



**FAST- National University of Computer and Emerging Sciences, Karachi.**

**FAST School of Computing**

**Assignment # 2(CLO-2), Spring 2023**

**CS3001- Computer Networks**

**ASSIGNMENT-II (PROXY SERVER)**

**Submission Guidelines:**

- This is a group assignment. Each group can be of two members only.
- This is a programming assignment and the submission will be based on 4-5 minutes demo followed by a short viva on Monday 20<sup>th</sup> March, 2023.
- Each group member has to submit the code and screenshot of the working demo on Google classroom.
- The student ID, names and section must be mentioned clearly during the demo.
- Each group should mark their attendance during the demo.
- Plagiarism in any form will result in straight "F".

**Assignment # 2 (100 points)**

In this assignment, you will implement a web proxy that passes requests and data between multiple web clients and web servers, concurrently (fork a process for each new client request). When you're done with the assignment, you should be able to configure your web browser to use your personal proxy server as a web proxy that is capable of handling the following tasks.

1. HTTP communications between client and server.
2. HTTPs communications between client and server.
3. Caching of popular content using at least two scheduling algorithms.
4. Content filtering (filtering rules should be configurable via admin console).

**References:**

- Guide to Network Programming Using Sockets  
<http://beej.us/guide/bgnet/>
- HTTP Made Really Easy- A Practical Guide to Writing Clients and Servers  
<http://www.jmarshall.com/easy/http/>
- Wikipedia page on fork()  
[https://en.wikipedia.org/wiki/Fork\\_\(system\\_call\)](https://en.wikipedia.org/wiki/Fork_(system_call))