Trent Dozier April 2, 2024

Algorithm for file updates in Python

Project description

For this project I will be creating a script in Python that removes IP addresses from an allow list based from another list with IP addresses that need to be removed from the list.

Open the file that contains the allow list

```
# Assign `import_file` to the name of the file

import_file = "allow_list.txt"
```

```
# Build `with` statement to read in the initial contents of the file

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

Read the file contents

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

  # Use `.read()` to read the imported file and store it in a variable named `ip_addresses`

  ip_addresses = file.read()
```

Convert the string into a list

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

ip_addresses = ip_addresses.split()
```

Iterate through the remove list

```
# Build iterative statement
# Name loop variable `element`
# Loop through `remove_list`

for element in remove_list:
```

Remove IP addresses that are on the remove list

```
for element in remove_list:

  # Create conditional statement to evaluate if `element` is in `ip_addresses`

    if element in ip_addresses:

      # use the `.remove()` method to remove
      # elements from `ip_addresses`

        ip_addresses.remove(element)
```

Update the file with the revised list of IP addresses

```
# Convert `ip_addresses` back to a string so that it can be written into the text file

ip_addresses = "\n".join(ip_addresses)
```

```
  # Build `with` statement to rewrite the original file

  with open(import_file, "w") as file:

    # Rewrite the file, replacing its contents with `ip_addresses`

    file.write(ip_addresses)
```

Summary

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I created an algorithm that removes IP addresses listed in the remove_list variable from the “allow_list.txt” file of approved IP addresses. This involved opening the file, converting to a string so it can be read, and then converting the string to a list in the variable ip_addresses. I then iterated through the addresses in the remove_list. In each iteration checked if the address was on the ip_addresses list. If it was I applied the .remove() function to remove the element from ip_addresses. After this I used .join() to convert the ip_addresses back into a string so that I could write over the original file contents of “allow_list.txt” with the revised IP addresses.