

LIST OF LAB EXPERIMENTS

ACADEMIC YEAR: 2021- 2022

DEPARTMENT : COMPUTER ENGG.

DATE : 16/07/2021


CLASS : T.E


SEMESTER : I

SUBJECT : Laboratory Practice I

LAB Expt.No.	PROBLEM STATEMENT
	Part I: Systems Programming and Operating System Group A Assignments (Any two assignments)
1.	A) Design suitable data structures and implement pass-I of a two-pass assembler for pseudo-machine in Java. Implementation should consist of a few instructions from each category and few assembler directives. B) Design suitable data structures and implement pass-II of a two-pass assembler for pseudo-machine in Java. Implementation should consist of a few instructions from each category and few assembler directives. The output of Pass-I (intermediate code file and symbol table) should be input for pass-II.
2.	A) Design suitable data structures and implement pass-I of a two-pass macro-processor in Java B) Implement pass-II of a two-pass macro-processor in Java. The output of pass-I [assignment 2A] (MNT, MDT and file without any macro definitions) should be input for this assignment.
3.	Write a program to create Dynamic Link Library for any mathematical operation and write an application program to test it. (Java Native Interface / Use VB or VC++).
	Group B Assignments (Any two assignments). Programming language: C/C++/Java/Python
1.	Implement program in to solve Classical Problems of Synchronization using Mutex and Semaphore.
2.	Write a program to simulate CPU Scheduling Algorithms: FCFS, SJF (Preemptive), Priority(Non-Preemptive) and Round Robin (Preemptive).
3.	Write a program to simulate Memory placement strategies – best fit, first fit, next fit and worst fit.
4.	Write a program to simulate Page replacement algorithm.

	Part II :Elective I (any two assignments) Distributed System
1.	Implementation (Unix C programming) of Inter-process communication using socket programming: implementing multithreaded echo server.
2.	Implementation (Unix C programming/Java) of RPC Mechanism.
3.	Simulation of election algorithms (Ring and Bully). (Unix C programming/Java)
4.	Implementation of Clock Synchronization (C/C++/Java/Python): a) NTP b) Lamports clock.
	Part II :Elective I (any two assignments) Human Computer Interface (GUI in Python)
1.	Design a paper prototype for selected Graphical User Interface.
2.	Implement GOMS (Goals, Operators, Methods and Selection rules) modeling technique to model user's behavior in given scenario.
3.	Design a User Interface in Python.
4.	To redesign existing Graphical User Interface with screen complexity.


Subject Co-ordinator
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