

GRABBER

From Screen to Clipboard

ABSTRACT

GRABBER is an application software program that can perform text extraction from the region of the screen selected by the user and copy the text content extracted to the clipboard, ready to get pasted. The additional functions offered by GRABBER includes taking screenshot of the desired region of the screen and save it, allow user to view the taken screenshot, improve the resolution and clarity of the screenshot taken, extract text from the desired region specified by the user, making a txt file containing the text part in the portion of the screen selected by the user, allowing the user a platform for viewing editing the previously mentioned text file and providing options for the user to convert and save the text file or the image file in pdf format.

INTRODUCTION

In day-to-day life, people working on computers often find themselves in situations where significant information is displayed on their screen and they have to use the hard way of memorizing and typing down the information onto some text editing software and then elect and copy it from there to the required fields. GRABBER is a software program which helps reduce the workload and stress in such types of situations especially.

GRABBER can grab text data from almost everywhere on the screen and internally copies the contained data onto the clipboard instantly. Thus, the user only has to select the region where the relevant data is present, and use the paste option (or use ctrl+v) at the area where the data wants to be pasted.

GRABBER also includes the options to enhance the resolution and clarity of the taken screenshot, and to save the screenshot automatically. There is an option which allows the user to view the enhanced image in the local image viewer. The program allows the user to make modifications in the extracted text, and to option the text in a text editing platform. A text file containing the extracted text data is also created.

The PDF option performs the conversion of the selected portion of the screen to pdf format.

LITERATURE SURVEY

There has been several tools and softwares which are able to perform tasks such as taking screenshot, enhancing the resolution of images, extracting text from images, converting images and text files into pdf format etc. Usually, these functions are performed by mutually independent softwares. The software products which exhibit combination of these functions are generally rare and explicit.

[1] SNIPPING TOOL : The software commonly seen in windows operating systems is an efficient tool for taking and saving screenshots.

[2] ADOBE PHOTOSHOP : This adobe product is a high level photo editing software. It contains tools which can successfully enhance the resolution of images.

[3] VIETOCR : This is a software which performs image to text conversion.

[4] SODA PDF : This is a web application that can convert images and text files into pdf format.

OBJECTIVES

The main objectives of this program is to

- 1) Automatically copies the text data present in the region of screen selected by the user (including text extraction from images) to the clipboard, ready to paste.
- 2) Take screenshots of the desired region of the screen and save it.
- 3) Allow the user to view the taken screenshot.
- 4) Improve the resolution and clarity of the screenshot taken.
- 5) Extract text from the desired region specified by the user.
- 6) Make a txt file containing the text part in the portion of the screen selected by the user.
- 7) Allow the user a platform for viewing and editing the previously mentioned text file.
- 8) Providing options for the user to convert and save the text file or the image file in pdf format.

LIBRARIES USED

- ☐ pyautogui
- ☐ tkinter
- ☐ pytesseract
- ☐ pynput
- ☐ time
- ☐ pandas
- ☐ PILLOW
- ☐ subprocess
- ☐ fpdf

HYPOTHESIS AND METHODOLOGY

GRABBER can automatically extract and copy the text content of the selected region of screen to the clipboard. The user just has to click on "Grab it.." button, and select the portion of the screen from which the text data is to be extracted. Then press ctrl+v (or right click and paste option) at the position where the text data is to be pasted.

When the "Grab it.." option of grabber is clicked by the user, the program waits for the user to perform the preceding two clicks. Grabber calculates the coordinate positions of the two mouse clicks using the tkinter library. With the help of pyautogui library, the screenshot of the selected portion of the screen is captured.

The captured screenshot may sometimes be having low resolution. This may result in the production of low accuracy text extractions. For minimising this problem, the program automatically converts the low resolution images into higher resolution.

After applying the resolution enhancement function, the captured screenshot is saved in jpeg image format.

On clicking the "VIEW" button, the saved screenshot is opened in the local image viewer for the user to inspect.

By utilizing the tools in pytesseract library, the text portion contained in the taken screenshot is extracted with satisfying accuracy, upon pressing down on the "EDIT" button. This extracted text is written into a text file and is saved in .txt file format. Clicking on "EDIT" button allows the user to view and make edits to the text file in text editing application.

Currently, the last button in GRABBER 1.0 is the "PDF" button. This option allows the user to convert and save the screenshot in .pdf format. The conversion to pdf format is performed due to the presence of fpdf library.

REFERENCES

- [1] - <https://support.microsoft.com/help/13776>
- [2] - <https://www.photoshop.com/about>
- [3] - <https://sourceforge.net/projects/vietocr/>
- [4] - <https://www.sodapdf.com/>