1. **Uppercase or Lowercase Check**
   Write a program to check whether an input character is uppercase or lowercase.
2. **Count Characters in a String**
   Count the number of vowels, consonants, digits, and special characters in a given string.
3. **Capitalize First Letter of Each Word**
   Given a sentence, capitalize the first letter of every word.
4. **String Palindrome Check**
   Check whether a given string is a palindrome.
5. **Reverse Words in a String**
   Reverse each word or the order of words in a given sentence.
6. **Jumble a String**
   Rearrange or jumble the characters of a given string as per logic.
7. **Decode Message (String Reverse)**
   Decode a message by reversing the given string.
8. **Alternate String Merge**
   Merge two strings by taking alternate characters from each string.
   Example: abc, defghi → adbecfghi.
9. **Even or Odd Number Check**
   Determine whether a given number is even or odd.
10. **Complement of a Number**
    Find the complement of a given number.
11. **Count Set Bits**
    Count the number of set bits (1s) in the binary representation of a number.
12. **Binary Inversion and Conversion**
    Convert a number to binary, invert its bits, then convert the result back to decimal.
13. **Check Decimal Value in Number**
    Check whether a given number contains a decimal (fractional) part.
14. **Binary to Decimal Conversion**
    Convert a given binary number into its decimal equivalent.
15. **Pattern Printing**
    Print the pattern:

16. 1

17. 212

18. 32123

19. 4321234

20. **Area and Circumference Using Constructor**
    Create a class to calculate the area of a square and circumference of a circle using constructors.

21. **Car Parking Class**
    Design a class for a car parking system using constructor-based initialization.

22. **Date and Time Class (Get/Set)**
    Create a class to store date and time using getter and setter methods.

23. **Override toString Method**
    Override the toString() method to display object details meaningfully.

24. **Email Validation Class**
    Create a class with constructor and a function to validate an email address (must contain @ and .).

25. **Reverse Singly Linked List**
    Write a program to reverse a singly linked list.

26. **Copy Linked List**
    Copy all elements of one linked list into another linked list.

27. **Count Nodes in Circular Linked List**
    Count the total number of nodes present in a circular linked list.

28. **Find Length of Circular Linked List**
    Determine the size or length of a circular linked list.

29. **Insert in Sorted Circular Linked List**
    Insert an element into a sorted circular linked list such that the order remains ascending.

30. **Split Circular Linked List**
    Split a circular linked list into two equal halves.

31. **Reverse Circular Linked List**
    Reverse a circular linked list.

32. **Detect Cycle in Circular Linked List**
    Detect whether a cycle exists in a circular linked list.

33. **Swap Nodes in Doubly Linked List**
    Swap two given nodes in a doubly linked list.

34. **Rearrange Even-Odd Nodes (DLL)**
    Rearrange a doubly linked list so that even-positioned nodes appear first, followed by odd-positioned nodes.

35. **Segregate Even and Odd Nodes (DLL)**
    Segregate even-valued nodes and odd-valued nodes in a doubly linked list.

36. **Inheritance Demonstration**
    Create a parent class and child classes to demonstrate inheritance.

37. **Polymorphism with Employee Class**
    Demonstrate polymorphism using a base Employee class and subclasses like CSE, ME, and ECE.

38. **Formatted Output Using printf**
    Create a class that calculates values and displays them using System.out.printf() with rounding.

39. **SecurityGate Class Simulation**
    Design a class to simulate a security gate that tracks total visitors and total cash collected, where normal visitors pay Rs. 50 and VIPs do not.

40. **Months and Days Increment Class**
    Implement a class that stores month and day values and includes an increment function that correctly updates days based on month length (30, 31, February).