# TECHNO MAIN SALT LAKE

NAME.....

ROLL NO.....

REGISTRATION NO.....

DEPT.....

SUBJECT NAME & CODE.....

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## Lab Execution Top Sheet for CSE, Sec-X

**Student Name :**
**Roll No :**
**Subject Name :**
**Subject Code :**
**Session :**

| Exp. No. | List of Experiments | Date | CO- Specific Marks | | | | | Total Marks | Remark & Signature |
|---|---|---|---|---|---|---|---|---|---|
| | | | CO1 | CO2 | CO3 | CO4 | CO5 | 40 | |
| 1. | Assignment 1 | | | | | | | | |
| 2. | Assignment 2 | | | | | | | | |
| 3. | Assignment 3 | | | | | | | | |
| 4. | Assignment 4 | | | | | | | | |
| 5. | Assignment 5 | | | | | | | | |
| 6. | Assignment 6 | | | | | | | | |
| 7. | Assignment 7 | | | | | | | | |
| 8. | Assignment 8 | | | | | | | | |
| 9. | Assignment 9 | | | | | | | | |
| 10. | Assignment 10 | | | | | | | | |
| 11. | Assignment 11 | | | | | | | | |
| 12. | Assignment 12 | | | | | | | | |

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| **NAME OF THE PROGRAM:** ***CSE*** | **DEGREE:** ***B.Tech*** |
| **COURSE NAME:** ***Operating System*** | **SEMESTER:** ***5th*** |
| **COURSE CODE:** ***PCC-CS592*** | **COURSE CREDIT:** ***2*** |
| **COURSE TYPE:** ***LAB*** | **CONTACT HOURS:** ***4P*** |

| Exp. No. | **List of Experiments** | **Date** |
|---|---|---|
| **1** | a) Write Shell script to find out Factorial of a given number.<br>b) Write Shell script to determine a given year is leap year or not.<br>c) Write Shell script to find out sum of digits of a given number.<br>d) Write Shell script to generate Fibonacci series up to nth term | **Week 1** |
| 2 | a) Write a shell script for Summation of n natural numbers where the value of n is given in command line<br>b) Write a shell script that sorts an array of integer using any well-known sorting algorithm<br>c) Write a shell script to check an input string is a valid user or not | **Week** 2 |
| **3** | Write a shell script to find out the name, grade, maximum marks holder & total marks from a file.<br>Write a menu driven script to do the following:<br>a) Check permissions of a file<br>b) Check no of files and directories<br>c) Check no of users connected | **Week 3** |
| | a) Write a shell script that sorts an array of integer using any well-known sorting algorithm<br>b) Write a shell script to check an input string is a valid user or not.<br>c) Write a shell script to find out last modification time of a file in current directors | w eek 4 |
| 5 | a) Write a C program to know the PID & PPID of child & parent.<br>b) Create an Orphan process & zombie process. | **Week** 5 |
| 6 | a) Implement IPC between parent and child process where parent will print a message received from the child, who will take the message as user input. Use unnamed pipe for IPC.<br>b) Implement IPC between two processes where procwess-1 will take two strings as user input and send them to process-2.Process-2 will compare them and print the result (SAME OR NOT SAME).Use FIFO for IPC. | **Week** 6 |

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| 7 | a) Write a Program to demonstrate the use of signal. The process will print a message infinitely until an interrupt signal occurs. It will handle the signal and will print a message along with the signal number that it has got<br>b) Write a program to demonstrate the use of signal. Parent process will stop until an alarm received from child process<br>c) Write a Program to create a child process. The parent will send a signal to the child every 5 seconds and the child will handle the signal and check if an input number is a leap year or not | **Week 7** |
| 8 | Write a 'C' program in LINUX to create a thread that determines the summation of N natural numbers using POSIX thread | **Week 8** |
| **9** | a) WAP using semaphore which two process will synchronize each other to print baabbaabbaab pattern.<br><br>b) WAP where a newly created thread will check and number is prime or not, which number is entered in main thread. | **Week 9** |
| 10 | Simulate Producer-Consumer Problem using multi-threading and Semaphore | Week 10 |
| 11 | Simulate Reader-Writer Problem using multi-threading and Semaphore | **Week 11** |
| 12 | Simulate Dining Philosopher Problem using multi-threading and Semaphore | Week 12 |

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# Rubrics for Lab

| Score / Criteria | Excellent (100%) | Good (80%) | Average (60%) | Poor (40%) | Absent (0%) | CO Mapping | PO PSO Mapping |
|---|---|---|---|---|---|---|---|
| **1.** Lab Participation | Students are able to identify the problem/ analyze the problem/Design the solutions and solve the problem applying various algorithms with appropriate test cases; students are able to include boundary conditions in the test cases; students are able to modify the program or design as per requirement of the outcomes from boundary conditions (if any). | Students are able to identify the problem/ analyze the problem/Design the solutions and solve the problem applying various algorithms with appropriate test cases; students are able to include boundary conditions in the test cases. | Students are able to identify the problem/ analyze the problem/Design the solutions and solve the problem applying various algorithms with appropriate test cases. | Student is not able to understand/analyze/design the problem or interpret the problem into specified language | | CO1, CO2 | PO1, PO2, PSO1, PSO2 |

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| **2.** Effective utilization of the modern tools and their properties, compilers | Students are able to exploit the full potential of the tool/property/ topic under consideration for the specified language | Students are able to exploit the important features of the tool/property /topic under consideration for the specified language | Students are able to use specified tool/property/topic as per the problem requirement only under consideration for the specified language | Students are not able to use tool/property /topic under consideration for the specified language | | CO3 | PO5 |
| **3.** Individual or team work | Students are able to work effectively, sincerely and ethically as an individual or in a member of a team | Students are able to work ethically as an individual or in a member of a team | Students are able to work as an individual or in a member of a team | Students are not able to work effectively, sincerely and ethically as an individual or in a member of a team | | CO4 | PO9 |
| **4.** Documentation | Students will prepare effective documentation of lab classes mentioning problem statement, input-output, appropriate test cases with boundary conditions | Students will prepare effective documentation of lab classes mentioning problem statement, input-output, test cases | Students will prepare effective documentation of lab classes mentioning problem statement, input-output | Students will not prepare effective documentation of lab classes mentioning objective, input-output, test cases, boundary conditions | | CO5 | PO10 |