Algorithm for file updates in Python

Project description

This algorithm handles the removal of IP addresses from a list that records which ones are allowed to access restricted content within the organization. The user-defined function “update_file” stores the algorithm for future use, and takes two parameters: “import_file”, “remove_list”. The import file is the name we assigned to the allow_list.txt file, and must be specified every time the function is called. The remove_list will be a list of IP addresses that are no longer allowed to access restricted content.

Open the file that contains the allow list

```
# Assign the allow list as “import_file” so it becomes a variable.
# use the with ……… as file keyword when dealing with files in python
# use the open() function, with the first parameter as the variable
for the file name, and the second as “r” which stands for read.

import_file = "allow_list.txt"

with open(import_file, "r") as file:
```

Read the file contents

```
# using the .read() method allows us to read the imported file and
store it in the variable ip_addresses. This is done so any changes we
make to the content will not permanently affect the original file
right away, and allows us to check to see if the changes have been
made, by comparing the results of the algorithm to the original
contents of the file.

# by displaying the ip_addresses using print() we can view the data in
its current format (in this case, a string within the .txt file)
```

```
with open(import_file, "r") as file:

  ip_addresses = file.read()
```

Convert the string into a list

```
# the .split() method converts string data into a list.
# remember that string data is immutable and converting this data into
a list makes it easier to revise

ip_addresses = ip_addresses.split()
```

Iterate through the remove list

```
# by iterating through the remove list, we can see if the split was
successful

for element in ip_addresses:

    print(element)
```

Remove IP addresses that are on the remove list

```
# we must assign remove_list to a list of IP addresses. this line is
written directly after assigning import_file to the “allow_list.txt”
file at the beginning of the code.

#using the .remove() method after the conditional for and if
statements will remove the IPs from the ip_addresses variable.

remove_list = ["192.168.97.225", "192.168.158.170", "192.168.201.40",
"192.168.58.57"]

for element in ip_addresses:
    if element in remove_list:

        ip_addresses.remove(element)
```

Update the file with the revised list of IP addresses

```
# using the “ “.join() method takes a list and converts the data into
a string, which separates each element with a space.
# In order to overwrite the original allow_list.txt file with the
updated list of IP addresses, we need to open it using with open() as
file,  with a “w” parameter.
# then we use file.write() and insert what is to be written on the
file to replace the older data, in this case: ip_addresses

ip_addresses = “ “.join(ip_addresses)

with open(import_file, “w”) as file:

    file.write(ip_addresses)
```

Summary

Algorithms can seem complex, but once written, can be stored as a single function that automates the task for you, when you input various parameters.