CS F303 Computer Networks: 2019-20 semester II

Assignment 2

Do this assignment in groups of 4. This grouping may be different from the other assignments. Only one group member is required to submit. The deadline for this assignment is 27th February, 2020, 23:59 hours.

We often access the web through a proxy. Squid is a caching and forwarding HTTP web proxy. In this assignment, you have to write a program using Java sockets (learn on your own, do not use anything more than sockets, like HttpURLConnection) to download the main page and logo from www.google.com through a squid proxy, which has been set up by the instructors. The proxy configuration is as follows:
Server: 172.16.108.14
Port: 3128
Login: csf303
Password: csf303

You have to figure out the HTTP protocol for proxy access on your own. It will help to set your browser to the above proxy, access www.google.com from the browser and look at Wireshark traces from your browser while the request is made. Also refer to the HTTP 1.1 RFC. For simplicity, just write a single class called HttpProxyDownload, which should run as follows on Java 7 and 8:

```
$ javac HttpProxyDownload.java
$ java HttpProxyDownload www.google.com 172.16.108.14 3128 csf303 csf303 index.html logo.png
```

where, as would be obvious, the command line arguments are the URL, proxy IP, proxy port, login, password, filename to save html as, filename to save logo as.

Do not hardcode any parameter in your program! Your program should work even if the login/password changes, or Google changes its logo image, or the base URL is changed.

You will submit just the single HttpProxyDownload.java file. The first few lines of the file should contain the BITS emails and names of the group members **exactly in the prescribed format below.** Also briefly describe your approach in comments following the group member details. We will use automated evaluations and marking will be in binary (either it works or doesn't), so it is very important to ensure that you adhere to the guidelines. If you do not adhere to the guidelines and our parser fails to extract your names you will not be marked for this assignment. We will also use heuristics in our parser to check that you have used the correct libraries, have not use anything more than sockets and have not hardcoded parameters. **There will be no manual rechecking for part marking if your program fails the tests.** We will release a test script which you can use to test that the names and IDs are being correctly parsed.

Adhere to the following format at the head of your program (numbers on the left are line numbers, not part of the program):
```
 1. /* BeginGroupMembers */
 2. /* f20151234@hyderabad.bits-pilani.ac.in John Doe */
 3. /* f20153456@hyderabad.bits-pilani.ac.in Jane Doe */
 4. /* f20155678@hyderabad.bits-pilani.ac.in Alice Bob */
 5. /* f20151234@hyderabad.bits-pilani.ac.in Brad Pitt */
 6. /* EndGroupMembers */
 7.
 8. /* Brief description of program...*/
 9. /* ... */
10.
11.     import … etc.
```

Your code will be passed through standard code similarity checkers. If a high match is found between the submissions of two or more groups, the group members will summarily be awarded a grade penalty.