PROGRAMMING ASSIGNMENT 3 CS3205

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CS17B034   CS17B005

Implementation

- Program consists of a main process and child process for the respective clients
- In the main process a Socket is created to listen to client requests when the connection is established with the client. we fork a child process and bind the client to a new Socket fd using accept routine
- Now we use this new socket to receive Client request
- It Parse the request using the functions in proxy_parse file.When Parsed if the command is not GET it displays a IMPLEMENTATION Error and If the Request is Invalid then it displays PARSE error
- Now the Server Address is obtained from the Parser.Socket is to send request to Server.A Server request is created using the Parser functions and is sent to Server.
- After the response from the server is forwarded to Client

Error Handling

Single Client Request

- 2 clients requesting 2 GET requests one after another.

```
subbu@subbu:~/Networks/A3$ make clean
rm -f proxy *.o HTTP-proxy.o
subbu@subbu:~/Networks/A3$ make prox
gcc -I  ./lib -c proxy_parse.c HTTP-proxy.c
gcc -g -o prox proxy_parse.o HTTP-proxy.c
subbu@subbu:~/Networks/A3$ ./prox
Input Error: Success
GETADDR error: Success
subbu@subbu:~/Networks/A3$ ./prox 3457
Proxy Server Started
Client : 1
```

```
subbu@subbu:~/Networks/A3$ telnet localhost 3457
Trying 127.0.0.1...
Connected to localhost.
Escape character is '^]'.
GET http://www.google.com/ HTTP/1.0
```

```
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subbu@subbu:~/Networks/A3$ ./prox
Input Error: Success
GETADDR error: Success
subbu@subbu:~/Networks/A3$ ./prox 3457
Proxy Server Started
Client : 1
0
Client : 1 Job done in 1
```

```
t-size:10pt"><div style="margin:19px auto;text-align:center" id="fll"><a h
ref="/intl/en/ads/">Advertising◆Programs</a><a href="http://www.google.co.
in/services/">Business Solutions</a><a href="/intl/en/about.html">About Go
ogle</a><a href="http://www.google.com/setprefdomain?prefdom=IN&amp;prev=h
ttp://www.google.co.in/&amp;sig=K_ywUcZdPwaYQeYihR1YLhoc0tIYA%3D">Google.c
o.in</a></div></div><p style="font-size:8pt;color:#767676">&copy; 2020 - <
a href="/intl/en/policies/privacy/">Privacy</a> - <a href="/intl/en/polici
es/terms/">Terms</a></p></span></center><script nonce="Qv7GZFrK3c9/mHslp0D
PJA==">(function(){window.google.cdo={height:0,width:0};(function(){var a=
window.innerWidth,b=window.innerHeight;if(!a||!b){var c=window.document,d=
"CSS1Compat"==c.compatMode?c.documentElement:c.body;a=d.clientWidth;b=d.cl
ientHeight}a&&b&&(a!=google.cdo.width||b!=google.cdo.height)&&google.log("
","","/client_204?&atyp=i&biw="+a+"&bih="+b+"&ei="+google.kEI);}).call(thi
s);})();(function(){var u='/xjs/_/js/k\x3dxjs.hp.en.0EuLPigu6zs.O/m\x3dsb_
he,d/am\x3dgAEBNgI/d\x3d1/rs\x3dACT90oHVjWcAH6SUvaGkbnvcPU9bG2loWA';
setTimeout(function(){var b=document;var a="SCRIPT";"application/xhtml+xml
"===b.contentType&&(a=a.toLowerCase());a=b.createElement(a);a.src=u;google
.timers&&google.timers.load&&google.tick&&google.tick("load","xjsls");docu
ment.body.appendChild(a)},0);})();(function(){window.google.xjsu='/xjs/_/j
s/k\x3dxjs.hp.en.0EuLPigu6zs.O/m\x3dsb_he,d/am\x3dgAEBNgI/d\x3d1/rs\x3dACT
90oHVjWcAH6SUvaGkbnvcPU9bG2loWA';})();function _DumpException(e){throw e;}
function _F_installCss(c){}
(function(){google.spjs=false;google.snet=true;google.em=[];google.emw=fal
se;google.pdt=0;})();(function(){var pmc='{\x22d\x22:{},\x22sb_he\x22:{\x2
2agen\x22:true,\x22cgen\x22:true,\x22client\x22:\x22heirloom-hp\x22,\x22dh
\x22:true,\x22dhqt\x22:true,\x22ds\x22:\x22\x22,\x22ffql\x22:\x22en\x22,\x
22fl\x22:true,\x22host\x22:\x22google.com\x22,\x22isbh\x22:28,\x22jsonp\x2
2:true,\x22msgs\x22:{\x22cibl\x22:\x22Clear Search\x22,\x22dym\x22:\x22Did
 you mean:\x22,\x22lcky\x22:\x22I\\u0026#39;m Feeling Lucky\x22,\x22lml\x2
2:\x22Learn more\x22,\x22oskt\x22:\x22Input tools\x22,\x22psrc\x22:\x22Thi
s search was removed from your \\u003Ca href\x3d\\\x22/history\\\x22\\u003
EWeb History\\u003C/a\\u003E\x22,\x22psrl\x22:\x22Remove\x22,\x22sbit\x22:
\x22Search by image\x22,\x22srch\x22:\x22Google Search\x22},\x22ovr\x22:{}
,\x22pq\x22:\x22\x22,\x22refpd\x22:true,\x22rfs\x22:[],\x22sbpl\x22:16,\x2
2sbpr\x22:16,\x22scd\x22:10,\x22stok\x22:\x222pK-ZvQAf96cxK6TTW2VlX57cuQ\x
22,\x22uhde\x22:false}}';google.pmc=JSON.parse(pmc);})();</script>
</body></html>Connection closed by foreign host.
subbu@subbu:~/Networks/A3$
```

```
subbu@subbu:~/Networks/A3$ make clean
rm -f proxy *.o HTTP-proxy.o
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subbu@subbu:~/Networks/A3$ ./prox
Input Error: Success
GETADDR error: Success
subbu@subbu:~/Networks/A3$ ./prox 3457
Proxy Server Started
Client : 1
0
Client : 1 Job done in 1
Client : 2
0
Client : 2 Job done in 1
```

```html
        <a style="font-size:11px" href="pages.php?pages=Mjc">Website Cred
its</a>
        </div>
    <!-- ################################################################
##################################### -->
   </div>
</div>
</body>
</html>
<script>$('.bxslider').bxSlider({
        auto: true,
        autoControls: true,
        captions: true,
    });

 function change_tab(id)
 {
  document.getElementById("page_content").innerHTML=document.getElementBy
Id(id+"_desc").innerHTML;
   document.getElementById("page1").className="notselected";
   document.getElementById("page2").className="notselected";
   document.getElementById("page3").className="notselected";
   document.getElementById(id).className="selected";
 }

        </script>


<script>
function change_seminar1()
{
        var seminar_type = document.getElementById("seminar_type1").value;
        window.location="./index.php?seminar_type="+seminar_type;
}
</script>

Connection closed by foreign host.
subbu@subbu:~/Networks/A3$
```
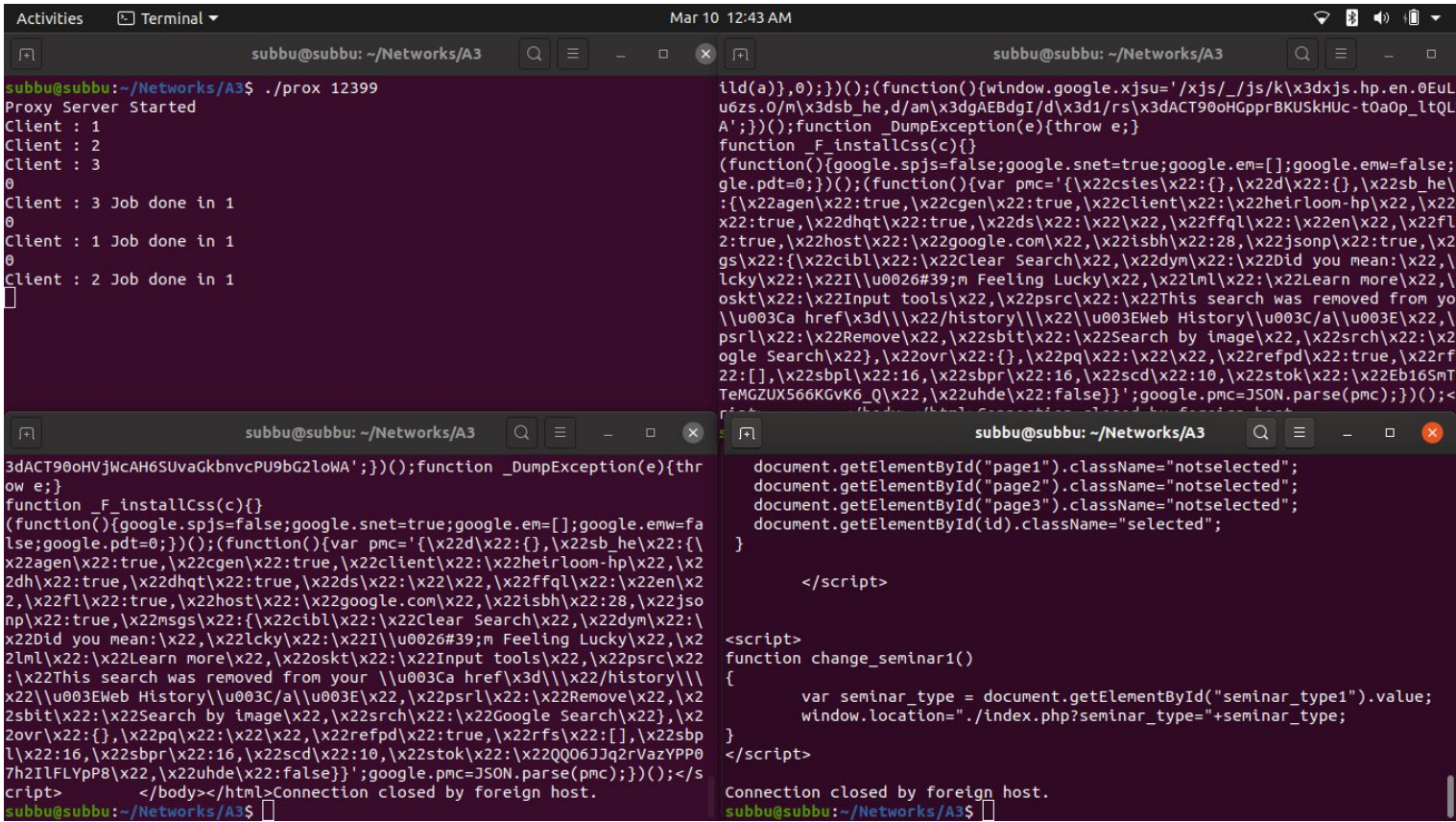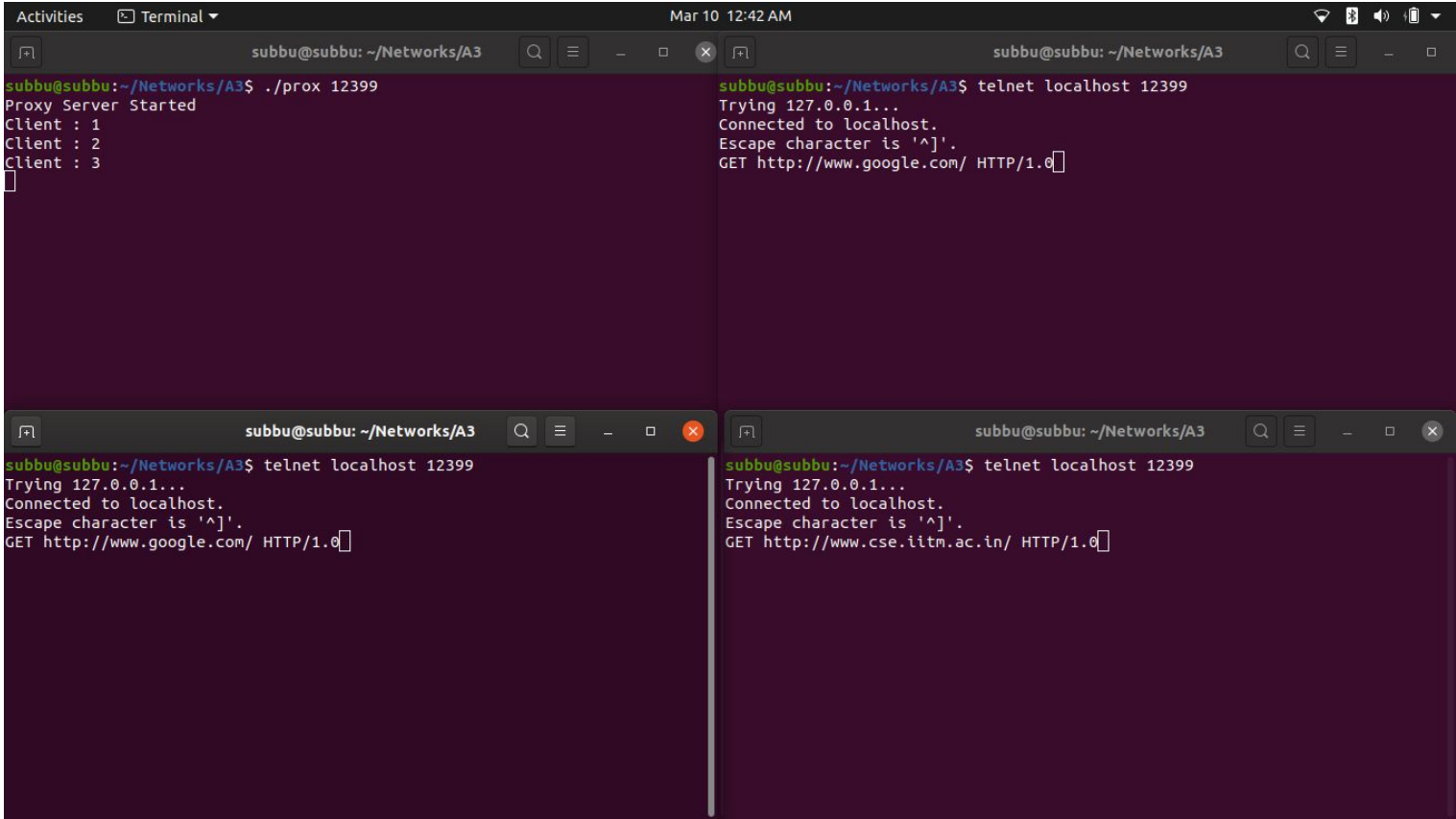
Multiple Client Requests

- Client 1 requesting GET http://www.google.com/ HTTP/1.0
- Client 2 requesting GET http://www.cse.iitm.ac.in/ HTTP/1.0
- Client 3 requesting GET http://www.google.com/ HTTP/1.0

Summary

- We used fork to create multiple processes for handling many clients simultaneously.
- This way of using proxy we can hide our IP and other info from remote servers.
- Saving frequently requested data proxies can improve the performance and reduce load on remote servers.
- We used socket programming functions like
    1. accept : It'll return to you a *brand new socket file descriptor* to use for this single connection and the original one is still listening for more new connections.
    2. send/recv : to send and receive data
    3. bind : used to establish connection.

Proxy Tester compares the cookie number at different instances while testing the Reply from Server So the error in the above Figure