BIRLA INSTITUTE OF TECHNOLOGY & SCIENCE, PILANI (RAJASTHAN)
II SEMESTER 2017-2018
ASSIGNMENT-2

Course No.:	IS F462	**Course Title:**	Network Prog.
Due Date:	4-April-2018	**Maximum Marks:**	60 (10%)

Note:
- Maximum two students per group.
- Upload code in http://nalanda. Name your file idno1_idno2_assignment2.tar .

P1. In this problem you will compare performance of various client designs listed below. Parameters to be compared are i) throughput ii) response time per request iii) total time for transfer of data. The goal of the client is to send requests (totaling 10GB) to a web server in batch mode. The protocol is that client sends a request and server replies converting all letters to CAPILTAL. Server creates a new child per new client.

    (a) blocking IO with select()

    (b) non-blocking I/O with select()

    (c) two processes

    (d) two threads

        Compare (a) to (d) on the parameters listed above.

        The goal of the following two clients is to download 10GB file from a web server.

    (e) non-blocking I/O with non-blocking connect()

    (f) blocking I/O with threads

        Compare (e) and (f) by varying simultaneous connections from 1 to 20 on the parameters listed as (i), (ii), and (iii).

                                                                       [3+6+2+2+8+5=26M]

    Deliverables:
- blockingio.c, nonblockingio.c, twoprocesses.c, twothreads.c, nonblockingconnect.c, multiplethreads.c server.c
- pdf explaining the design features for (a) to (f) and feature selected for (e)   [4M]
- graphs   [6M]

P2. Implement a DNS client that sends a query to 8.8.8.8 with recursion bit on. Your program should support A, AAAA, CNAME, PTR, MX record types.

Write a program called *dns_client.c* that implements the above requirements.

Deliverables:
- dns_client.c
- pdf explaining the design features.   [4M]

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