Algorithm for file updates in Python

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Project description

Check if the allow list file has any disallowed ip addresses.
Get the list of ip addresses from the file and store them in a list.
Check the list for any disallowed ip addresses and remove them.
Then overwrite the allow list file with the updated list of ip addresses.

Open the file that contains the allow list

```python
#file to open
import_file = "allow_list.txt"
#open the file indicated by import_file in read mode, and close the
#file when done, use file stream named file
with open(import_file, "r") as file:
```

Read the file contents

```python
with open(import_file, "r") as file:
    #read the ip addresses from the allow list file using the read
    #function and save them as a string into the variable called
    #ip_addresses
    #after the with block the file will be closed
    ip_addresses = file.read()
```

Convert the string into a list

```python
#ip_addresses as a string is hard to use, so use split with no
#arguments to turn it into a list, entries from the string are
#separated by a whitespace
ip_addresses = ip_addresses.split()
```

Iterate through the remove list

```python
#for every element in the remove list
```

```
#if the element is in the list of ip addresses
#then it needs to be removed from that list
for element in remove_list:
```

Remove IP addresses that are on the remove list

```
for element in remove_list:
    #is the current ip address to remove
    #one of the ip addresses from the original list?
    if element in ip_addresses:
        #the disallowed ip address is in the original list
        #and must be removed from the list
        #an ip address would only be listed once in the original
        #list, therefore a list index to delete it isn't necessary
        ip_addresses.remove(element)
```

Update the file with the revised list of IP addresses

```
#overwrite the original file with the list of ip addresses
#after the disallowed ip addresses have been removed
#====================================================
#to overwrite the original file with the list of ip addresses,
#the list of ip addresses must first be converted back into a string
#separate the entries with a newline
ip_addresses = "\n".join(ip_addresses)
#=====================================================
#overwrite the contents of the allow list file
#with the updated list of ip addresses
#=====================================================
#open the allow list file in write mode to overwrite the original
#contents
with open(import_file, "w") as file:
    #overwrite the original contents of the file
    #with the new list of ip addresses
    file.write(ip_addresses)
```

Summary

Used the `open()` function to open files, the `read()` function to read their contents, and the `write()` function to overwrite their contents. Used the `with` and `as` operators to connect to a file stream `file` and to make sure the file is closed after opening it.

Used the `split()` function to turn a string into a list separated by whitespace. Used the `join()` function to convert the list into a string separated by newline characters.