WEBSITE BLOCKER

A MINI PROJECT REPORT

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BONAFIDE CERTIFICATE

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ABSTRACT

Website Blocker is a tool that denies access to websites temporarily or permanently. To use the internet safely the user can block all websites of all unwanted categories. The objective of Website Blocker is to block the given websites from any device . This project will help the user to stay away from their distraction by blocking websites from their device so that they can not open them. In this Python Website Blocker Project, the user can enter multiple websites to block, and then clicking on the block button the condition will be checked that if the website already blocked. if yes print 'already blocked' else blocked all that websites and print 'blocked'.If the user wants to unblock that website, by clicking on the unblock button.This application can be used to block the websites so that the user can not open them during the specific period. The local host of the computer is being used to block those unwanted websites.

CHAPTER 1

INTRODUCTION

1.1 INTRODUCTION

Network security is a broad term that covers a multitude of technologies, devices and processes. In its simplest term, it is a set of rules and configurations designed to protect the integrity, confidentiality and accessibility of computer networks and data using both software and hardware technologies. Every organization, regardless of size, industry or infrastructure, requires a degree of network security solutions in place to protect it from the ever-growing landscape of cyber threats in the wild today.

Today's network architecture is complex and is faced with a threat environment that is always changing and attackers that are always trying to find and exploit vulnerabilities. These vulnerabilities can exist in a broad number of areas, including devices, data, applications, users and locations. For this reason, there are many network security management tools and applications in use today that address individual threats and exploits and also regulatory non-compliance. When just a few minutes of downtime can cause widespread disruption and massive damage to an organization's bottom line and reputation, it is essential that these protection measures are in place.

There are many layers to consider when addressing network security across an organization. Attacks can happen at any layer in the network security layers model, so your network security hardware, software and policies must be designed to address each area.Network security typically consists of three different controls: physical, technical and administrative. Here is a brief description of the different types of network security and how each control works.

The internet is full of information that can helps to work more effectively. Unfortunately, instant access to such an overwhelming amount of content can also backfire. What starts as a quick jaunt to your social media feed or favorite website ends with dozens of open tabs – and hours of wasted productivity.

Even with extraordinary discipline, it's easy to fall prey to these distractions. It's far too easy to open laptop, pull up a project you need to work on, and then completely lose track of the responsibilities after seeing a notification from a friend. There's so much content out there begging ones attention, and it's tough not to give in.

Due these distractions, in big IT companies some couple of websites are blocked especially social networking sites like facebook, youtube, Instagram etc.Instead of using third-party applications to blocks certain website, one can develop their own custom application which will block websites of thier choice.

The website blocker is a tools that can help to overcome the temptation of distracting and addictive tech. Instead of forcing you to rely on willpower alone, these tools cut off access to your biggest distraction sources.

The website blocker denies access to the specific IP address of the client. The blocking doesn't mean the website will not operate. The reality is that the website will continue its posts and functions normally. The difference can be seen by the user only. The content or page of the website will not show to the user anymore.

Every system have host file whether it is Mac, Windows or Linux.

- Host file in Mac and Linux :/etc/hosts
- Host file in Windows:C:\Windows\System32\drivers\source
- Host file is which manages all the request from the device to the server.
- Host is an operating system file which maps hostnames to IP addresses.

this program will map the hostnames of websites to the localhost address. Using python file handling manipulation the hostname is written the in hosts.txt The host file in windows will be presented in the THIS PC, LOCAL DISK C, SYSTEM 32, DRIVERS,ETC. inside the etc folder,an file called host will be visible.Open that file as "RUN AS ADMINISTRATOR".

The websites are blocked by passing the websites to the host file. The host file stores the websites IP addresses at the time of blocking. After the unblocking process is over those websites in the host file is deleted using the truncate method.

CHAPTER 2

SYSTEM ANALYSIS

2.1 EXISTING SYSTEM:

LEECHBLOCK:

This is a website blocking application.This browser add-on has been blocking distracting websites for over a decade.LeechBlock NG (Next Generation) is a simple free productivity tool designed to block those time-wasting sites that can drain the life out of the working day.

One of the first things that is to be noticed is that its extensive versatility and customization options. Users create groups of websites LeechBlock will restrict.

DISADVANTAGES:

- Starting with Firefox version 57 , only extensions built with the WebExtensions framework are compatible.
- This led the LeechBlock developer to rewrite the extension from scratch, releasing a new version called LeechBlock NG
- The software is still under development, so there could be bugs, and not all the features of the old extension are included.

SELFCONTROL:

This website blocker is only officially available for macOS, but the charm is all in it's simplicity and minimalist design. Rather than use extensions, SelfControl blocks websites using the hosts file. In effect, this means that the block is system-wide

A very simple and minimalist design makes it easy to use.A system-level block ensures that the block will work with all browsers. Unless, the useage something like TOR.

DISADVANTAGES:

- User will be able to get around the block by changing the time or restarting your computer.
- Any advanced functionality is not available
- Generally,it is available for macOS, nothing else

2.2PROPOSED SYSTEM:

The website blocker is real world program which blocks certain distracting website like Facebook, Youtube etc during the work hours.Website blockers are software programs that are used to block any distracting websites on the internet and prevent from accessing them.

They are most widely used as browser extensions that "Blocks" websites,so that the results of those websites cannot be viewed. To block the websites, mapping of desired websites to the localhost address and add that to the hosts file. Similarly, to unblock the website, we will remove that line from the hosts file.

ADVANTAGES:

- This proposed system can work on any operating system
- There has no time limit, so the user can unblock the website whenever the user wants.
- The proposed system more relaible and flexible.
- As it maps the website address to the host file, it will provide an instantly faster result
- As this system is coded with python, it is robust

CHAPTER 3

SYSTEM SPECIFICATIONS

3.1 HARDWARE CONFIGURATION:

Processor : Pentium IV

Hard disk capacity. : 40 GB

Monitor. : 21 “Samtron Monitor”

Internal memory capacity : 128 MB

Keyboard : Logitech of 104 Keys

Cpu clock. : 1.08 GHZ

Mouse : Logitech Mouse 3.2

3.2 SOFTWARE CONFIGURATION:

Operating system : WINDOWS 10

Front end : Python 3.8.3

CHAPTER 4

SOFTWARE DISCRIPTION

PYTHON:

Python is a high-level, interpreted, general-purpose programming language. Its design philosophy emphasizes code readability with the use of significant indentation.Python is dynamically-typed and garbage-collected. It supports multiple programming paradigms, including structured (particularly procedural), object-oriented and functional programming. It is often described as a “batteries included” language due to its comprehensive standard library

Guido van Rossum began working on Python in the late 1980s as a successor to the ABC programming language and first released it in 1991 as Python 0.9.0. Python 2.0 was released in 2000 and introduced new features such as list comprehensions, cycle-detecting garbage collection, reference counting, and Unicode support. Python 3.0, released in 2008, was a major revision that is not completely backward-compatible with earlier versions. Python 2 was discontinued with version 2.7.18 in 2020.Python consistently ranks as one of the most popular programming languages

Python is a multi-paradigm programming language. Object-oriented programming and structured programming are fully supported, and many of its features support functional programming and aspect-oriented programming (including metaprogramming. Many other paradigms are supported via extensions, including design by contract and logic

programming.

Python uses dynamic typing and a combination of reference counting and a cycle-detecting garbage collector for memory management. It uses dynamic name resolution (late binding), which binds method and variable names during program execution.

Its core philosophy is summarized in the document The Zen of Python (PEP 20), which includes aphorisms such as:

- Beautiful is better than ugly.
- Explicit is better than implicit.
- Simple is better than complex.
- Complex is better than complicated.
- Readability counts.

Rather than building all of its functionality into its core, Python was designed to be highly extensible via modules. This compact modularity has made it particularly popular as a means of adding programmable interfaces to existing applications. Van Rossum's vision of a small core language with a large standard library and easily extensible interpreter stemmed from his frustrations with ABC, which espoused the opposite approach.Python strives for a simpler, less-cluttered syntax and grammar while giving developers a choice in their coding methodology. In contrast to Perl's "there is more than one way to do it" motto, Python embraces a "there should be one—and preferably only one—obvious way to do it" philosophy.

Alex Martelli, a Fellow at the Python Software Foundation and Python book author, wrote: “To describe something as ‘clever’ is not considered a compliment in the Python culture.”Python’s developers strive to avoid premature optimization and reject patches to non-critical parts of the CPython reference implementation that would offer marginal increases in speed at the cost of clarity.When speed is important, a Python programmer can move time-critical functions to extension modules written in languages such as C; or use PyPy, a just-in-time compiler. Cython is also available, which translates a Python script into C and makes direct C-level API calls into the Python interpreter.

Python’s developers aim for it to be fun to use. This is reflected in its name—a tribute to the British comedy group Monty Python.and in occasionally playful approaches to tutorials and reference materials, such as examples that refer to spam and eggs (a reference to a Monty Python sketch) instead of the standard foo and bar.

A common neologism in the Python community is pythonic, which has a wide range of meanings related to program style. “Pythonic” code may use Python idioms well, be natural or show fluency in the language, or conform with Python’s minimalist philosophy and emphasis on readability. Code that is difficult to understand or reads like a rough transcription from another programming language is called unpythonic.

"

WINDOWS 10 OPERATING SYSTEM:

Windows 10 is a computer operating system by Microsoft. It is part of the Microsoft Windows family of operating systems. It was known as Threshold when it was being developed. Windows 10 was announced at a press event on 30 September 2014. It came out for personal computers on 29 July 2015. Beginning on that day, Windows 10 was available as a free upgrade for users who had Windows 7 or Windows 8.1. Microsoft ended mainstream support for Windows 10 on October 13, 2020 and will end extended support on October 14, 2025.

These include desktop, laptop, and all-in-one PCs, tablet computers, smartphones, and embedded systems such as the Xbox game console. This allows each type of system to run similar programs with greater ease.

Unlike earlier versions of Windows, Windows 10 is regularly updated with new features based on user feedback, including before it was first released. This is a part of a model of delivery known as software as a service. Every half a year, Microsoft releases updates with new features. Each release has a four-digit build number (a type of version number). The first two digits refer to the year of release, and the other two digits refer to the month of release (e.g. “1903” refers to a build released in March 2019).

It is a mix of Windows 8's Start Screen with Live Tiles and Windows 7. Basically, combines both into one. This was done due to criticism of Windows 8’s removal of the Start Menu. This feature allows users to ‘create’ multiple desktops in Windows. This feature was first available for

Ubuntu and OS X.

Used on multi-mode (convertible) devices like Microsoft's Surface Pro 3. When a user detaches the keyboard, it changes into a touch-friendly mode and the reverse happens when it is reattached.A personal digital voice assistance that was first released on Windows Phone 8.1.DirectX updated to version 12. Allows games to run faster in some cases.

Windows 10 has many versions for different uses, that have different features.[1]

- Windows 10 Home is meant for home use.
- It can be used on desktop, laptop, tablet, and 2-in-1 (mix of tablet and laptop) computers.
- Windows 10 Pro is meant more for businesses.
- It adds features on top of Windows 10 Home and is meant for advanced users.
- Windows 10 Pro for Workstations is similar to Windows 10 Pro but is meant for workstation use. It allows more Central processing units to be used at a time.
- Windows 10 Enterprise is meant for use in IT. It adds features on top of Windows 10 Pro.
- Windows 10 Education is meant for use in schools, colleges and universities. It is the same as Windows 10 Enterprise, but it doesn't include Cortana.
- Windows 10 Mobile, which has now been discontinued, was meant for mobile devices

CHAPTER 5

MODULE DISCRIPTION

The modules in this system performs an specified tasks that are described in them.This system has totally 3 modules. They are

- THE TKINTER.MODULE
- BLOCKER MODULE
- UNBLOCK MODULE

5.1 TKINTER MODULE:

Tkinter is a Python binding to the Tk GUI toolkit. It is the standard Python interface to the Tk GUI toolkit,[1] and is Python's de facto standard GUI.[2] Tkinter is included with standard GNU/Linux, Microsoft Windows and macOS installs of Python.The name Tkinter comes from Tk interface. Tkinter was written by Steen Lumholt and Guido van Rossum,[3] then later revised by Fredrik Lundh.

As with most other modern Tk bindings, Tkinter is implemented as a Python wrapper around a complete Tcl interpreter embedded in the Python interpreter. Tkinter calls are translated into Tcl commands, which are fed to this embedded interpreter, thus making it possible to mix Python and Tcl in a single application.There are several popular GUI library alternatives available, such as wxPython, PyQt, PySide, Pygame, Pyglet, and PyGTK.
A window which acts as a child of the primary window. It will be decorated with the standard frame and controls for the desktop manager. It can be moved around the desktop and can usually be resized. The generic term for any of the building blocks that make up an application in a graphical user interface.Core widgets: The containers: frame, labelframe, toplevel, paned window.

The buttons: button, radiobutton, checkbutton (checkbox), and menubutton. The text widgets: label, message, text. The entry widgets: scale, scrollbar, listbox, slider, spinbox, entry (singleline), optionmenu, text (multiline), and canvas (vector and pixel graphics).

Tkinter provides three modules that allow pop-up dialogs to be displayed: tk.messagebox (confirmation, information, warning and error dialogs), tk.filedialog (single file, multiple file and directory selection dialogs) and tk.colorchooser (colour picker). Python 2.7 and Python 3.1 incorporate the “themed Tk” (“ttk”) functionality of Tk 8.5.

This allows Tk widgets to be easily themed to look like the native desktop environment in which the application is running, thereby addressing a long-standing criticism of Tk (and hence of Tkinter). Some widgets are exclusive

to ttk, such as the combobox, progressbar, treeview, notebook, separator and sizegrip.

In Tkinter, the Frame widget is the basic unit of organization for complex layouts. A frame is a rectangular area that can contain other widgets.When any widget is created, a parent–child relationship is created. For example, if you place a text label inside a frame, the frame is the parent of the label.

5.2BLOCKER MODULE:

Inside the block module, first the variable website_list stores the given input website inside it from the start till the end by calling the predifined object enter_website using the get method and the website_list is converted into a list using the list function and stored in another variable called website using the split function the entered websites are separated by commas which is specified in delimiter of the split method.

The host_file is is opened as host_file using the with and open key word in read mode. The read content is stored in another variable file_content by using the read() function. Using a for loop each website is assigned the the variable web and it is passed to an if condition if those website, where the variable web is checked if it is present in the file_content.

For example if YouTube is is present in the list the file_content and if it is blocked, then pop up an message box by showing an information that" ALREADY BLOCKED YOUTUBE" that is the web variable.

By using the the pass keyword pass to the next variable. In the else part using the write function which writes IP address “127.0.01” along with the websites to be blocked in the host file and print the message BLOCKED and the website that is blocked.

5.1.1FUNCTIOS USED IN BLOCKER MODULE

Tk()- helps us create an empty window where we can add labels and buttons. A space named window has been created.

Geometry() – this function is used to give size to the window.

Minsize(), maxsize() – this function is for giving the minimum and maximum size to the window.

Title() – provides an appropriate title to the

5.3UNBLOCK MODULE:

In the unblock module the entered websites from the users are stored in variable ‘websites_list’ from the start till the end.The variable_list is converted into a list format using the list function and separated using the split function and there are separated by any delimeter.

Again the hostpath is opened as hostfile in the read mode using the with open key word the read contents of closed file is stored in another variable ‘file_content’ a for loop is created to assign each websites to the variable web and it is checked if it is present in the list called websites.Each websites is checked using if statements that the websites are presented in the website_list.

Now the host_file is opened as f in read mode using the with open keyword.by using the truncate method the file is truncated.Now the message unlock is printed along with a the unblocked websites another for loop is executed to store the values of the file_content in the variable line .

The values inside the variable line are separated using a comma by the split method.Then they are checked to the condition if they are not equal to the ip address and the websites. If the condition satisfies then the file f is written by the variable line.Then a message box is displayed that those websites are un blocked.

5.2.1 FUNCTIONS USED IN UNBLOCK MODULE

The Unblock() function is created to unblock a website that is already blocked and is present in the host file. If a website is blocked and a click on the Unblock button a label “Unblocked” is displayed. If a website is already Unblocked and isn’t a part of the host file then display label – “Already Unblocked”.

Get() – this method is used to get the text that is added to the enter_website label.

Open() – this is for opening the host file. Here the host file is opened in r+ mode which is reffered read plus write mode.

Split() – this method is used to separate the content of the text area.

FUNCTIONS USED IN CREATING LABELS AND BUTTONS

The method Label() is used to create a label.

For the text area, we use the method Text().

To place both of these to the window we use the place() method and inside it the values to x and y are given

CHAPTER 6

APPENDICES

6.1 SAMPLE CODING:

```
 #importing required liberary
From tkinter import *
From tkinter import messagebox
#creating a window
Window = Tk()
Window.geometry('650x400')
Window.minsize(650,400)
Window.maxsize(650,400)
Window.title("Website Blocker")

Heading=Label(window, text ='Website Blocker' , font ='arial')
Heading.pack()

Host_path ='C:\Windows\System32\drivers\etc\hosts'
Ip_address = '127.0.0.1'

Label1=Label(window, text ='Enter Website :' , font ='arial 13 bold')
Label1.place(x=5 ,y=60)

Enter_Website = Text(window,font = 'arial',height='2', width = '40')
```

```
Enter_Website.place(x= 140,y = 60)



Def Blocker():
    Print('***************BLOCKER START***************')
    Website_lists = enter_Website.get(1.0,END)
    Website = list(website_lists.split(","))
    With open (host_path , 'r+') as host_file:
        File_content = host_file.read()

        For web in Website:
            If web in file_content:
                Messagebox.showinfo("Information", "Already Blocked "+web)
                Print('Already Blocked '+web)
                Pass
            Else:
                Host_file.write(ip_address + " " + web + '')
                Print('Blocked '+web)
                Messagebox.showinfo("Information", "Blocked "+web)

    With open (host_path , 'r+') as host_file:
        afterFileWrite = host_file.read()
        print('------------AFTER FILE WRITE------------')
        print('------------FILE START------------')
        print(afterFileWrite)
        print('------------FILE END------------')
    print('***************BLOCKER END***************')

''
```

```
def Unblock():
    print('***************UNBLOCKER START***************')
    website_lists = enter_Website.get(1.0,END)
    Website = list(website_lists.split(","))
    With open (host_path , 'r+') as host_file:
        File_content = host_file.readlines()
        For web in Website:
            If web in website_lists:
                With open (host_path , 'r+') as f:
                    f.truncate() # REMOVE ALL LINES FROM HOST FILE
                    print('Unblock '+website_lists)
                    for line in file_content:
                        if line.strip(',') != (ip_address+' '+website_lists):
                            f.write(line)

            messagebox.showwarning("Information", "Unblocked
"+website_lists)


    with open (host_path , 'r+') as host_file:
        afterFileWrite = host_file.read()
        print('------------AFTER FILE WRITE------------')
        print('------------FILE START------------')
        print(afterFileWrite)
        print('------------FILE END------------')

"
```

```
print('**********UNBLOCKER END**********')

block_button = Button(window, text = 'Block',font = 'arial',pady =
5,command = Blocker ,width = 6, bg = 'royal blue1', activebackground =
'grey')
block_button.place(x = 230, y = 150)

unblock_button = Button(window, text = 'UnBlock',font = 'arial',pady =
5,command = Unblock ,width = 6, bg = 'royal blue1', activebackground =
'grey')
unblock_button.place(x = 350, y = 150)
window.mainloop()
```

6.2 SCREEN SHOT

FIG 6.1 WEBSITE BLOCKER WINDOW

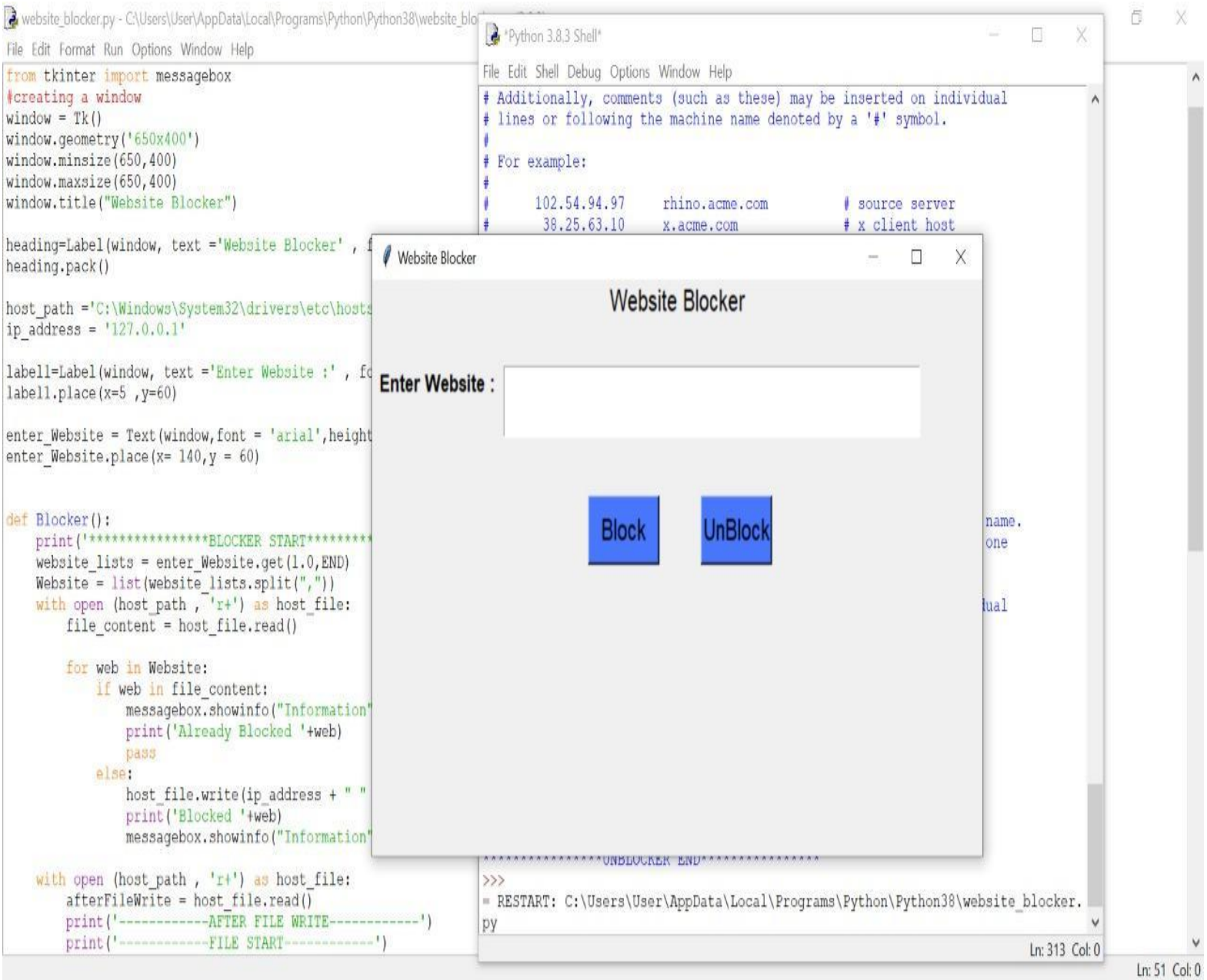


FIG 6.2 ENTERING THE WEBSITE TO BE BLOCKED:

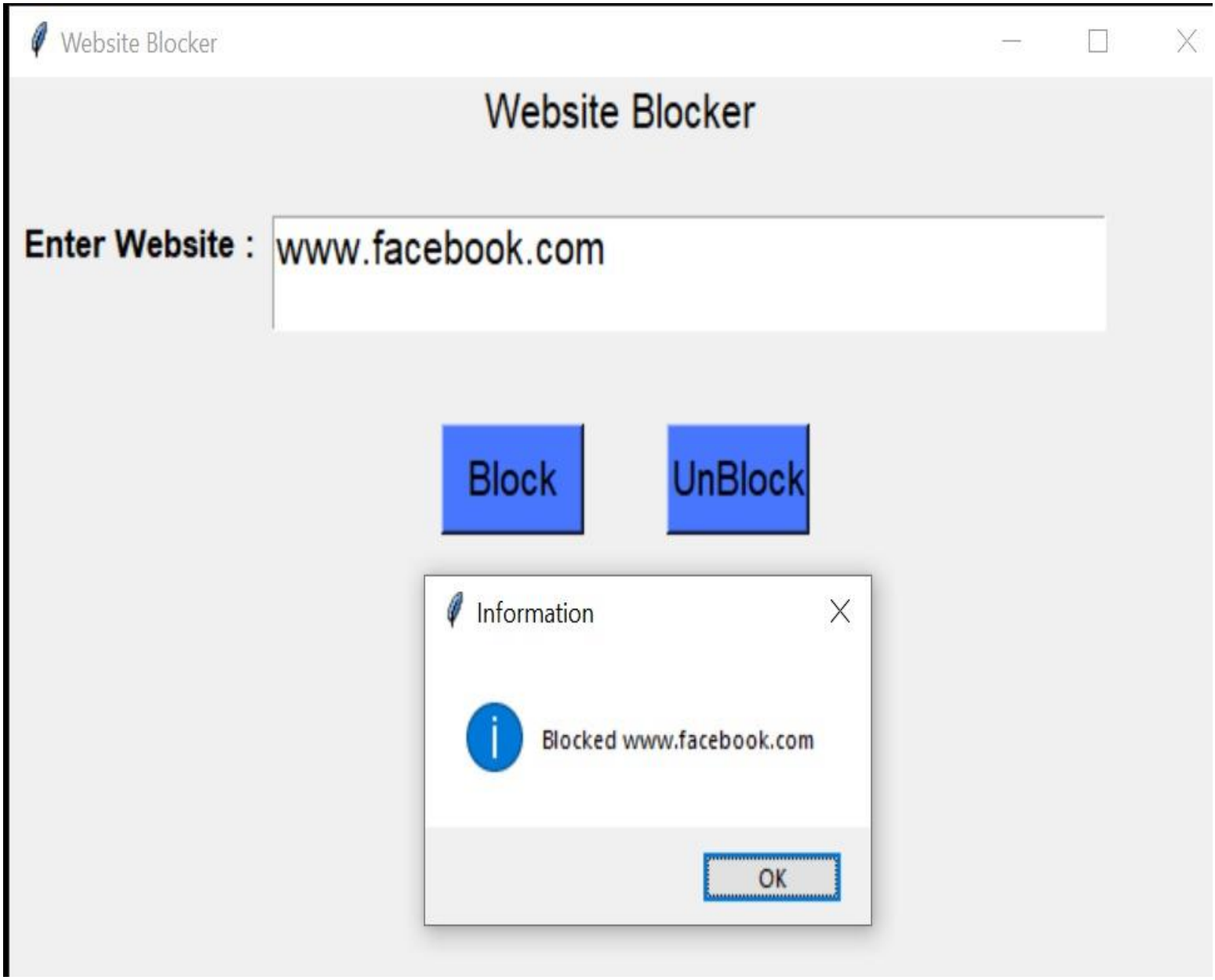


FIG 6.3 THE WEBSITE IS BLOCKED:

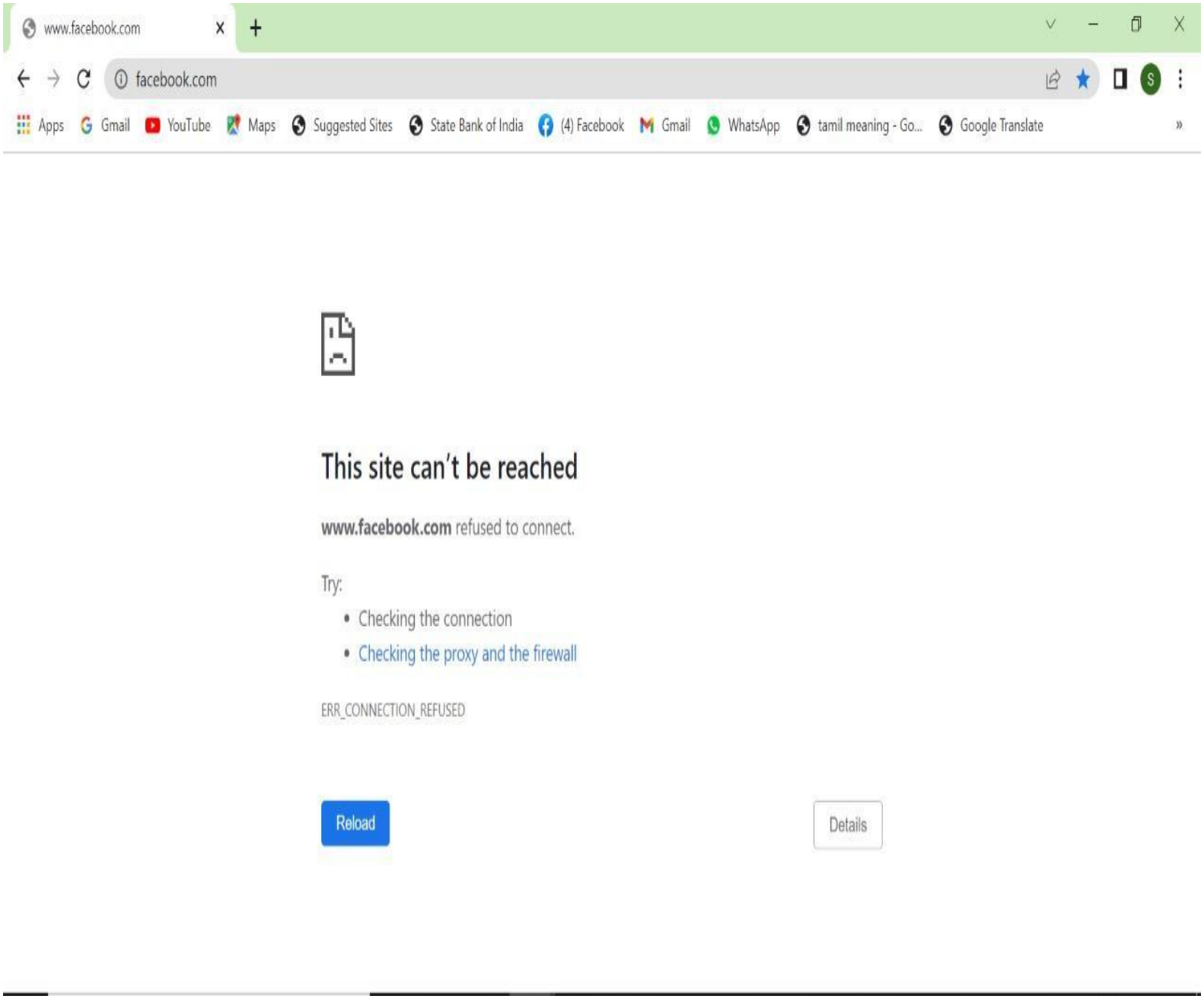


FIG 6.4 AFTER UNBLOCKING THE WEBSITE

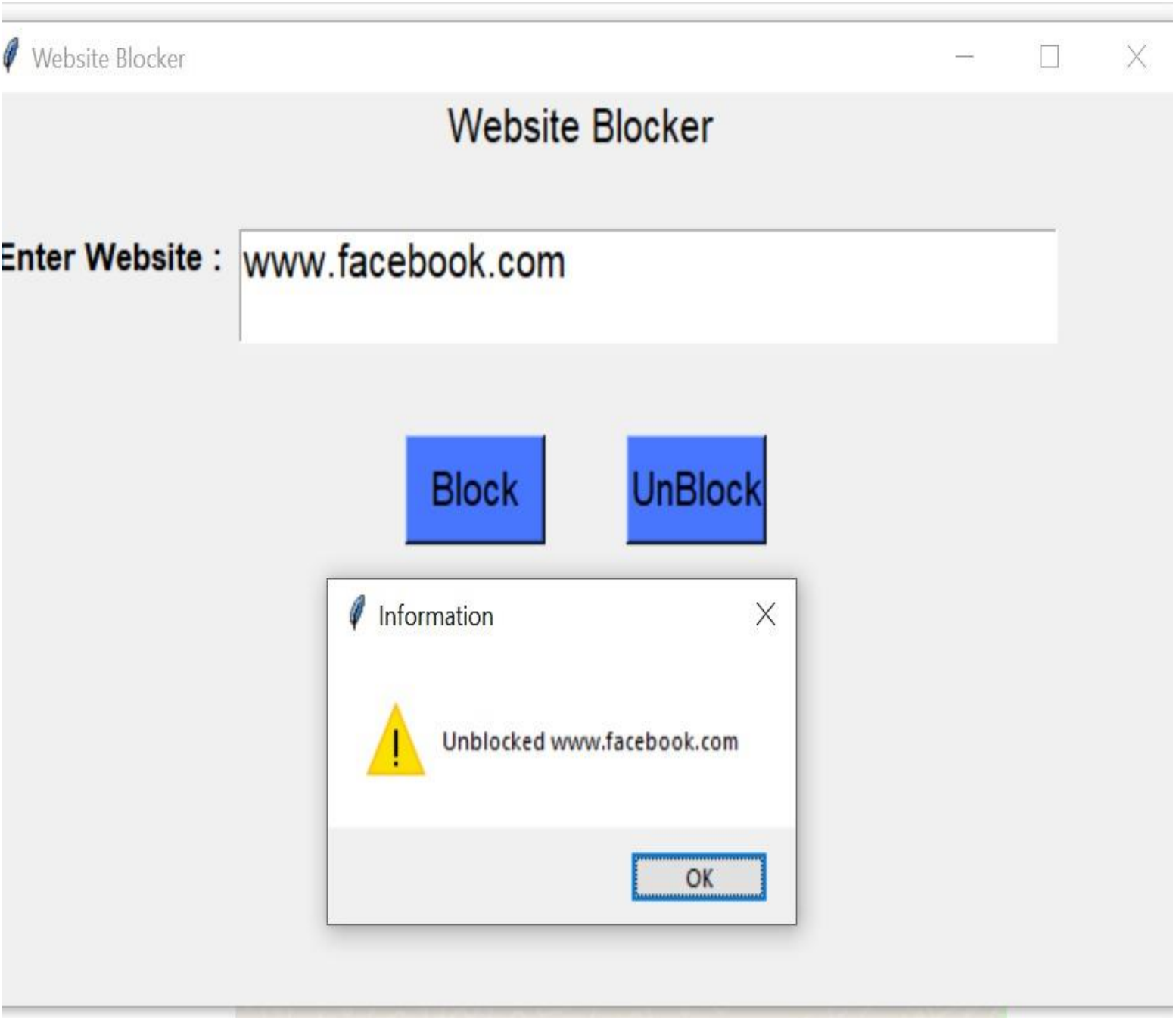
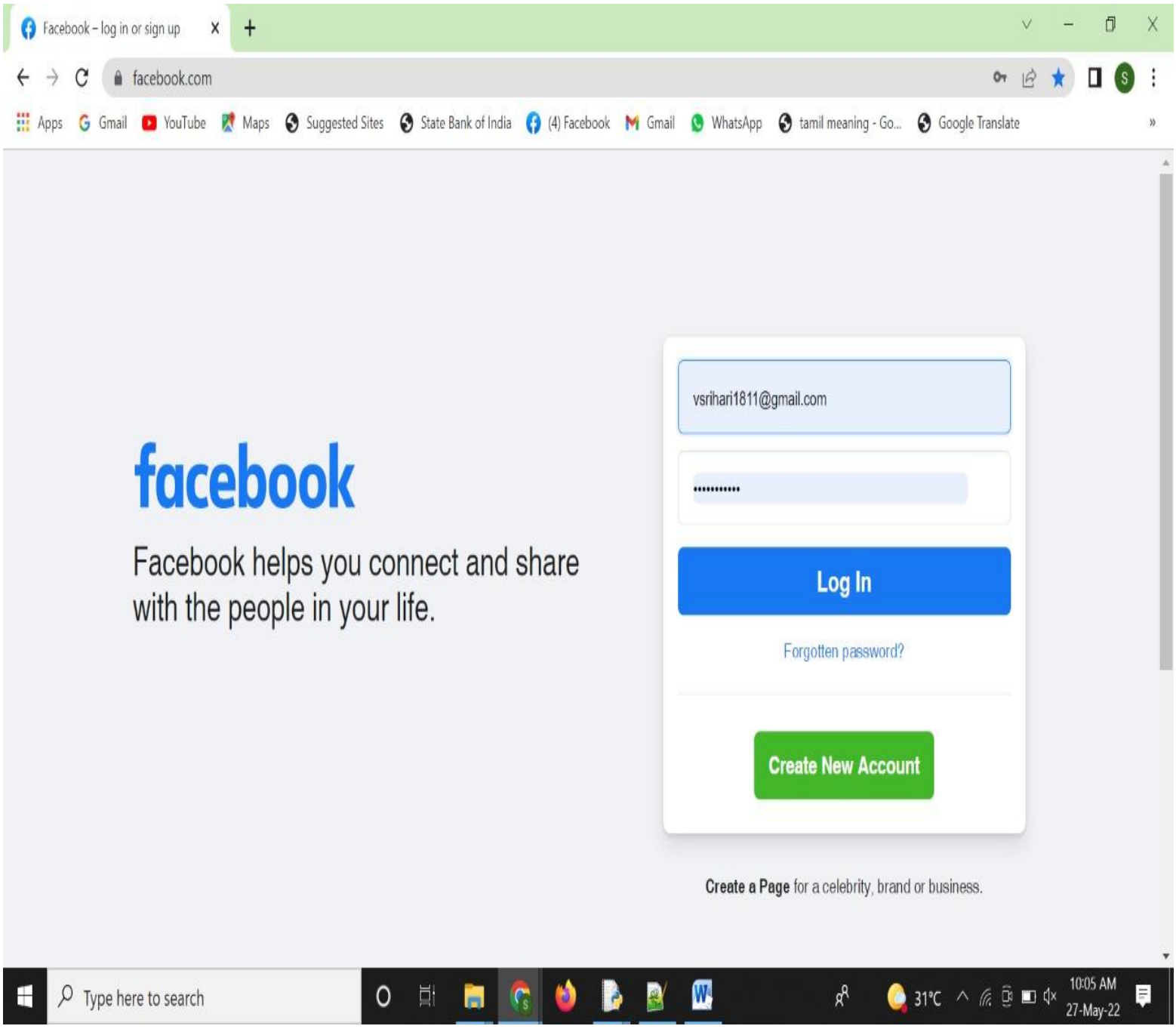


FIG 6.5 AFTER UNBLOCKING THE WEBSITE



CHAPTER 7

7.1 CONCLUSION:

The python website blocker for windows as well as linux has been created and it is in a good state for blocking the websites and it is created in a manner that the unblocked websites can also be unblocked. This project has the advantage of working on any operating systems and without any time limit, the user can block the websites any time if needed. As it is made by python programming language one can easily understand the way how it works and executed .This python project is going to be really applicable, since there are many irritating websites that might wanted to be block. This can also used this to block Netflix, so that any studying student can focus during thier classes and exams.