1. While purchasing certain items, a discount of 10% is offered if the quantity purchased is more than 1000. If quantity and price per item are input through the keyboard, write a program to calculate the total expenses.
2. The current year and the year in which the employee joined the organization are entered through the keyboard. If the number of years for which the employee has served the organization is greater than 3 then a bonus of Rs. 2500/- is given to the employee. If the years of service are not greater than 3, then the program should do nothing
3. In a company an employee is paid as under: If his basic salary is less than Rs. 1500, then HRA = 10% of basic salary and DA = 90% of basic salary. If his salary is either equal to or above Rs. 1500, then HRA = Rs. 500 and DA = 98% of basic salary. If the employee's salary is input through the keyboard write a program to find his gross salary.
4. If cost price and selling price of an item is input through the keyboard, write a program to determine whether the seller has made profit or incurred loss. Also determine how much profit he made or loss he incurred
5. A five-digit number is entered through the keyboard. Write a program to obtain the reversed number and to determine whether the original and reversed numbers are equal or not.
6. If the ages of Ram, Shyam and Ajay are input through the keyboard, write a program to determine the youngest of the three.
7. Write a program to check whether a triangle is valid or not, when the three angles of the triangle are entered through the keyboard. A triangle is valid if the sum of all the three angles is equal to 180 degrees.
8. Given the length and breadth of a rectangle, write a program to find whether the area of the rectangle is greater than its perimeter. For example, the area of the rectangle with length = 5 and breadth = 4 is greater than its perimeter.
9. Given three points (x1, y1), (x2, y2) and (x3, y3), write a program to check if all the three points fall on one straight line.
10. The marks obtained by a student in 5 different subjects are input through the keyboard. The student gets a division as per the following rules:

    Percentage above or equal to 60 - First division
    Percentage between 50 and 59 - Second division
    Percentage between 40 and 49 - Third division
    Percentage less than 40 - Fail

    Write a program to calculate the division obtained by the student.

Solve above program by Nested if else , if ladder(logical operator) and elseif

11. A company insures its drivers in the following cases:
    - If the driver is married.
    - If the driver is unmarried, male & above 30 years of age.
    - If the driver is unmarried, female & above 25 years of age.

    In all other cases the driver is not insured. If the marital status, sex and age of the driver are the inputs, write a program to determine whether the driver is to be insured or not.

Solve above program by Nested if else , if ladder(logical operator) and elseif

12. Write a C program to find maximum between two numbers.
13. Write a C program to find maximum between three numbers.
14. Write a C program to check whether a number is negative, positive or zero.
15. Write a C program to check whether a number is divisible by 5 and 11 or not.
16. Write a C program to check whether a number is even or odd.
17. Write a C program to check whether a year is leap year or not.
18. Write a C program to check whether a character is alphabet or not.
19. Write a C program to input any alphabet and check whether it is vowel or consonant.
20. Write a C program to input any character and check whether it is alphabet, digit or special character.
21. Write a C program to check whether a character is uppercase or lowercase alphabet.
22. Write a C program to input week number and print week day.
23. Write a C program to input month number and print number of days in that month.
24. Write a C program to count total number of notes in given amount.
25. Write a C program to input angles of a triangle and check whether triangle is valid or not.
26. Write a C program to input all sides of a triangle and check whether triangle is valid or not.
27. Write a C program to check whether the triangle is equilateral, isosceles or scalene triangle or right angled traingle.
28. Write a C program to find all roots of a quadratic equation.
29. Write a C program to calculate profit or loss.
30. Write a C program to input marks of five subjects Physics, Chemistry, Biology, Mathematics and Computer. Calculate percentage and grade according to following:
    Percentage >= 90% : Grade A
    Percentage >= 80% : Grade B
    Percentage >= 70% : Grade C
    Percentage >= 60% : Grade D
    Percentage >= 40% : Grade E
    Percentage < 40% : Grade F
31. Write a C program to input basic salary of an employee and calculate its Gross salary according to following:
    Basic Salary <= 10000 : HRA = 20%, DA = 80%
    Basic Salary <= 20000 : HRA = 25%, DA = 90%
    Basic Salary > 20000 : HRA = 30%, DA = 95%
32. Write a C program to input electricity unit charges and calculate total electricity bill according to the given condition:
    For first 50 units Rs. 0.50/unit
    For next 100 units Rs. 0.75/unit
    For next 100 units Rs. 1.20/unit
    For unit above 250 Rs. 1.50/unit
    An additional surcharge of 20% is added to the bill

33. Any year is entered through the keyboard, write a program to determine whether the year is leap or not. Use the logical operators && and ||.

34. Any character is entered through the keyboard, write a program to determine whether the character entered is a capital letter, a small case letter, a digit or a special symbol. The following table shows the range of ASCII values for various characters.

Characters	ASCII Values
A – Z	65 – 90
a – z	97 – 122
0 – 9	48 – 57
special symbols	0 - 47, 58 - 64, 91 - 96, 123 - 127

35. A library charges a fine for every book returned late. For first 5 days the fine is 50 paise, for 6-10 days fine is one rupee and above 10 days fine is 5 rupees. If you return the book after 30 days your membership will be cancelled. Write a program to accept the number of days the member is late to return the book and display the fine or the appropriate message.
36. An Insurance company follows following rules to calculate premium.

    (1) If a person's health is excellent and the person is between 25 and 35 years of age and lives in a city and is a male then the premium is Rs. 4 per thousand and his policy amount cannot exceed Rs. 2 lakhs.

    (2) If a person satisfies all the above conditions except that the sex is female then the premium is Rs. 3 per thousand and her policy amount cannot exceed Rs. 1 lakh.

    (3) If a person's health is poor and the person is between 25 and 35 years of age and lives in a village and is a male then the premium is Rs. 6 per thousand and his policy cannot exceed Rs. 10,000.

    (4) In all other cases the person is not insured.

    Write a program to output whether the person should be insured or not, his/her premium rate and maximum amount for which he/she can be insured.

37. A university has the following rules for a student to qualify for a degree with A as the main subject and B as the subsidiary subject:
    (a) He should get 55 percent or more in A and 45 percent or more in B.
    (b) If he gets than 55 percent in A he should get 55 percent or more in B. However, he should get at least 45 percent in A.
    (c) If he gets less than 45 percent in B and 65 percent or more in A he is allowed to reappear in an examination in B to qualify.
    (d) In all other cases he is declared to have failed.

Write a program to receive marks in A and B and Output whether the student has passed, failed or is allowed to reappear in B.

38. Example 2.6: Write a program to calculate the salary as per the following table:

Gender	Years of Service	Qualifications	Salary
Male	>= 10	Post-Graduate	15000
	>= 10	Graduate	10000
	< 10	Post-Graduate	10000
	< 10	Graduate	7000
Female	>= 10	Post-Graduate	12000
	>= 10	Graduate	9000
	< 10	Post-Graduate	10000
	< 10	Graduate	6000