Algorithm for file updates in Python

Project description

I am tasked to update a file that contains restricted ip addresses by removing them.

Create a function that takes in the ip addresses file and the restricted list

```
# Defined a function named `update_file` that takes in two parameters: `import_file` and `remove_list`
def update_file(import_file, remove_list):
```

Open and read the file that contains the allow list

```
 # File parsing using the `with` statement to read in the initial contents of the file
 with open(import_file, "r") as file:

     # Used the `.read()` function to read the imported file and stored it in a variable named `ip_addresses`
     ip_addresses = file.read()
```

Convert the string into a list

```
# Used `.split()` to convert `ip_addresses` from a string to a list
ip_addresses = ip_addresses.split()

# Removed the first element in the list due to it being a header, not an ipv4 address
ip_addresses.remove(ip_addresses[0])
```

Iterate through the IP addresses and remove the restricted ones

```
# Loop through the `ip_addresses` list and wrote a conditional statement: if the element is in the restricted list, remove it.
for element in ip_addresses:
    if element in remove_list:
        ip_addresses.remove(element)
```

Update the file with the revised list of IP addresses

```
# Converted `ip_addresses` back to a string so that it can be formatted into the text file
ip_addresses = " ".join(ip_addresses)
```

```
    # File parsing using the `with` statement and the 'w' argument to re-write the original file
    with open(import_file, "w") as file:

        # Rewrite the file, replacing its contents with `ip_addresses`
        file.write(ip_addresses)
```

Calling in the function and opening the updated file

```
# Called the `update_file()` function and passed in "allow_list.txt" and a list of IP addresses to be removed
update_file('allow_list.txt',["192.168.25.60", "192.168.140.81", "192.168.203.198"])

# File parsing using the `with` statement to read the updated file
with open("allow_list.txt", "r") as file:

    # Read-in the updated file and stored the contents under the variable`text`
    text = file.read()
    text = text.split()
    text.remove(text[0])

# Display the contents of the`text`
print(text)
```

```
['192.168.205.12', '192.168.6.9', '192.168.52.90', '192.168.90.124', '192.168.186.176', '192.168.133.188', '192.168.218.219',
'192.168.52.37', '192.168.156.224', '192.168.60.153', '192.168.69.116']
```

Summary

I have now created an algorithm that removes restricted IP addresses stored in a file. With this function, I am able to process ip addresses much more efficiently within a network.