# Algorithm for File Updates in Python

## Project Description

In this scenario, I am a security professional at a healthcare company responsible for managing access to a restricted subnetwork. Employees who work with patient records are granted access based on their IP addresses, which are stored in an 'allow\_list.txt' file. A separate 'remove\_list' contains IP addresses that need to be removed from this allow list. The goal of this algorithm is to ensure that restricted IP addresses are removed from the allow list to maintain proper access control. The script will read the allow list, compare it to the remove list, remove any matching entries, and update the file accordingly.

## Open the File that Contains the Allow List

import\_file = "allow\_list.txt"  
with open(import\_file, "r") as file:  
 ip\_addresses = file.read()

## Read the File Contents

ip\_addresses = file.read()

## Convert the String into a List

ip\_addresses = ip\_addresses.split("\n")

## Iterate Through the Remove List

remove\_list = ["192.168.1.10", "10.0.0.5"] # Example remove list  
for element in remove\_list:

## Remove IP Addresses That Are on the Remove List

if element in ip\_addresses:  
 ip\_addresses.remove(element)

## Update the File With the Revised List of IP Addresses

with open(import\_file, "w") as file:  
 file.write("\n".join(ip\_addresses))

## Summary

This algorithm automates the process of updating an allow list by removing IP addresses listed in a separate remove list. It follows these key steps:  
  
1. Opens the allow list file and reads its contents.  
2. Converts the file data from a string to a list.  
3. Iterates through a predefined remove list.  
4. Removes matching IP addresses.  
5. Converts the updated list back into a string and writes it back to the file.  
  
This approach ensures proper access control by dynamically managing restricted IP addresses in a healthcare security system. The use of Python’s built-in file handling and list manipulation methods makes the process efficient and reliable.