C Programming Lab Practice - Set 1

Your Name

Created on: September 11, 2024
Deadline: September 30, 2024

1 Introduction

This document contains the set of exercises for the basic C programming lab practice. The exercises aim to help students learn and apply basic C programming concepts like variables, loops, functions, arrays, and more.

2 Instructions

- All programming exercises should be completed in a Linux environment.
- The code should be tested and run on a Linux system. Ensure that your programs are free from errors.
- Submit your solutions in the form of source code files (`.c`) and a brief report by the deadline.
- Deadline for submission: **September 30, 2024**.
- Created on: **September 11, 2024**.

3 C Programming Questions

1. Write a C program to print `'Hello, World!'`.
2. Write a C program to add two integers.
3. Write a C program to find the maximum of two numbers.
4. Write a C program to swap two numbers using a temporary variable.

5. Write a C program to swap two numbers without using a temporary variable.
6. Write a C program to check whether a number is even or odd.
7. Write a C program to find the factorial of a number.
8. Write a C program to check whether a number is prime.
9. Write a C program to print the Fibonacci series up to n terms.
10. Write a C program to reverse a number.
11. Write a C program to check whether a number is a palindrome.
12. Write a C program to find the sum of digits of a number.
13. Write a C program to find the largest of three numbers.
14. Write a C program to find the GCD (Greatest Common Divisor) of two numbers.
15. Write a C program to find the LCM (Least Common Multiple) of two numbers.
16. Write a C program to check whether a character is a vowel or consonant.
17. Write a C program to check whether a year is a leap year.
18. Write a C program to generate the multiplication table of a given number.
19. Write a C program to calculate the power of a number using a loop.
20. Write a C program to print the ASCII value of a character.
21. Write a C program to count the number of digits in a number.
22. Write a C program to check whether a number is an Armstrong number.
23. Write a C program to sort an array in ascending order.
24. Write a C program to find the largest element in an array.
25. Write a C program to find the sum of elements in an array.
26. Write a C program to search for an element in an array using linear search.

27. Write a C program to reverse an array.
28. Write a C program to insert an element at a specific position in an array.
29. Write a C program to delete an element from an array.
30. Write a C program to merge two arrays.
31. Write a C program to find the transpose of a matrix.
32. Write a C program to multiply two matrices.
33. Write a C program to add two matrices.
34. Write a C program to check whether a matrix is symmetric.
35. Write a C program to find the sum of the main diagonal elements of a matrix.
36. Write a C program to find the length of a string without using the `strlen()` function.
37. Write a C program to reverse a string.
38. Write a C program to concatenate two strings.
39. Write a C program to count the number of vowels in a string.
40. Write a C program to check whether a string is a palindrome.
41. Write a C program to find the frequency of characters in a string.
42. Write a C program to sort a string in alphabetical order.
43. Write a C program to swap two strings.
44. Write a C program to copy one string into another.
45. Write a C program to find the sum of all elements in a 2D array.
46. Write a C program to calculate the sum of the elements of each row and column of a matrix.
47. Write a C program to convert a binary number to decimal.
48. Write a C program to convert a decimal number to binary.

49. Write a C program to find the sum of n natural numbers using recursion.

50. Write a C program to print the first n prime numbers.

51. Write a C program to find the cube of a number.

52. Write a C program to calculate simple interest using $\text{SI} = \frac{P \cdot T \cdot R}{100}$.

53. Write a C program to print the multiplication table of a number using a `for` loop.

54. Write a C program to check if a number is positive, negative, or zero.

55. Write a C program to find the sum of first n natural numbers.

56. Write a C program to print all prime numbers between 1 and n.

57. Write a C program to check if a given number is a palindrome.

58. Write a C program to calculate the average of an array of integers.

59. Write a C program to find both the minimum and maximum elements in an array.

60. Write a C program to count the number of vowels in a string.