

# Assignment 6

## Basic practice questions

1. Use select to implement tee command. The program should read data given on standard input and pass it as it is on standard output and all file names given as command line arguments. With select verify that read from standard input and output to all outputs (standard/files) will not block. Then read small amount of data from input and copy that to all outputs and again verify through select that you can read from input and write to all outputs.
2. Pass status information to error output. Status information can include that '<n>' bytes read from input and copied to all outputs. Or output on 'xyz' will block hence going to sleep for one second and then re-check. For this call select with timeout 0 so that select does not block and you can print messages to standard output.

## Assignment Questions

1. Create a proxy server which reads 'Host:' value passed by browser and contacts appropriate host and send the request as it is to it and then reads response and passes response to browser.
2. Enhance proxy server so that only requests for IPs (after converting host to IP address) '10.0.0.0/8', '172.16.0.0/12', '192.168.0.0/16' go directly to servers and for other IPs pass request as it is to 'proxy.iiit.ac.in' on port '8080'. Then read reply from proxy / web server and send it to browser.

## Advanced practice questions

1. Add logging facility to your proxy server which includes fields:
  - (a) Time
  - (b) Client IP
  - (c) Destination URL
  - (d) Bytes transferred (This would be fun)
2. Implement basic access control to proxy. There should be a file named 'block.txt' and proxy server should read all IPs in the file when it starts.

Whenever someone from those IPs tries to use proxy server, then send '403 Access Denied' response rather than serving the request.