

# PASSWORD GUESSING MONITOR DESIGN

COMP 8006

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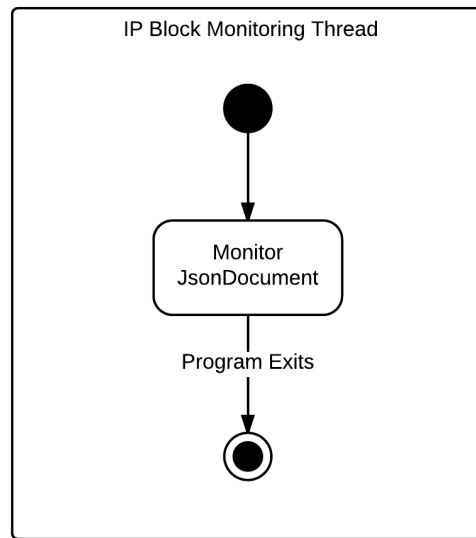
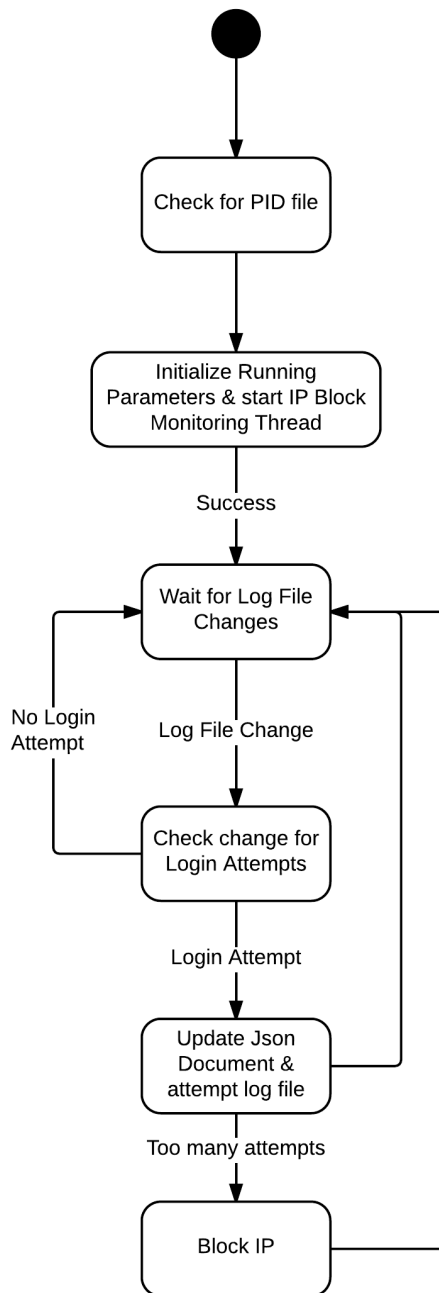
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# Contents

- State Chart Diagram..... 3
  - Log Monitor Daemon..... 3
- State Chart Diagram – continued..... 4
  - GUI Design..... 4
- Pseudo Code..... 5
  - Log Monitor Daemon..... 5
  - GUI Application..... 6

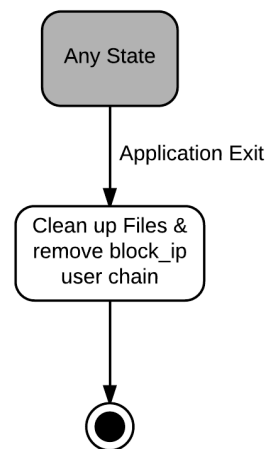
# State Chart Diagram

## Log Monitor Daemon



This thread loops forever, keeping track of the time while monitoring changes in the JsonDocument that has information about login attempts.

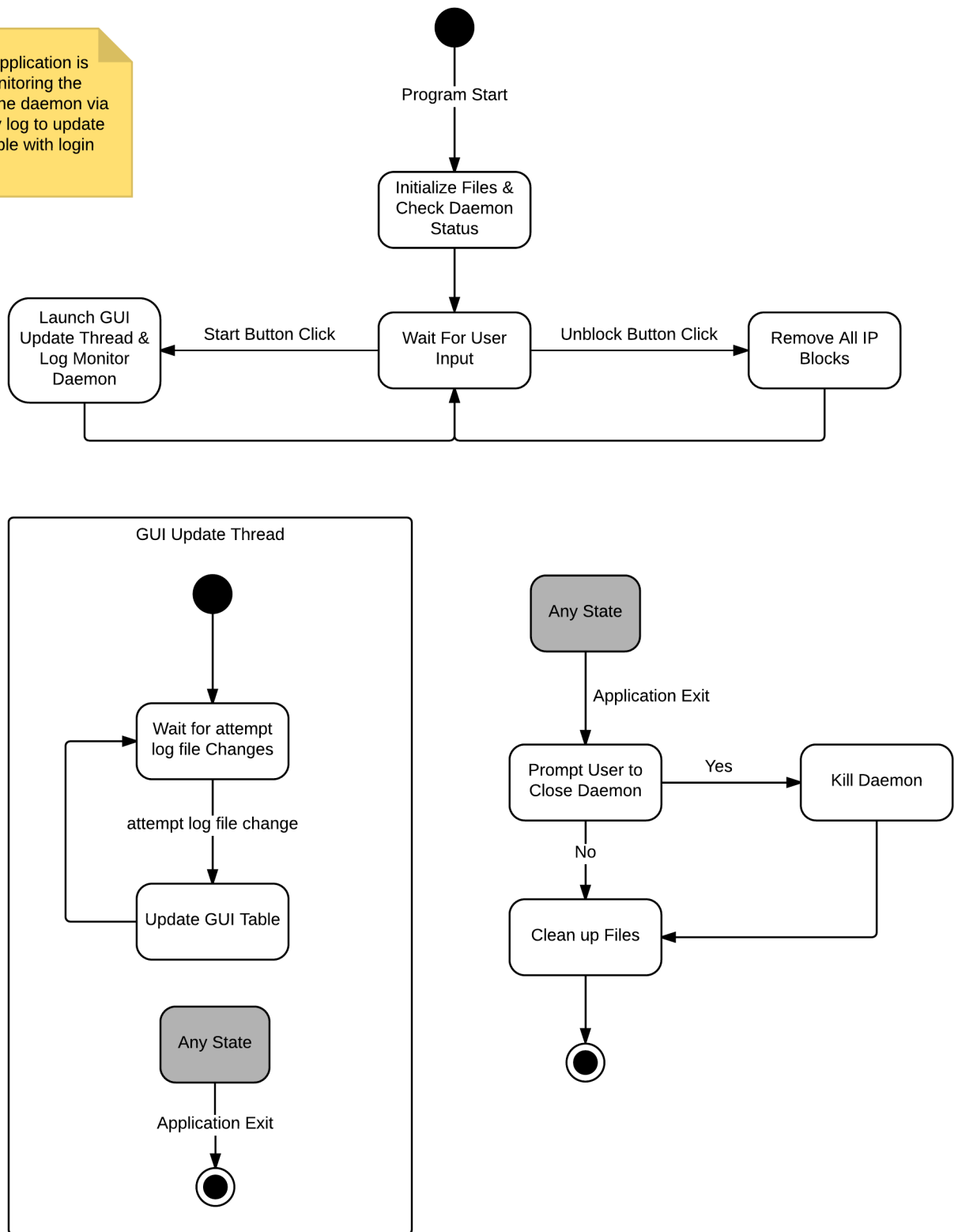
If enough time has elapsed, the the IP's attempt counter will be reset, or the IP will be unblocked, depending on it's status.



# State Chart Diagram - continued

## GUI Design

The GUI application is simply monitoring the output of the daemon via the activity log to update the info table with login attempts.



# Pseudo Code

## *Log Monitor Daemon*

### **Check for PID file**

```
if there is a process id file
    read the file for pid
    kill the pid
    close the file
write current pid to file
close the file
```

### **Initialize Running Parameters & Start IP Block Monitor Thread**

```
create settings file with running parameters
if there is an activity log
    read the contents into JsonDocument
create IP tables user chain for blocked IPs
start IP Block Monitoring Thread
go to Wait for Log File Changes
```

### **IP Block Monitoring Thread**

```
loop forever
    if the JsonDocument is empty
        sleep(1)
        continue
    get the current time
    for each ip in the JsonDocument
        if the status is "failed attempt"
            if the current time - the status time > attempt time reset
                reset the attempt counter for this ip
                update the status for this ip to "attempts reset"
        else if the status is "ip blocked"
            if the current time - the status time > block time
                reset the attempt counter for this ip
                update the status for this ip to "ip block expired"
            unblock this ip in iptables
    sleep(1)
```

### **Wait for Log File Changes**

```
if the log file changes
    read the changed content
    if the changed content contains login attempts
        go to Update JsonDocument & attempt log file
```

### **Update JsonDocument & Attempt Log File**

```
update the activity log file
update the JsonDocument
if this ip has too many attempts
    block it in iptables
go to Wait for Log File Changes
```

### **Any State**

```
if the user close the application
    remove settings file
    remove activity log file
    remove ip_block user chain in iptables
exit
```

## *GUI Application*

### **Initialize Files & Check Daemon Status**

```
initialize the gui
if daemon settings file exists
    read settings file
    read activity log
    update gui table
go to Wait For User Input
```

### **Wait For User Input**

```
if user click start button
    go to Launch GUI Update Thread & Log Monitor Daemon
if user clicks unblock button
    go to Remove All IP Blocks
```

### **Launch GUI Update Thread & Log Monitor Daemon**

```
get user settings
if user specified log file doesn't exist
    notify user
    go to Wait For User Input
start GUI Update Thread
lock ui user settings
```

### **GUI Update Thread**

```
loop forever
    if activity log file changed
        read acitivity log
        update info table with new info
```

### **Remove All IP Blocks**

```
truncate activity log file // this remove history
remove ip_block user chain in iptables
```

### **Any State**

```
if application exits
    if daemon is running
        ask user if they want to close it
clean up files
exit
```