CS677 NETWORK PROGRAMMING LAB

Course description and objectives:

Lab Objectives: The main objectives of this lab is to impart the students with hands of experience on Unix system calls, Unix Inter Process communication, Remote Procedure Call, Socket programming, Process Synchronization.

Course Outcomes:
- *Hands on experience with C language.*
- *Hands on experience with Unix System Calls.*
- *Hands on experience with Inter Process communication System Calls.*
- *Hands on experience with Inter Process communication System Calls.*
- *Hands on experience with TCP/UDP photocells.*

List of Programs:
1. Write a system program implementing a fileserver in this client sends a pathname to a server the server have to return the contents of the file using 2 pipes.
2. Write a system program for implementing a fileserver where the client sends the pathname and server returns the contents using popen system call.
3. Write a system program for implementing fileserver where client sends a pathname and a server returns the content of the file using fifo.
4. Write a system program for implementing fileserver where the client sends the pathname and server has to return the contents of the file using structured messages (or) message queues.
5. Write a system program for implementing fileserver where the client sends the pathname and server has to return the contents of the file using one standalone server and multiple clients.
6. Write a system program for implementation of fileserver using one posix msgqueue, multiple clients.
7. Aim: Write a system program for implementation of fileserver using one posix msgqueue per client, multiple clients
8. Write a system program for implementation of fileserver using System V msgqueue per client, multiple clients
9. Write a system program to determine the system limits on System V msgqueue
10. Write a system program to determine the system limits on posix msgqueue
11. Write a system program that send System V shared memory data to System V message queue.
12. Write a system program that copies messages from System V message queue to System V Shared memory.
13. Write a system program for the implementation of sequence no increment such that parent and child won't increment the same global stored in the memory.

14. Write a system program for the implementation of sequence no increment using sequence number in mmap shared memory, posix named semaphore locking

15. Write a system program for the implementation of sequence no increment using sequence number in mmap shared memory, posix memory based semaphore locking.

16. Write a system program to determine the system limits on System V semaphores

17. Write a system program for the implementation of System V semaphore based

18. Write a system program for the implementation of multiple producers and multiple consumers problem using posix semaphores .

19. Write a system client-server program for squaring the long integer using Doors .

20. Write a system client-server program for passing descriptor using Doors .

21. Write a system program to demonstrates UNIX Domain Sockets .

22. Write a system program to implement TCP/IPV4 Version of the echo client server.

23. Write a system program to implement UDP/IPV4 Version of the echo client server.

24. Write a system program to implement TCP Version of the daytime client server.

25. Write a system program to implement UDP Version of the daytime client server.

TEXT BOOKS:
1. W.R. Stevens, PHI/Pearson ,"Unix Network Programming".
2. W.R. Stevens, PHI/Pearson,"Unix Network Programming, Inter Process Communication", Edition 2, Volume 2,
3. W.R. Stevens, PHI/Pearson."Unix Network Programming, the Sockets Networking API", Volume 1, Edition 3,