**START**

Goto PARSE COMMAND LINE

**PARSE COMMAND LINE**

Read the command line arguments

IF command line specifies server

Goto SERVER

ELSE

Goto Client

**SERVER**

Create ClientServer msg queue

Assign Message-Type 1 to be the messages designated Client to Server

Goto SEARCH FOR CLIENTS

**SEARCH FOR CLIENTS**

Check for any incoming messages from clients.

* Failure no new messages: RESTART SEARCH FOR CLIENTS

Pass message to CREATE NEW CLIENT PROCESS.

Goto CREATE NEW CLIENT PROCESS

**CREATE NEW CLIENT PROCESS**

Check message data for client’s PID

Check message for client‘s priority

IF no priority specified, set priority to maximum

Fork a child process

IF Process is the child

Pass client information to this process.

Assign the task START (process)

Goto START (process)

ELSE

This is the Parent Process

Goto SEARCH FOR CLIENTS

**START (process)**

Begin DESIGNATE PRIORITY

**DESIGNATE PRIORITY**

Get Client’s Priority and PID

Designate new length of message to be MAXSIZE / PRIORITY

Goto OPEN REQUESTED FILE

**OPEN REQUESTED FILE**

Get message data from client

Read desired Filename from message data

Open requested file

* Failure: File cannot be opened for reading
  + Send “Error: Cannot open file” message to SEND MESSAGE
  + Goto SEND MESSAGE
* Success: File has been read
  + Send this file to PACKETIZE DATA
  + Goto PACKETIZE DATA

**SEND MESSAGES**

Grab assigned PID to indicate message type (destination of message)

Grab the message queue

Grab the message

Grab the “more” flag to indicate more messages

Send message to the message queue using the message type as its address.

IF “more” flag has been specified

Return to PACKETIZE DATA (restart its file read loop)

Goto PACKETIZE DATA

**PACKETIZE DATA**

Grab file contents

Grab the message queue

Grab the PID

Grab client priority

Read file until designated length of message

WHILE the file can be read

Check if file can be read

IF file cannot be read

Get out of while loop

Send the portion of the message to SEND MESSAGES

Send the PID to SEND MESSAGES

Send the Message Queue to SEND MESSAGES

Send the “more” flag to SEND MESSAGES

Goto SEND MESSAGES

Restart loop

File has finished reading

Goto END (process)

**END (process)**

Free all used resources.

Terminate this child process.