

Clipboard Logger-For Windows Platform

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Abstract: *The Clipboard is temporary buffer holding data contents for cut-copy-paste operations. The built in Window Clipboard only allows for storage of one item at a time. Thus it allows for speedy access of such content. When we copy any content the previous content in the clipboard manager is get replaced with the new content. The default built in Windows clipboard has two very obvious limitations: it can store only one item at a time and it is cleared every time the computer restarts. Now we are going to overcome the above problem by maintaining the buffer. Whatever user copy data that copied data directly stored into the buffer and this buffer is located on the Hard disk. So there is no need to worry about lost of data. If you might be turn off system even though it is always present in the buffer.*

Keywords: Clipboard, Clips, Clipboard manager, Buffer, Copy-Cut-Paste, Logs

1. Introduction

The clipboard is a software facility used for short-term data storage and/or data transfer between applications or documents, via copy, cut and paste operations. It is most commonly a part of a GUI environment and is usually implemented as an anonymous, temporary data storage or buffer that can be accessed from most or all programs within the environment via defined programming interfaces or API. A typical application accesses clipboard functionality by mapping user input (key hookup, key listeners menu selections, etc.) to these interfaces.

The default Windows clipboard has very obvious *limitations*: Firstly it can store only one item at a time and secondly it is cleared every time the computer restarts. Clipboard replacement utilities will not only solve those problems, they will give you much more power over your clipboard.

Consider any programmer working in company writing code for any project. For many times it may be happen that programmer has to write similar codes. For that purpose he will copy required code lines and paste them. He will repeat it for another line. Now after some time if programmer wants same previously copied lines, he has to copy them again. This will reduce his code development efficiency by increasing time for writing code. Clipboard stores temporary data while operating system is running. During each shut down, the content of clipboard are cleared for maintaining efficiency of operating system. Due to this, the users are unable to collect information of previous copied data. Default Windows or LINUX clipboard does not have ability to copy multiple contents from multiple locations, to paste multiple contents at multiple locations, to keep track of copy-paste operations, to buffer data for longer time etc.

The problem can be solved by developing a clipboard manager, for Windows, which provides a buffer for large amount of data. A clipboard manager is a computer program that adds functionality to an operating system's clipboard. The clipboard manager allows the user to keep multiple clipped objects, available for later use. It can also keep a clipping history by automatically making a new entry in their respective buffer for each new cut or copy operation.

Hence user can cut-copy-paste many contents, can take account of history and can have more paste options. While developing clipboard manager we have to take care of some requirements. A clipboard manager should be simple to setup and use. It should work as intended right out of the box, without any tweaks. While adding functionality to operating system's clipboard, clipboard manager can handle everything the default OS clipboard can handle and should be light on resources and fully compatible with the latest versions of OS. Also it must provide extra features for advanced users who need more options than simply copy, cut and paste.

Hence development of a new clipboard manager is needed for many users to support different operations. Clipboard managers enhance the basic functions of cut, copy, and paste operations with one or more of the following features:

- Maintain the all copy data into a respective buffer.
- Maintain the Logs of copied data the log contain user name, date & time, path, application name etc.
- Session Id Creation for each login user
- Permanent storage for copy data
- Need not worry about lost of data because data is located on hard disk
- Searching of saved data (search tab)

2. Literature Review

There are so many Limitations of standard Clipboard each Operating system have their own built in Clipboard to eradicate the limitations of standard operating system provided Clipboard we need to extends the functionality of standard clipboard manager my developer are underwent for development of simple, reliable and Consistent Clipboard

As stated by Windows [8], the Clipboard is a temporary buffer holding data contents for cut-copy-paste operations. You can select text or graphics and then use the Cut or Copy commands to move your selection to the Clipboard, where it will be stored until you use the Paste command to insert it elsewhere. For example, you might want to copy a section of text from a website, and then paste that text into an e-mail message. The Clipboard is available in most Windows programs. A clipboard is special file or memory area

(buffer) where data is stored temporarily before being copied to another location. Many word processors, for example, use a clipboard for cutting and pasting. When you cut a block of text, or copy the block of text the movable memory is created the job of memory creation is done through kernel then word processor copies the block to the clipboard actually the data is not copy their handle is copied on the clipboard handle means address of data and the address is hide from everyone; when you paste the block, the word processor copies it from the clipboard to its final destination. And Lock memory get unlock. In Microsoft Windows and the Apple Macintosh operating system, the Clipboard (with a capital C) can be used to copy data from one application to another.

The term "cut and paste" comes from the traditional practice in manuscript-editing's whereby people would literally cut paragraphs from a page with scissors and physically paste them onto another page. This practice remained standard into the 1980s. [11].

The act of copying/transferring text from one part of a computer-based document ("buffer") to a different location within the same or different computer-based document was a part of the earliest on-line computer editors. As soon as computer data entry moved from punch-cards to online files (in the mid/late 1960s) there were "commands" for accomplishing this operation. This mechanism was often used to transfer frequently-used commands or text snippets from additional buffers into the document, as was the case with the QED editor [9].

The earliest editors, since they were designed for "hard-copy" terminals, by using keyboard commands to contiguous area of text, remove such area, or move them to some other location in the file, documents and applications. Since moving a area of text required first removing it from its initial location and then inserting it into its new location various schemes had to be invented to allow for this multi-step process to be specified by the user [11].

Often this was done by the provision of a 'move' command, but some text editors required that the text be first put into some temporary location for later retrieval/placement. In 1983, the Apple Lisa became the first text editing system to call that temporary location "the clipboard" [11].

There are so many Clipboard Software has been developed by developer following are the clipboard software available for Linux, Windows & Mac OS

- (1) *AceClipboard* [11] for Windows OS. It is Freeware and whenever you copy or cut the clip appear in Ace
- (2) *ArchiveClipboard* [11]for windows,Mac OS, Linux. It is also freeware it support Cloud functionality you can copy and paste the data is stored on clouds you can access data from anywhere do not need to worry about lost of data
- (3) *ClipboardMagic* [11] for Windows provide copying & pasting plain text
- (4) *ClipX* [11]For Windows OS is a tiny Clipboard history manager.
- (5) *ClipboardViewer* show you copied data path only

3. Proposed Work

The Clipboard is a temporary storage area for information that you have copied or moved from one place and plan to use somewhere else. You can select text or graphics and then use the Cut or Copy commands to move your selection to the Clipboard, where it will be stored until you use the Paste command to insert it elsewhere. As described above, we have seen some clipboard software each one are having their own advantage and disadvantage. As I did study of all Clipboard software each one is suffer from some problems. I noticed this problem and developing my own utility which provide better and extended functionality for user.

This utility is going to eradicate the limitations, as described above, by providing buffer for copying data. Whatever the user copy that copied data is stored into a buffer with additional features such as built-in text editor, additional information about the clip *date & time, origin, application name, path, user name*, launch actions such as searching of saved data . Whenever you want to, you can retrieve any data once copied, be that last hour, last week or last month. You can able to restore lost data which is always present in the buffer. Whenever user go for pasting the data clipboard logger will show you all copied files which is stored in their respective buffer. So user wants to select the file from respective buffer space which he/she want to paste. Simultaneously it maintains the Logs of copied & pasted data.

4. Conclusion

As detailed in the previous sections, we have seen that the standard clipboard of Windows Platform has *limitations*: firstly it can store only one item and secondly it is cleared every time the computer restarts. My utility is going to eradicate the above limitations by providing buffer for copying data. Whatever the user copy that copied data is stored into a buffer and which located on hard disk so no need to worry about lost of data. These functionalities can be extended so that user can be provided with such interface by using which he can save time and efficiency. This can be done by developing a clipboard logger which fulfills user requirements with easy interface. In above sections, many clipboard managers and their functionalities are discussed.

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