8006 Asn3 - Design

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FSM

Init

Launch UI

Start Daemon

Change Limit

Wait for user input

Start Requested

Start Log Watching

Wait For Log Update

Parse Logs

Blocked IP

Block timeout complete

Block IP

Unblock IP
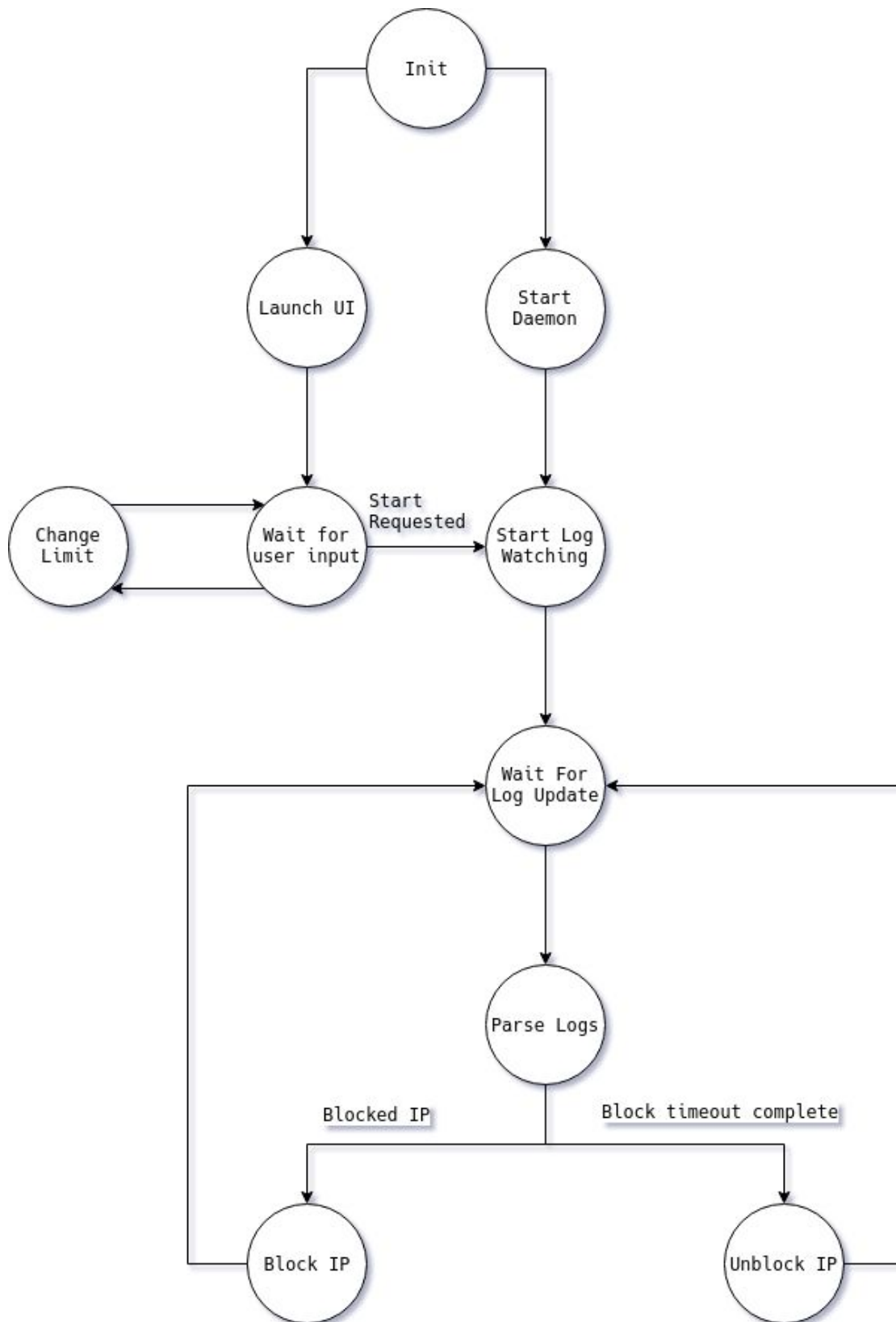
Pseudocode

Init:

Parse arguments
Check if root access is granted
Check mode
If UI mode, goto LAUNCH UI state
If daemon mode, goto START DAEMON state

Launch UI:

Create Window
Set formatting
Initialize handles
Goto WAIT FOR USER INPUT state

Start Daemon:

Create child process
Close parent process
Child process goto START LOG WATCHING state

Change Limit:

Change the timeout/retry limit based on provided input
Goto WAIT FOR USER INPUT state

Wait For User Input:

Wait until a key event is received
If the key event is to exit, exit the application
If the key event is to set a limit, goto CHANGE LIMIT state
If the key event is to start listening, goto START LOG WATCHING state

Start Log Watching:

Create descriptor to watch log file for modifications
Pass watch descriptor to epoll
Goto WAIT FOR LOG UPDATE state

Wait For Log Update:

Wait on epoll for read event
When a read event is received, goto PARSE LOGS state

Parse Logs:

Read log file for failed login attempts
Convert timestamps into epoch time
Check logs to see update entries
Get list of IPs to block and unblock
Give list of blocked IPs to BLOCK IP state
Give list of unblocked IPs to UNBLOCK IP state

Block IP:

Block IP in iptables
Goto WAIT FOR LOG UPDATE state

Unblock IP:

Unblock IP in iptables
Goto WAIT FOR LOG UPDATE state