# Algorithm for file updates in Python

## Project description

In this scenario, as a security professional at a healthcare company, I need to regularly update a file containing the IP addresses of employees permitted to access restricted content based on their work with personal patient records. This involves removing IP addresses from the allow list that are identified in a remove list.

## Open the file that contains the allow list

To accomplish this, we first need to open the file that contains the allow list. We use the with statement and the open() function to open the file. The file is stored in a variable called import\_file.

## Read the file contents

After opening the file, we need to read its contents. We use the .read() method to convert the contents of the file into a string and store it in a variable called ip\_addresses.

## Convert the string into a list

Next, we convert the string of IP addresses into a list format using the .split() method. This allows us to manipulate the IP addresses individually.

## Iterate through the remove list

We have a separate list called remove\_list containing IP addresses that must be removed from the ip\_addresses list. We set up a for loop to iterate through each IP address in the remove\_list.

## Remove IP addresses that are on the remove list

Within the loop, we check if each IP address in the remove\_list is present in the ip\_addresses list. If it is, we remove it using the .remove() method. We can do this because there are no duplicates in the ip\_addresses list.

## Update the file with the revised list of IP addresses

Once we have removed the specified IP addresses from the ip\_addresses list, we convert the list back into a string format using the .join() method. We join the elements of the list with a newline character ("\n") to ensure each IP address appears on a separate line. Finally, we use another with the statement and the .write() method to overwrite the contents of the file with the updated list of IP addresses.

## Summary

In summary, this algorithm allows us to update a file containing an allow list of IP addresses by removing any IP addresses specified in a remove list. We achieve this by opening the file, reading its contents, converting the string of IP addresses into a list, iterating through the remove list, removing specified IP addresses from the allow list, and updating the file with the revised list of IP addresses.