Midterm#3

Dec. 6th

Write an application where clients send filenames to a server, which computes the md5 checksum for each file and returns it to the requester.

The clients and the server exchange messages by using a "mailbox" architecture.

Each mailbox contains:

- A filename (string)

- The corresponding md5 hash (string, once computed)

- Its current status (e.g. free, waiting for server, computing hash, computing done, etc..)

The number of mailboxes is fixed (defined at compile time or startup); access to them is managed with semaphores.

At startup, all maiboxes are free.

A client needing to compute the hash of a file:

- Accesses the mailboxes

- Locates a "free" slot

- Puts the filename in the mailbox

- Updates the box status

The server will then:

- Reads the filename

- Updates the box status

- Fork/exec a program to compute the hash using the "md5sum" command

- Upon termination of the child program, puts the hash in the mailbox

- Updates again the box status

And the client, finally:

- Retrieves the md5 hash

- Clears the mailbox status

- Prints the computed hash on the console.