PUNE INSTITUTE OF COMPUTER TECHNOLOGY
DHANKAWADI, PUNE–43

LIST OF LAB EXPERIMENTS
ACADEMIC YEAR: 2025-26

Department: **Computer Engineering**
Class: **T.E.**
Subject Name: **Laboratory Practice-I**
Subject code: **310248**

Date:**01/07/2025**
Semester: **I**
Examination scheme:
Term Work: **25**
Practical: **25**

PART I: Systems Programming and Operating System	
GroupA	
Expt. No.	**Problem Statement**
A1-01	Design suitable Data structures and implement Pass-I of a two-pass assembler for pseudo-machine. Implementation should consist of a few instructions from each category and a few assembler directives.
A1-02	Design suitable Data structures and implement Pass-II of a two-pass assembler for pseudo-machine. The output of Pass-I(intermediate code file, symbol table and literal table) should be input for Pass-II.
A2-01	Design suitable data structures and implement Pass-I of a two-pass macro-processor.
A2-02	Design suitable data structures and implement Pass-II of a two-pass macro-processor. The output of Pass-I(MNT, MDT, and intermediate code file without any macro definitions) should be input for Pass-II.
Group B (Any Two Assignments from Sr. No.4 to 7) (Programming language: C/ C++/ JAVA/ Python)	
B1	Write a program to solve Classical Problems of Synchronization using Mutex and Semaphore.
B2	Write a program to simulate CPU Scheduling Algorithms: FCFS,SJF (Preemptive),Priority (Non-Preemptive)and Round Robin (Preemptive).
B3	Write a program to simulate Memory placement strategies–bestfit, firstfit, nextfit and worst fit.
B4	Write a program to simulate Page replacement algorithm.
PART II: ElectiveI (Any Two assignments from each elective subject are compulsory, all the assignments should be covered among different batch students)	
Human Computer Interface (Programming tools recommended: 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 behavioral given scenario.
3	Design a User Interface in Python.
4	To redesign existing Graphical User Interface with screen complexity.

Distributed System	
1	Implementation of Inter-process communication using socket programming :implementing multithreaded echo server.
2	Implementation of RPC Mechanism.
3	Simulation of election algorithms(Ring and Bully).
4	Implementation of Clock Synchronization:a)NTP b)Lamport's clock.

Subject Coordinator
Snehal Parag Shintre

Head, Dept. of Comp. Engg.
Dr. B. A. Sonkamble