INT213

Python Project

LOVELY PROFESSIONAL UNIVERSITY

Topic:

Final Project Report on

WEBSITE BLOCKER

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Finally, I would like to thank my friends who helped me a lot in finishing this topic within a limited time.

Thanks to All!

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INTRODUCTION

In this project, we are going to build a real-time most popular python application known as website blocker.

This application can be used to block the websites so that the user can not open them during the specific period.

Let's discuss how can we build such an application by using python.

OBJECTIVE

The objective of Python website blocker is to block some certain websites which can distract the user during the specified amount of time.

In this, we will block the access to the list of some particular websites during the working hours so that the user can only access those websites during the free time only.

The working time in this python application is considered from 9 AM to 5 PM. The time period except that time will be considered as free time.

Process

To block the access to a specific website on the computer, we need to configure the **hosts** file.

The hosts file

The hosts file is a local file which was used to map hostnames to IP addresses in the old days. Although the DNS service is used nowadays to map the hostnames to the IP addresses, the host file is still very complex and can be used to configure the mapping of the IP addresses locally.

Location of hosts file

The location of the hosts file varies from operating system to operating system.

Windows: C:\Windows\System32\drivers\etc

mac and Linux: /etc/hosts

Website Blocker

Prerequisites:

1. Python 3.0
2. Pip

What is the 'hosts' file?

The host is an operating system file that maps hostnames to IP addresses. In this program, we will be mapping hostnames of websites to our localhost address. Using python file handling manipulation we will write the hostname in hosts.txt and remove the lines after your working hours.

Python Script:

```
# Run this script as Administrator
import time
from datetime import datetime as dt
#Host file location on windows
hostsFilePath = "C:\\Windows\\System32\\drivers\\etc\\hosts"
# localhost's IP Address
redirect_IP = "127.0.0.1"
# Websites that you want to block
website_list=["www.facebook.com","facebook.com", "www.youtube.com","youtube.com"]
while True:
 # time of your work in which the sites will remain blocked here its 9AM to 5PM
 if dt(dt.now().year, dt.now().month, dt.now().day,8) < dt.now() < dt(dt.now().ye
ar, dt.now().month, dt.now().day,21):
  with open(hostsFilePath, 'r+') as file:
   content = file.read()
   for website in website_list:
    if website in content:
     pass
    else:
     # Mapping hostnames to be blocked to your localhost IP address
     file.write(redirect_IP + " " + website + "\n")
     print("Access denied for "+ website)
 else:
  with open(hostsFilePath, 'r+') as file:
   content=file.readlines()
   file.seek(0)
   for line in content:
    if not any(website in line for website in website_list):
```

```
    file.write(line)
  # Removing hostnmes from hosts file
  file.truncate()
 print("Access Granted""+ website)
time.sleep(5)
```

NOTE –If you do not have access to the hosts file, change the extension of the Python file from '.py' to '.pyw' and run the script as Administrator to gain access to the hosts file.

Now try accessing the sites mentioned in the code, you will not be able to access it.

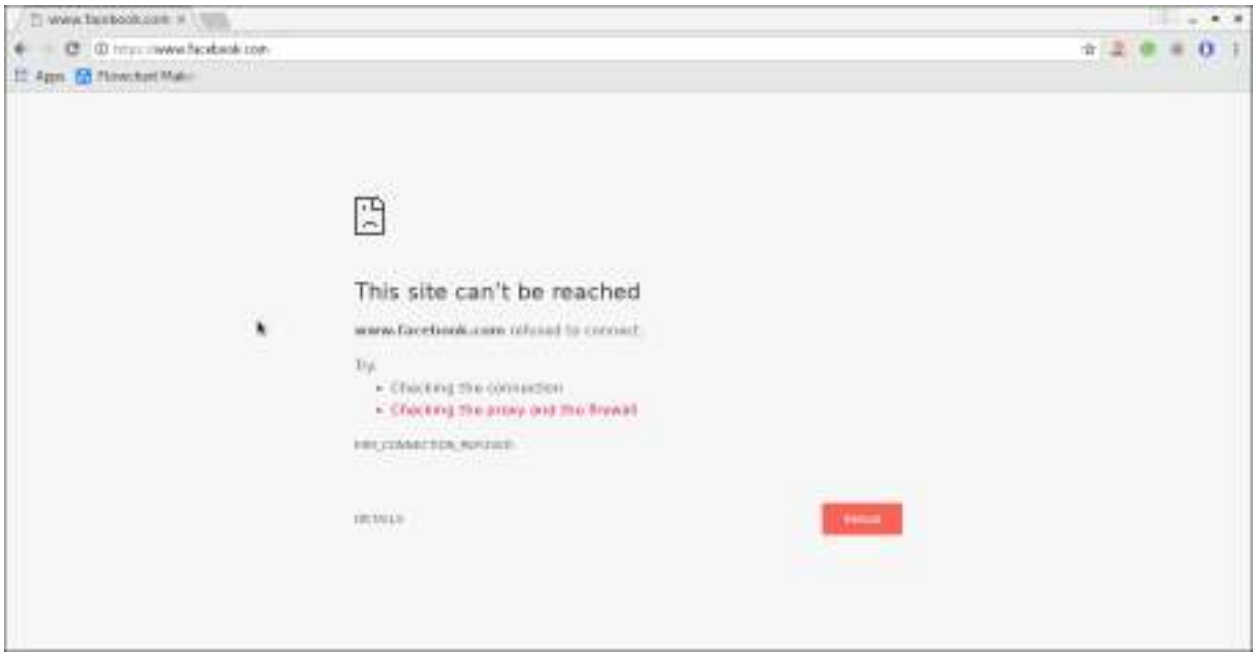
You can also, schedule the above script to run At startup

Step1: Now open task scheduler.
Step2:Click on "create task". Fill the name of your choice and flag "Run with highest privilege".
Step3: Now go to triggers, select "At startup" for begin the task.
Step4: Go to Action bar and create a new action and give path of your script.
Step5: Go to conditions bar and unflag the power section.
Step6: Press ok and you can see the script scheduled.
Step7:Finally restart your computer and see the magic.
Note: You can also check instantly by clicking run button.

Website Blocker with UI

```
from tkinter import *

#initialized tkinter which means window created
root = Tk()
#set the width and height of the window
root.geometry('500x300')
#set the fixed size of the window
root.resizable(0,0)
#set the title of the window
root.title(" Website Blocker")

#widget is used to display one or more than one line of text
#set root - name which we refer to our window
#set pack-organized widget in block
Label(root, text ='WEBSITE BLOCKER' , font ='arial 20 bold').pack()
Label(root, text ='Aman Kumar Singh' , font ='arial 20 bold').pack(side=BOTTOM)
#put host file path
host_path ='C:\Windows\System32\drivers\etc\hosts'
#provide IP address used by localhost
ip_address = '127.0.0.1'
#Provide text area to enter the websites to block. Multiple websites can be enter
ed comma seperated.
Label(root, text ='Enter Website :' , font ='arial 13 bold').place(x=5 ,y=60)

Websites = Text(root,font = 'arial 10',height='2', width = '40', wrap = WORD, pad
x=5, pady=5)
Websites.place(x= 140,y = 60)

def Blocker():
    '''
    This function takes the websites entered and checks if they are present in th
e host file.
    If the file is found it displays 'Already Blocked'
    else writes it into the host file and blocks it.
    '''
    website_lists = Websites.get(1.0,END)
    #get the multiple websites enterd to block in list
    Website = list(website_lists.split(","))
    #Open the hostfile in read mode
    with open (host_path , 'r+') as host_file:
        #Read the content of the hostfile
        file_content = host_file.read()
```

```
        #loop over the websites entered to block one by one
        for website in Website:
            #check if the file is already present in host file and is blocked
            if website in file_content:
                #Display that the website is already blocked
                Label(root, text = 'Already Blocked this Website' , font = 'arial
 12 bold').place(x=200,y=200)
                pass
            else:
                # if the website is not present in the host file write it and and
 redirect to local ip
                host_file.write(ip_address + " " + website + '\n')
                Label(root, text = "Blocked this Website", font = 'arial 12 bold'
).place(x=230,y =200)
# used to display button on our window
block = Button(root, text = 'Block',font = 'arial 12 bold',pady = 5,command = Blo
cker ,width = 6, bg = 'royal blue1', activebackground = 'sky blue')
block.place(x = 230, y = 150)
root.mainloop()
```



As shown in the above figure, it is refused to connect.

We have completed our task by manually editing the hosts file. We haven't achieved our objective yet. Our objective is to block access to some particular websites (for example, facebook) during working hours only (9 AM to 5 PM).

It needs a python script which keeps adding the necessary lines to the hosts file during a particular period.

In this section of the tutorial, we will build such python script which keeps editing the hosts file during the working hours. We will also deploy that script at the OS startup so that it doesn't need any external execution.

Requirements

We need to know the following python modules to build the python website blocker.

1. **file handling:** file handling is used to do the modifications to the hosts file.
2. **time:** The time module is used to control the frequency of the modifications to the hosts file.
3. **Date time:** The date time module is used to keep track of the free time and working time.