"Clipboard Manager"

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Abstract - *The most important characteristic of a clipboard manager is its ability to save time. Clipboard managers allow users to store a history of previously copied content such as text, files, Rigid and images—whereas the built in Windows Clipboard only allows for storage of one item at a time—thus allowing for speedy access of such content. This comes in especially handy when carrying out repetitive data entry tasks such as entering repeat formula as well as storing images in a database for further processing. Other uses include storing common sections of code (for programmers) and storing online form information. Some of us routinely carry out such repetitive tasks given our professions, habits or hobbies and the ability to cut down on the monotony of switching back and forth between desired content is a valuable asset. Users can choose exactly how many clips they want to be stored in the history. There is a choice of how many clips are stored by being made immediately available on the popup menu and, how many are stored out of sight but still remain in the program cache. This is useful as not all of the clips need to be immediately available for pasting and can be adjusted based on the habits of users. Users can also make certain clips permanently available and store them in different groups. Basic cut and paste gets the job done, but if you're going for speed and efficiency, you'll need a clipboard manger to keep your copy-full strong. Keeping all the most frequently used text snippets in the Windows clipboard does make sense.*

Key Words: *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 documents or applications, via copy and paste operations. It is most commonly a part of a GUI environment and is usually implemented as an anonymous, temporary data buffer that can be accessed from most or all programs within the environment via defined programming interfaces. A typical application accesses clipboard functionality by mapping user input (key bindings, menu selections, etc.) to these interfaces.

The default 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. Clipboard replacement utilities will not only solve those problems, they will give you much more power over your clipboard.

These utilities provide a clipboard history and they come with additional features such as built-in text editor, additional information about the clip (date & time, origin, user name), launch actions (such as Google search) and more.

Because they replace such a basic system function, clipboard managers have to be simple to use, but that depends on how you use your computer. There is no one-size-fits-all when it comes to clipboard managers, so I suggest you try some of those freeware products for yourself and find the one that suits you the best.

Here I came up with a list of specifications to evaluate clipboard managers:

- **Simple:** Easy to setup and use. It should work as intended right out of the box, without any tweaks.

- **Reliable:** It can handle everything the default Windows clipboard can handle. It should be light on resources and fully compatible with the latest versions of Windows.

- **Accessible:** Easy to use with cursor-only, keyboard-only or a mix of both. It also needs a nice and clear interface.

- **Powerful and customizable:** Provide extra features for advanced users who need more options than simply copy, cut and paste.

2. Methodology:

Modern GUIs often provide a clipboard manager which supports multiple cut and paste transactions. In this model the clipboard is treated as a stack or scrap book, with new cuts and copies being placed on top of the list of recent transactions. The standard paste operation copies the most recent transaction, while specialized pastes provide access to the other stored transactions. These managers generally also provide a window that displays the transaction history

and allows the user to select earlier copies, edit them, change their format and even search amongst them.

In Windows Clipboard Utility like Clip diary in which it maintain the history of copied files and when user want to paste any files from diary of the copied files firstly you need to open the diary by pressing the key ctrl+D then it will show you all copied files.

So here I am going to overcome this limitations by providing Buffer for copy data whatever the user copied data it stored into a buffer with additional features such as built-in text editor, additional information about the clip(date & time, origin, user name), launch actions (such as
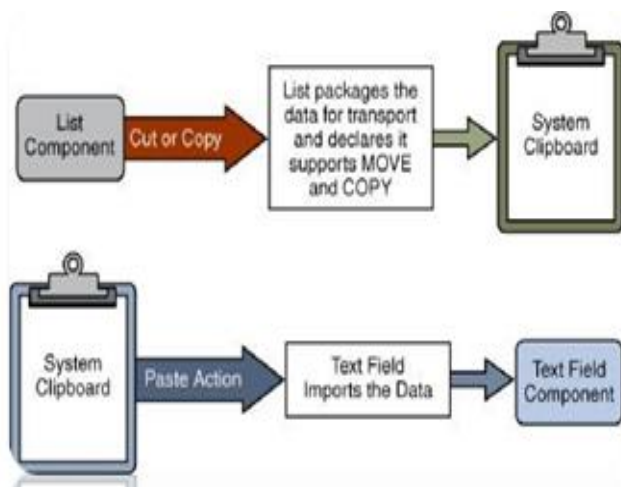

Fig 1.1 clipboard operations

3. Literature Survey:

In human-computer interaction, cut and paste and copy and paste are related commands that offer a user-interface interaction technique for transferring text, data, files or objects from a source to a destination. Most ubiquitously, users require the ability to cut and paste sections of plain text. The cut command removes the selected data from its original position, while the copy command creates a duplicate; in both cases the selected data is placed in a clipboard. The data in the clipboard is later inserted in the position where the paste command is issued.

This interaction technique has close associations with related techniques in graphical user interfaces that use pointing devices such as a computer mouse (by drag and drop, for example).The capability to replicate information with ease, changing it between contexts and applications, involves privacy concerns because of the risks of disclosure when handling sensitive information Terms like cloning, copy forward, carry forward, or re-use refer to the dissemination of such information through documents, and may be subject to regulation by administrative bodies

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. Stationery stores formerly sold "editing scissors" with blades long enough to cut

An 8½"-wide page. The advent of photocopiers made the practice easier and more flexible.

The act of copying/transferring text from one part of a computer-based document ("buffer") to a different location within the same or different

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 QEDeditor.

The earliest editors, since they were designed for "hardcopy" terminal, provided keyboard commands copy "Terminals, provided keyboard commands to delineate contiguous regions of text, remove such regions, or move them to some other location in the file. Since moving a region 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.

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".

4. Data Extraction Process by using Clipboard:

The below figure defines stages required for extracting data.

- First, clipboard can identify the relevant functions.

- Secondly, by according to its functions data can be extracted from those functions.

- Then data retrieved is classified in different formats and if the required format is found in the clipboard then it is appended.

- Finally the identified data is extracted and used depending on applications.

5. Implementation:

Using above classes and methods the data can be obtained from the clipboard. [1] The below algorithm can be used as the basic layout for the working of extraction. Clipboard c; c=getSystemClipboard (); if (Data Flavor is Available) Get data (Data Flavor);

e.g.

Clipboard c;
    StringSelectioncnt= new String Selection ("Data");

6. Analysis of problem:

Clipboard has very obvious different issues [3] firstly it store one item at a time on clipboard memory if you had copy another item it overwritten on previous item.

- If you turn off or rest art the system it clears memory every time if in case you want previous copied contents you will be miss that contents.

- Clipboard is a temporary storage [3] area for information that enables applications to transfer data or moved one place and plan to use somewhere else.

- You can select text, graphics or anything and then use the cut or copy commands to move your selection to the clipboard whatever information is copy is store on the clipboard memory, where it will be stored until you use the paste command to insert elsewhere.

- If you had copy another item it overwritten on previous item.

7. Features

Features of Clipboard

- Multiple buffers and ability to combine split and run their contents.

- Choosing which buffer "cut or copy operations should store data in".

- Clipboard can save different types of data like handling formatted text tabular data, data objects media contents and URLs searching of saved data.

- Choosing which buffer (s) "paste "operations.

- Permanent storage for copy data.

- Need not concern about loss of data because data is located on hard disk.

8. Limitations of Clipboard:

Copy operation does not copy all sub-folders when undertaking very large partitions, of 400 GB or more. Firstly it can store only one item at a time.

- Secondly it is erased every time the computer restarts.

- Clipboard saves temporary data while operating system is running. After that each shut down process, the content of clipboard are removed for maintaining efficiency of operating system.so that, the users are unable to retrieve data of preceding copied data.

- Windows clipboard cannot be used to process text that contains null character.

9. Existing work:

- Clipboard has the mechanism of share the information between the applications.[1]

- It first seemed in Windows 3.1, after that working has greatly increased.

- After that copying more complex data than text to the clipboard, Windows varieties available several APIs which make extraction much more difficult.

- Dynamic data exchange (DDE) is very useful method for extracting the data.

- In 1990, Microsoft windows released object linking and embedding (OLE) enabling compound files. Compound files have most of the file in primary format (for e.g. a Microsoft Word 2.2 Clipboard classes and Methods: While there is a large amount of documentation on how to use and access the windows clipboard via application program interfaces (APIs), [1] there is document on the methods used other than APIs. Extending classes like Clipboard we can access the data stored in the clipboard using its different methods like as:

- GetSystemClipboard () is called to retrieve the pointer to the clipboard data. This provides handle to the or during drag and drop operation.

- Flavor Listeners () may be registered on an instance of the Clipboard properties.

- The Toolkit ass is the main class which is use to get the system clipboard.

- A Data Flavor () provides Meta information about data. Data Flavors is typically used to flavors are classified those depending on file formats.

- Data Flavor Available method is method to check whether the data flavor of the data in the clipboard is in the list of valid data flavors.

- Logger and clipboard manager which fulfils user requirements with easy interface.

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