

Java Logic Building Practice Guide (Beginner → Advanced)

■ Part 1 — Beginner Level

1. Print even numbers from 1–100

Hint: Use a for loop and check if $(i \% 2 == 0)$

2. Find factorial of a number

Hint: Use a loop or recursion to multiply numbers from 1 to n

3. Reverse a number

Hint: Use % and / operators to extract digits

4. Check palindrome number

Hint: Compare reversed number with the original number

5. Print Fibonacci series

Hint: Use loop or recursion with previous two terms sum

■ Part 2 — Intermediate Level

1. Find largest and smallest number in an array

Hint: Initialize max and min with first element and iterate

2. Count vowels and consonants in a string

Hint: Use `charAt()` and conditions to check vowels

3. Matrix addition and multiplication

Hint: Use nested loops for row and column operations

4. Check if two strings are anagrams

Hint: Sort both strings or count frequency of characters

5. Find sum of elements in 2D array

Hint: Use nested for loops to iterate over rows and columns

■■ Part 3 — Advanced Level

1. Binary Search implementation

Hint: Divide array and search recursively in left or right half

2. Recursion: Tower of Hanoi

Hint: Move n-1 disks to auxiliary rod recursively

3. Find duplicates in an array

Hint: Use HashSet or frequency count array

4. Implement Bubble Sort and Selection Sort

Hint: Use nested loops and swap elements if out of order

5. OOP Task: Bank Account with encapsulation

Hint: Use private variables with getters/setters and validation

■ *Tip: Start with simple problems daily, focus on logic not syntax, and practice pattern tracing by hand.*