1 Take values of length and breadth of a rectangle from user and check if it is square or not.

2 Write a program to check whether a entered character is lowercase (a to z) or uppercase (A to Z).

3 Write a program to get a number from the user and print whether it is positive or negative.

4 Write a program that reads a floating-point number and prints "zero" if the number is zero. Otherwise, print "positive" or "negative". Add "small" if the absolute value of the number is less than 1, or "large" if it exceeds 1,000,000.

5 Write a program that takes a number from the user and generates an integer between 1 and 7. It displays the weekday name.

6 Write a program that requires the user to enter a single character from the alphabet. Print Vowel or Consonant, depending on user input. If the user input is not a letter (between a and z or A and Z), or is a string of length > 1, print an error message.

7 Write a program to display the cube of the given number up to an integer.

8 Write a program that displays the sum of n odd natural numbers.

9 Write a program that accepts three numbers from the user and prints "increasing" if the numbers are in increasing order, "decreasing" if the numbers are in decreasing order, and "Neither increasing or decreasing order" otherwise.

10 Write a program that prompts the user to enter three names. Your program should display the names in descending order.

11 Write a program to calculate the monthly telephone bills as per the following rule:

Minimum Rs. 200 for up to 100 calls.

Plus Rs. 0.60 per call for next 50 calls.

Plus Rs. 0.50 per call for next 50 calls.

Plus Rs. 0.40 per call for any call beyond 200 calls.

12 Write a program to determine whether the year is a leap year or not.

13 Write a program that asks the user to enter 3 numbers in three variables and then displays the largest number.

14 Write a program that asks the user to enter a number and displays whether entered number is an odd number or even number.

15 A student will not be allowed to sit in exam if his/her attendance is less than 75%.

Take following input from user

Number of classes held

Number of classes attended.

And print

percentage of class attended

Is student is allowed to sit in exam or not.

16 A school has following rules for grading system:

a. Below 25 - F

b. 25 to 45 - E

c. 45 to 50 - D

d. 50 to 60 - C

e. 60 to 80 - B

f. Above 80 - A

Ask user to enter marks and print the corresponding grade.

17 A company decided to give bonus of 5% to employee if his/her year of service is more than 5 years.

Ask user for their salary and year of service and print the net bonus amount.

18 Create a program to check if a number is a perfect number.

19 Implement a program to reverse a string without using built-in functions.

20 Develop a program to perform matrix multiplication.

21 Implement a Python program to check if a given string is a valid IP address.

22 Create a program to calculate the average of N numbers.

23 Create a program to check if a number is a power of two.

24 Create a program to calculate the compound interest.

25 Implement a program to find the reverse of a given number.

26 Write a Python program to check if a given number, is a strong number.

27 Implement a program to calculate simple interest.

28 Create a program to simulate a simple calculator with basic operations.

29 Implement a program to check if a given number, is a perfect square.

30 Develop a program to find the smallest among three numbers.

31 Write a program to check if a number is an Armstrong number.

32 Create a program to calculate the area of different geometric shapes (circle, rectangle, triangle).

33 Write a program to convert temperature from Celsius to Fahrenheit and vice versa.

34 Create a program to determine if a number is prime.

35 Develop a program to find the roots of a quadratic equation.

36 Given two strings, write a program to determine whether they are

anagrams.

37 Create a program to calculate the sum of digits of a given number.

38 Implement a program to find the LCM of two numbers.

39 Write a program to find the prime factors of a number.

40 Create a program to check if a number is a power of two.

41 Develop a program to check if a number is an abundant number.

42 Write a Python program to calculate the perimeter of a square.

43 A triangle is valid if the sum of all the three angles is equal to 180 degrees. Write a program that asks the user to enter three integers as angles and check whether a triangle is valid or not.

44 Bank Loan Approval:

Implement a program to simulate a bank loan approval system. Consider factors such as credit score, income, and loan amount. Use nested if statements to determine whether the loan should be approved, rejected, or needs further evaluation.

45 Flight Booking System:

Develop a program for a flight booking system. Consider factors such as seat availability, passenger age, and class preference. Use nested if statements to determine if a booking is successful and calculate the ticket price.

46 Medical Diagnosis:

Create a program that simulates a medical diagnosis system. Consider symptoms input by the user and use nested if statements to suggest possible illnesses or conditions.

47 Automated Teller Machine (ATM):

Implement an ATM system where users can withdraw money, check balances, and deposit funds. Use nested if statements to validate transactions and handle various scenarios such as insufficient funds.

48 Game Character Interaction:

Design a text-based game where the player controls a character. Use nested if statements to handle different interactions based on the player's choices, leading to multiple possible outcomes.

49 Smart Home Automation:

Develop a program for a smart home system. Use nested if statements to simulate the automation of lights, temperature, and security based on user preferences and environmental conditions.

50. Develop a program with a dynamic menu system where users can navigate through different options. Use nested if statements to handle user input and execute the corresponding functionality.