Mumbai University
TPCT'S TERNA ENGINEERING COLLEGE, NERUL, NAVI MUMBAI
COMPUTER ENGINEERING DEPARTMENT
SUB: PROCESSOR ARCHITECTURE LAB (PAL)

COURSE: SE
DEPT: Computer Engineering
SUBJECT CODE: CSL403

SEMESTER: IV
YEAR: 2019-2020
DIVISION: A, B and C

Laboratory Outcome

1. Assembling personal Computer(LO1)
2. Designing Basic Building Block Of Computer(LO2)
3. Design various algorithms like Booth's Algorithm for Arithmetic Operation(LO3)
4. Implementation of Various page Replacement policies(LO4)
5. Describe Various I/O busses with merits and Demerits(LO5)
6. Describe Various types of interrupt(LO6)

Sr.No	Experiment Name	LO Mapping
1	Demonstration of computer architecture and organization and study of functional components of computer.	LO1
2	Dismantling and assembling PC	LO1
3	Implement of Full Adder program	LO2
4	Implement Arithmetic Logical Unit using Simulation	LO2
5	Implement Booth's Algorithm	LO3
6	Implement Non restoring Division Algorithm	LO3
7	Implement FIFO page replacement algorithm	LO4
8	Implement LRU page replacement algorithm	LO4
9	Study of Buses like ISA, PCI, USB.	LO5
10	Study on Interrupt Handling.	LO6

Subject Teacher

Ms.Rohini Palve
Ms.Anandi Kawathekar
Mr.Pravin Kalyankar
Mr.A.U.Umbare

APC

HOD

Mumbai University

TPCT'S TERNA ENGINEERING COLLEGE (TEC), NAVI MUMBAI

COMPUTER ENGINEERING DEAPRTMENT

Sub: Analysis of Algorithms (AOA)

COURSE: SE
DEPT: Computer Engineering
SUBJECT CODE: CSL401

SEMESTER: IV
YEAR: 2019-2020
DIV: A/B/C

Lab Outcomes: After successful completion of course, students will be able to,

LO1: Analyze the complexities of various classic problems.
LO2: Solve a problem by applying dynamic programming approach.
LO3: Apply greedy method approach to different problems to find optimal solution.
LO4: Evaluate optimal solution using backtracking and branch-and-bound formulation to deal with hard problems.
LO5: Demonstrate different string matching techniques.
LO6:Implement algorithms using different strategies (Greedy Method, Dynamic Programming, etc).

Sr. No.	Experiments	LO mapping	PO mapping
1.	To implement Selection Sort and analyze its complexity.	LO1	a, b, c, d, e, f, k, l
2	To implement Merge sort using Divide and Conquer Approach and analyze its complexity.	LO1	a, b, c, d, e, f, k, l
3	To implement all pair shortest path using Dynamic Programming Approach.	LO1, LO2	a, b, c, d, e, f, k, l
4	To implement longest common subsequence using Dynamic Programming Approach.	LO1, LO2	a, b, c, d, e, f, k, l
5	To implement Knapsack Problem using Greedy Method Approach.	LO1, LO3	a, b, c, d, e, f, k, l
6	To implement minimum cost spanning trees using Greedy Method Approach – Kruskal Algorithm and Prim's Algorithm.	LO1, LO3	a, b, c, d, e, f, k, l
7	To implement graph coloring using Backtracking technique.	LO1, LO4	a, b, c, d, e, f, k, l
8	To implement 15- puzzle problem using Branch-and-Bound technique.	LO1, LO4	a, b, c, d, e, f, k, l
9	To implement naïve string matching algorithm.	LO1, LO5	a, b, c, d, e, f, k, l
10	To implement Rabin Karp Algorithm.	LO1, LO5	a, b, c, d, e, f, k, l
11	To multiply two longest integers.	LO1, LO6	a, b, c, d, e, f, k, l
12	To implement Huffman coding.	LO1, LO6	a, b, c, d, e, f, k, l

Subject Incharge:
D. K. Chitre
P. B. Hole
Vaishali Malpe

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Mumbai University

TPCT'S TERNA ENGINEERING COLLEGE (TEC), NAVI MUMBAI

COMPUTER ENGINEERING DEAPRTMENT

Sub: Open Source Technology Laboratory (OSTL)

COURSE: SE
DEPT: Computer Engineering
SUBJECT CODE: CSL405

SEMESTER: IV
YEAR: 2019-2020
DIV: A/B/C

Lab Outcomes:

1. To demonstrate basic concepts in python and Perl. [LO1]
2. To explore contents of OOP, files, directories and text processing with python and Perl.[LO2]
3. To develop program for GUI and data structure using built in functions in python.[LO3]
4. To explore Django web framework for developing python based web application.[LO4]
5. To understand function, Package, Object, Classes and database handling using Perl. [LO5]
6. To explore basics of two way communication between client and server using python and Perl [LO6]

Sr. no.	Experiment	LO Mapping
1.	To implement basic commands of Python datatypes (Strings, List, Array, Dictionaries, Tuple).	LO1
2.	To implement Control Statement like if else, while, for loop.	LO1
3.	To create functions, classes and objects using python. Demonstrate exception handling and inheritance.	LO2
4.	To explore Files and directories a. Python program to append data to existing file and then display the entire file b. Python program to count number of lines, words and characters in a file. c. Python program to display file available in current directory.	LO2
5.	To implement GUI with python containing widgets such as labels, textbox, radio, checkboxes and custom dialog boxes.	LO3
6.	To implement menu driven program for data structure using built in function for Stack, Queues etc.	LO3
7.	To demonstrate of simple socket for basic information exchange between server and client.	LO6
8.	To demonstrate web application using Django web framework to demonstrate functionality of user login and registration (also validating user detail using regular expression).	LO4
9.	To explore various data types, loops and conditional statement in Perl.	LO1
10.	To Create functions, packages and modules in Perl.	LO5
11.	To demonstrate use of objects and classes in Perl.	LO5
12.	To use BeautifulSoup for Web Scraping.	LO2
13.	Mini Project (In group 2-3 students).	LO1,2,3, 4,5,6

Subject Teacher

Mr. Shahabade R.V.Shahabade
Mrs. Dhamele
Mrs. Malpe
Ms. Oommen

APC

HOD

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TPCT's, TERNA ENGINEERING COLLEGE (TEC), NAVI MUMBAI
COMPUTER ENGINEERING DEPARTMENT

Sub: Operating System (OS)

COURSE: S.E. - IV Year -2019-2020 **Semester: IV**
DEPT: Computer Engineering **Div: A/B/C**
SUBJECT CODE: CSC 405/ CSL 404

PRACTICAL LIST

Lab Outcomes:

At the end of the course, the students should be able to,

1. Demonstrate the basic Operating System Commands.(CO1)
2. Explore various System Call.(CO2)
3. Execute Shell commands using kernel APIs. (CO3)
4. Interpret and examine different process scheduling algorithms.(CO4)
5. Evaluate Process management techniques and Deadlock handling simulator.(CO5)
6. Analyze and implement different Memory management algorithms.(CO6)

Sr. No	Title	CO mapping
1	Explore the internal commands of linux like ls,chdir,mkdir,chown,chmod,chgrp,ps etc	CO1
2	Implement basic commands of linux like ls, cp, mv and others using kernel APIs	CO1
3	Write shell scripts to do the following A) Display current logged in user and log name. B) Display current shell, home directory, OS type, current path setting, and current working directory. C) Display version of OS, release no., kernel version. D) Illustrate the use of sort, grep, awk command.	CO3
4	E) Write a shell script to display top 10 process in descending order. F) Write a shell script to display process with highest memory usage	CO3
5	Create a child process in Linux using fork system call From the child process obtain the process ID of both child and parent by using getpid and getppid system call. Explore wait and waitpid before termination of process.	CO2
6	Explore the following system calls open, read, write, close, getpid, setpid, getegid,getuid.	CO2
7	Implement process scheduling algorithm : a) FCFS b)SJF	CO4
8	Implement process scheduling algorithm : a) Priority b)RR	CO4
9	To implement Dynamic Partitioning placement algorithms i.e, Best fit, First fit and worst fit.	
10	To implement page replacement policies: **a)** FIFO **b)** LRU.	CO6
11	To implement page replacement policies: **a)** LFU **b)** Optimal.	CO6
12	Using the CPU-OS simulator analyze and synthesize the following: a) Process scheduling algorithm b) Thread creation and synchronization c) Deadlock prevention and avoidance.	CO4,CO5
	Mini Project.	CO1 to CO6

Subject Teacher **APC** **HOD**

1. **Prof. Dnyaneshwar Thombre (Division-A)**
2. **Prof. Pramila Mate (Division-B)**
3. **Prof. Sakure Kishor (Division-C)**

Mumbai University

TPCT's, TERNA ENGINEERING COLLEGE (TEC), NAVI MUMBAI

Department of Computer Engineering

Sub: Computer Graphics (CG) Lab

COURSE: S.E.- IV Year -2019-2020 **Semester: IV**

DEPT: Computer Engineering **Div: A/B/C**

EXPERIMENT LIST

Lab Outcomes:

At the end of the course, the students should be able to:

1. Implement various line, circle, ellipse drawing algorithms.
2. Implement various output and filled area primitive algorithms.
3. Apply the transformations and clipping algorithms on graphical objects.
4. Implement the curve and fractal generation.
5. Implement Parallel and Perspective projection of a 3D object on Projection Plane.
6. Apply Character Generation Techniques and OpenGL.

Prerequisite: C Programming Knowledge, Mathematics

S. No.	Title	LO mapping
1.	Implement DDA and Bresenham Line Drawing algorithms.	LO1
2	Implement Midpoint Circle algorithm.	LO1
3	Implement Area Filling Algorithm: Boundary Fill, Flood Fill.	LO2
4	Implement Scan line Polygon Fill Algorithm.	LO2
5	Implement 2D Transformations: Translation, Scaling, Rotation, Reflection, Shear.	LO3
6	Implement Cohen Sutherland Line Clipping Algorithm.	LO3
7	Implement Sutherland Hodgeman polygon clipping algorithm.	LO3
8	Implement Curve : Bezier for n control points.	LO4
9	Implement Fractal (Koch Curve).	LO4
10	Program to perform projection of a 3D object on Projection Plane : Parallel and Perspective *.	LO5
11	Study and apply basic opengl functions to draw basic primitives. (*)Implement Sierpinsky gasket using OpenGL.	LO6
12	Character Generation : Bit Map method and Stroke Method.	LO6
13	Mini Project.	LO1 to LO6

Subject Incharge APC **HOD**