Role of System Performance Optimize to increase the System Speed

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Abstract - *Systems performance analysis is an important skill for all computer users, whether you're trying to understand why your laptop is slow, or optimizing the performance of a large-scale production environment. It is the study of both operating system (kernel) and application performance, but can also lead to more specialized performance topics, for specific languages or applications. Performance within systems encompasses the set of roles, skills, activities, practices, tools, and deliverables applied at every phase of the systems development life cycle which ensures that a solution will be designed, implemented, and operationally supported to meet the performance requirements defined for the solution. Performance optimization is the improvement of system performance that is typically a computer system. The motivation for such activity is called a performance problem, which can be real or anticipated. Most systems will respond to increased load with some degree of decreasing performance. A system's ability to accept higher load is called scalability, and modifying a system to handle a higher load is synonymous to performance optimization. A performance problem may be identified by slow or unresponsive systems. This usually occurs because high system loading, causing some part of the system to reach a limit in its ability to respond. This limit within the system is referred to as a bottleneck*

Key Words: **Performance Engineering, Optimization Algorithms, System Performance, Performance Optimization, System Analysis**

1. INTRODUCTION

No matter how fast or shiny computers might be when they're new, they all seem to get slower over time. That state-of-the-art PC you bought last year might not feel like such a screamer after you install a dozen programs, load it with antispyware and antivirus tools, and download untold amounts of junk from the Internet. The slowdown might happen so gradually that you hardly notice it, until one day you're trying to open a program or file.

Many PC manufacturers pack new computers with programs you didn't order and might not want. These often include trial editions and limited-edition versions of programs that software companies hope you'll try, find useful, and then pay to upgrade to full versions or newer versions.

If you decide you don't want them, keeping the software on your computer might slow it down by using precious memory, disk space, and processing power. So for increasing the speed of computer we must delete the unnecessary files and programs which are not going to useful in future.

1.1 System & How to enhance it?

- A system provide a platform to a well-defined set of instructions that are used to perform a given tasks .it's can be an electronic device, which is used to execute a program/tasks.

- To promote the high performance of the system by increasing the speed clock of the CPU.

- The goal of system performance optimizer is to delete or clean the temp and prefetch directory which contain unusable files.

- Limit the running program which is not used for processing at start up time.

- This software will clean up your hard disk and shows the RAM utilization.

2. System Analysis

2.1 Introduction

In the system analysis phase, the purpose is to analyze the requirements of the system needed to fulfil the task of the proposed system. After the analysis of the existing system, the conclusion drawn contains the disadvantages and failures of the existing system; which are to be covered by the upcoming proposed application system.

The system analysis phase, and functional and non-functional specification of the system. This study completes the deep study of the properties of the new system, the area which is to be covered will, then, be helpful in designing the system according to the requirements.

2.2 Study of the system

As far as usage of the system is concerned, the users are divided into two categories

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2.2.1 Hardware Requirements

Table 1: Hardware Requirement

Processor	Intel core i3 or AMD Processor
RWM/RAM	2GB (minimum)
Processor Speed	2.0 GHz or more
Hard Disk	Above 80 GB

2.2.2 Software Requirements

Table 2: Software Requirements

Operating System	WinXP,Win7, Win8 & later
WINDOWS	Visual Studio
.NET	C#

3. Existing System & Its Disadvantage

In the past time when there is not any software for optimizing the performance of computer system, the newly system goes too degraded by unnecessary files folders that occupy space in the RAM during running time. It slows the processing speed of CPU that indicates to slow down the speed of computer. The users download and install the unnecessary program which is not going to be useful in future. Most of the users not know about the directory files and folders which contain temp files and cookies that are not going to be cleaned by user.

4. Proposed System & Its Advantage

Performance optimization is the improvement of system performance that is typically a computer system. The motivation for such activity is called a performance problem, which can be real or anticipated. Most systems will respond to increased load with some degree of decreasing performance. A system's ability to accept higher load is called scalability, and modifying a system to handle a higher load is synonymous to performance optimization.

A performance problem may be identified by slow or unresponsive systems. This usually occurs because high system loading, causing some part of the system to reach a limit in its ability to respond. This limit within the system is referred to as a bottleneck. This software is designed to promote the high performance of the system by increasing the speed clock of the CPU. The goal of system performance optimizer is to delete or clean the temp and prefetch directory which contain unusable files. Limit the running programs which are not used for processing at start up time.

4.1 Functional Requirements

4.1.1. Disk Clean

In this module user select the files which he/she want to delete from the drive.

4.1.2. Defragmentation

Fragmentation makes your hard disk do extra work that can slow down your computer. Disk Defragmenter rearranges fragmented data so your hard disk can work more efficiently. Disk Defragmenter runs on a schedule, but you can also defragment your hard disk manually.

4.1.3. Temp Cleaner

Any files If you don't want them, keeping these files on your computer might slow it down by using precious memory, disk space, and processing power you can clean it by removing it from your computer.

4.1.4. Prefetch Cleaner

Each time you turn on your computer, Windows keeps track of the way your computer starts and which programs you commonly open. Windows saves this information as a number of small files in the prefetch folder. The next time you turn on your computer, Windows refers to these files to help speed the start process. If you don't want any processes that occur during startup then clean the prefetch.

4.1.5. Visual Effect

If Windows is running slowly, you can speed it up by disabling some of its visual effects. It comes down to appearance versus performance. You can choose which visual effects to turn off, one by one, or you can let Windows choose for you. There are 20 visual effects you can control, such as the transparent glass look, the way menus open or close, and whether shadows are displayed.

4.1.6. Configuration

In communications or computer systems, a configuration is an arrangement of functional units according to their nature, number, and chief characteristics.

Often, configuration pertains to the choice of hardware, software, firmware, and documentation.

The configuration affects system function and performance.

4.1.7. System Services

It is possible that some of the services started in the background every time you log in, are not helping you with anything. Despite these are impairing you by consuming

your valuable memory resources to do nothing. Access you background services now, and alter them to help other (required) applications run smoothly.

4.1.8. Increase Aero peek speed

Adjust Aero Peek's Display Speed in Windows. Move your mouse over a taskbar application in Windows, or over the outline button in the lower-right corner, and previews show up in half a second. Customize that wait time, or disable it entirely, with a quick registry hack.

4.1.9. Increase Menu Speed

For some users, Windows can never go fast enough. There is always a tweak or Registry edit that can squeeze more speed and performance out of the operating system. We can simply speed up the display of menu items in Windows with a simple Registry edit.

4.1.10. Increase Taskbar Preview Speed

One of the cool new feature that in Windows is the new taskbar thumbnail preview, a place that displays small thumbnail preview of the opened application window on the taskbar when hovering the mouse over the taskbar icons.

4.1.11. Disabling Low Disk

If your all disk are full and there are low space available then appears a warning from Windows.Windows continually check your disk space that not depends on your disk space. If there is lot free space available in your disk then the checking process is running. So follow steps todisabling low disk checking and increase your Windows PC speed.

4.1.12. Disable Notification

Notification is automatically pop-ups on taskbar as some new notification and warnings.If you don't like this type of pop-ups then simply disable it.

4.1.13. Mouse Hover Time

Reduces popup delay time to show popup description faster when you move mouse cursor over an item.

5. Tools

5.1 Introduction to C#

The C# language is intended to be a simple, modern, general purpose, object oriented programming language. The language, and implementations thereof, should provide support for software engineering principles such as strong type checking, array bounds checking, detection of attempts

to use uninitialized variables, and automatic garbage collection. Software robustness, durability, and programmer productivity are important. The language is intended for use in developing software components suitable for deployment in distributed environments.

Portability is very important for source code and programmers, especially those already familiar with C and C++.Support for internationalization is very important. C# is intended to be suitable for writing applications for both hosted and embedded systems, ranging from the very large that use sophisticated operating systems, down to the very small having dedicated functions. Although C# applications are intended to be economical with regard to memory and processing power requirements, the language was not intended to compete directly on performance and size with C or assembly language.

5.2. NET Framework

.NET Framework (pronounced dot net) is a software framework developed by Microsoft that runs primarily on Microsoft Windows. It includes a large class library known as Framework Class Library (FCL) and provides language interoperability across several programming languages. Programs written for .NET Framework execute in a software environment known as Common Language Runtime (CLR), an application virtual machine that provides services such as security, memory management, and exception handling. FCL and CLR together constitute .NET Framework.

.NET Framework is intended to be used by most new applications created for the Windows platform. Microsoft also produces an integrated development environment largely for .NET software called Visual Studio.

5.3 Visual Studio

Microsoft Visual Studio is an integrated development environment (IDE) from Microsoft. It is used to develop computer programs for Microsoft Windows, as well as web sites, web applications and web services. Visual Studio uses Microsoft software development platforms such as Windows API, Windows Forms, Windows Presentation Foundation, Windows Store and Microsoft Silver light. It can produce both native code and managed code.

Visual Studio includes a code editor supporting IntelliSense (the code completion component) as well as code refactoring. The integrated debugger works both as a source level debugger and a machine level debugger.

6. Conclusion & Further Enhancement

This application is an System Performance Optimizer which helps users to increase performance of system and speed up the processing of system. This is a Graphical User interface, thus helping all type of users. The system designed is complete, concise, and with an easy-to-use interface. So far, testing results are fine with no deprecation. Implementing virus scanning with this optimizer. Implementing the speed up of browsing form internet.

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