

MCA First Semester

Operating System Lab Assignments Course code (CCA11)

1. Perform some unix-commands in your system:

- (a) Basic commands: pwd, cal, echo, date, who, whoami, help, man.
- (b) Files and directories commands: cd, ls, ls -a, ls -l, mkdir, touch, cp, mv, rm.
- (c) Other commands: cat, head, tail, wc, passwd, chmod.

2. Perform some vi-editor commands in your system:

- (a) a –append text after the cursor current position, A –append text at the end of current line.
- (b) i – insert text, I –insert text at the beginning of the current lines.
- (c) o – insert a blank line below the current link and allow to append text.
O – insert a blank line above the current link and allow to append text.
- (d) x –To delete a character from a file, X- To delete the character before the cursor
- (e) dw- To delete a words move the cursors to the first letter of words.
- (f) dd – To delete a whole line.
- (g) cw – replace the words, C-replacing lines.

3. Perform some shell scripting Program in your system:

- 1. Write a shell script to print hello world on your screen.
- 2. Write a shell script to evaluate arithmetic operations.
- 3. Write a shell script to calculate simple interest.
- 4. Write a shell Script to determine largest among three integer number.
- 5. Write a shell script to determine a given year is leap year or not.
- 6. Write a shell script to print multiplication table of given number using for loop and while loop.
- 7. Write a shell script to print factorial of any number.
- 8. Write a shell script to compare two strings.
- 9. Write a shell script to implement menu driven program to perform all arithmetic operation using case statement.
- 10. Write a shell script to do:(i). display list of directory contents(ii). Name of current directory (iii).Who is logged on (iv). Long listing of directory contents according to choice of user.

11. Implementation of CPU scheduling algorithms (a) FCFS (b) Round Robin (c) SJF

12. Implement all file allocation strategies (a) Sequential (b) Linked (c) Indexed

13. Implement Bankers algorithm for Dead Lock Avoidance Algorithms.

14. Implement all page replacement algorithms a) FIFO b) LRU c) LFU

15. Implement Disk scheduling algorithms (a) Scan (b) C-Scan (c) Look (d) C-Look



राष्ट्रीय प्रौद्योगिकी संस्थान रायपुर
NATIONAL INSTITUTE OF TECHNOLOGY RAIPUR
(Institute of National Importance)
G.E. Road, Raipur - 492010 (CG)

Phone: (0771) 22 54 200
Fax: (0771) 22 54 600
Email: director.nitr@rediffmail.com
Website: www.nitr.ac.in

Computer Lab - 102 (Problem Solving and Programming Lab Assignments)

1. Generate different patterns using numbers, symbols and alphabets.
2. Perform basic arithmetic operations (LCM, GCD, Check Prime Number, Armstrong Number, Factorial using Recursion, Prime factors, Radix Conversion, Palindrome).
3. Perform arithmetic operations on Arrays (Addition, Subtraction, Multiplication, Transpose, Inverse, Sum of Diagonal elements).
4. Perform Bubble Sort, Selection Sort, and Binary Search Operation on Array.
5. Create a single program to perform different tasks (reverse the string, count the number of characters in string, copy the one string to other string, count no. of vowels, consonants in each word of a sentence and no. of punctuation in sentence, arrange the alphabets of a string in ascending order.) using switch, if else, loop and single dimension character array without using library function.
6. Generate different series (Fibonacci series, Triangular, Pentagonal and Hexagonal number Series, The Lazy Caterer's Sequence, Sine, Cosine, Log, and Tangent series).
7. Draw the flowchart and Write C Program to compute $\sin(x)$ using Taylor series approximation given by $\sin(x) = x - (x^3/3!) + (x^5/5!) - (x^7/7!) + \dots$. Compare the result with the built-in Library function and print both the results with appropriate messages.
8. Perform operation on string using pointers and library functions.
9. Solve Trigonometry and Geometry related problems.
10. Define Macros to perform arithmetic operations.
11. Create your own header file and include it in your main file.
12. Implement a program using structure and union.
13. Implement a program using enum.
14. Given a sentence, return the positions of a keyword and replace it by another word only if it forms a complete word.
15. Implement dynamic Array using `calloc()`, `malloc()`, `realloc()` and `free()`.
16. Implement file handling program to create, read, write and append simple text.
17. Copy content of an existing file to a new file.
18. Implement Recursion Problem, Hash Function.
19. Implement Some Problem from Numerical Analysis.
20. Design a webpage containing Name, Mobile No., Email, Password, Confirm password and Validate using JavaScript.

17.6.18