency, and reduced environmental impact, we pave the way for a more sustainable tech industry.

Level 1: Green Software Engineering Process

Requirements → Design → Unit Testing → Implementation → Increment → System Testing

Business people, customers

Disposal ← Maintenance ← Usage ← Release of System ← Green Analysis

Life cycle Cost Indicators, Energy Impact GPIs, Organizational GPIs

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