Java Practice Exercises: Conditionals & Loops

EASY LEVEL QUESTIONS

1. Check Positive or Negative

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

2. Even or Odd Checker

   - Input a number and print whether it is even or odd using if-else.

3. Multiplication Table

   - Print the multiplication table of a given number up to 10 using a for loop.

4. Sum of First N Natural Numbers

   - Take n as input and print the sum of numbers from 1 to n.

5. Find Maximum of 3 Numbers

   - Use if-else or else-if ladder to find the largest among three numbers.

6. Simple Grading System

   - Input marks and print grades:

     90-100 A, 75-89 B, 50-74 C, <50 Fail.

MEDIUM LEVEL QUESTIONS

7. Check for Prime Number

   - Input a number and check whether it is a prime number.

8. Fibonacci Series

   - Print the first n numbers of the Fibonacci sequence.

9. Factorial of a Number

   - Input a number and print its factorial using a loop.

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10. Number Reversal

- Reverse a number using a while loop. (e.g., 1234 4321)

11. Palindrome Number

- Check if a number is a palindrome (same forward and backward).

12. Armstrong Number

- Check if a number is an Armstrong number (e.g., 153 1 + 5 + 3 = 153).

13. Count Digits

- Count how many digits a number has (e.g., 12345 has 5 digits).

14. Sum of Digits

- Find the sum of digits of a number (e.g., 123 1+2+3 = 6).

HARD LEVEL QUESTIONS

15. Number Pattern Printing

- Print pattern:

  1

  12

  123

  1234

  12345

16. Check for Strong Number

- A number is strong if sum of factorial of digits equals the number. (e.g., 145)

17. Perfect Number

- A number is perfect if sum of its proper divisors equals the number (e.g., 6).

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18. Find GCD and LCM of Two Numbers
    - Use loops and conditionals to calculate both.

19. Print All Prime Numbers Between 1 to N
    - Input N and print all primes between 1 to N.

20. Decimal to Binary Conversion
    - Convert a decimal number to binary using loops.

21. Number to Words
    - Input: 123 Output: One Two Three (Use switch for each digit)

22. Frequency of Each Digit
    - Input: 11234512 Output: 1 3 times, 2 2 times, etc.

BONUS CHALLENGE

23. Magic Number Detector
    - Recursive digit sum until single digit. If 1, it's a Magic Number.

24. First N Prime Palindromes
    - Palindromes that are also prime. e.g., 2, 3, 5, 7, 11, 101, etc.

25. Menu-Driven Calculator
    - Use switch to support add, subtract, multiply, divide, modulo.