PRACTICAL EXERCISE PRF192

I. Required knowledge: Operators, Data types, Variables and expression, Basic input/output

1. Write a C program to print "Hello World!"

2. Write a C program to print student informaion: student name, student ID, Class ID, date of birth and mobile number.
   Student Name:
   Student ID:
   Class ID:
   Date of birth *Mobile Number:*

3. Write a program in C that reads a forename, surname and year of birth and display the names and the year one after another sequentially
   Ex: Expected Output :
   Input your firstname: Tom
   Input your lastname: Davis
   Input your year of birth: 1982
   Tom Davis 1982

4. Write C program to print following characters:

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/****************************************/
/******* HUONG DAN CHEP TAP TIN *******/
/=>B1. Vao thu muc "C:\TUYENTAP\thotinh.txt"/
/=>B2. Click chuot phai vao tap tin thotinh.txt      /
/=>B3. Chon copy tu menu tat                         /
/=>B4. Chon vi tri can luu, click phai chon paste  /
/****************************************/
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5. Write a program to input two numbers and find their sum.

6. Write a program to input two numbers and find their quotient and modulus.

7. Write a program to input two numbers and perform all arithmetic operations: sum, difference, product, quotient and modulus.

8. Write a program to input length and width of a rectangle and calculate perimeter and area of the rectangle.

9. Write a program to input radius of a circle from user and find diameter, circumference and area of the circle.

10. Write a program to input a positive integer N with 2 digits from the keyboard, output to the screen the sum of the digits of N.
Ex: Input: N=48. Output: 4+8=12.

11. Write a program to input temperature in degrees Celsius and convert to Fahrenheit, using the conversion formula:

$$°F = \left(°C * \frac{9}{5}\right) + 32$$

12. Write a program that allows input hours, minutes and seconds and convert it to seconds and print the result.
Ex: Input: h=1, m=2, s=2. Output: 3722 seconds.

13. Write a program in C that takes minutes as input, and display the total number of hours and minutes

14. Write a program to input number of days from user and convert it to years, weeks and days.
Ex: Input: Enter days: 373.
Output: Years: 1
Weeks: 1
Days: 1

15. Write a program to enter length in centimeter and convert it into meter and kilometer.

16. Write a program to calculate the perimeter and area of shapes: triangles, squares, rectangles and circles with the information that needs to be entered from the keyboard.

II. Conditional Statement (if…else, switch….case)

17. Write a program to enter two integers a and b. Print the maximum value to the screen.

18. Write a program to check whether an integer entered number by the user is odd or even.

19. Write a program to check number is positive, negative or zero.

20. Write a program to find the largest number among three number.

21. Write a program input three numbers a,b,c. Print to the screen in ascending order of numbers.

22. Write a program to find the largest number using Conditional Operator.

23. Write a C program to find whether a given year is a leap year or not.
(A leap year is a year that is divisible by 4 and not by 100. Or it is divisible by 400)
Ex: Enter year : 2016
Output *: 2016 is a leap year*.

24. Write a program to solve the linear equation of one variable*:* $ax + b = 0$.

25. Write a program to solve quadratic equation *:* $ax^2 + bx + c = 0$.

26. Write a program to read temperature in centigrade and display a suitable message according to temperature state below:
Temp < 0 then Freezing weather
Temp 0-10 then Very Cold weather
Temp 10-20 then Cold weather
Temp 20-30 then Normal in Temp
Temp 30-40 then Its Hot
Temp >=40 then Its Very Hot

27. Write a program to input a three-digit integer n. Output to the screen in ascending order of digits.
Ex: Enter n : 291
Output : 129

28. Write a program in C to read any day number in integer (2….8) and display day name in the week
Test Data : 4
Expected Output :Wednesday

III. Loop

29. Calculate: $n!$ $(n > 0)$

30. Calculate: $S(n) = 1 + 3 + 5 + \cdots . + (2 \times n + 1), \quad n \geq 0$

31. Calculate: $P(n) = 1.3.5 \ldots (2.n + 1), \quad n \geq 0$

32. Calculate: $S(n) = 1 + 1.2 + 1.2.3 + \cdots + 1.2.3 \ldots . n, \quad n > 0)$

33. Calculate: $S(n) = 1 - 2 + 3 - 4 + \cdots + (-1)^{n+1} n, \ n > 0$

34. Calculate: $S(n) = 1 + \frac{1}{2} + \frac{1}{3} + \cdots + \frac{1}{n}, \quad n > 0$

35. Write a program to count the number of divisors of a positive integer N.
Ex: Enter n : 12
Output : 6

36. Write a program to input two positive integers a and b. Find the greatest common divisor and least common multiple of a and b.

37. Write a program to input a positive integer n. Checks whether n is prime or not.

IV. ARRAY

38. Write a program in C to store elements in an array and print it.

39. Write a program in C to read n number of values in an array and display it in reverse order

40. Write a program in C to find the sum of all elements of the array

41. Write a program in C to find the maximum and minimum element in an array

42. Write a program in C to separate odd and even integers in separate arrays.

43. Write a program in C to sort elements of array in ascending order

44. Write a program in C to sort elements of the array in descending order

V. MATRIX

45. Write C Program to Add Two Matrices

46. Write a program in C to find the maximum and minimum element in a matrix

47. Write C Program to find sum of each row and columns of a matrix

VI. STRING, CHAR