# Java Conditional Statements and Loops Practice Exercises

Here are practice exercises focused specifically on Java conditional statements (if, else, else-if) and loops (for, while, do-while), with different use-cases as problem statements.

## Beginner Exercises

### 1. Temperature Classifier

Write a program that takes a temperature value and uses if-else statements to classify it as "Freezing" (below 0°C), "Cold" (0-15°C), "Warm" (16-25°C), or "Hot" (above 25°C).

### 2. FizzBuzz

Write a program that uses a loop to print numbers from 1 to 100, but use if-else statements to print "Fizz" for multiples of 3, "Buzz" for multiples of 5, and "FizzBuzz" for multiples of both.

### 3. Sum of Even Numbers

Write a program that uses a loop to calculate the sum of all even numbers between 1 and 100.

## Intermediate Exercises

### 4. Prime Number Checker

Write a program that uses loops and if statements to determine if a number entered by the user is prime or not.

### 5. Factorial Calculator

Write a program that calculates the factorial of a number using a loop. (The factorial of n is the product of all positive integers less than or equal to n.)

# 6. Multiplication Table

Write a program that uses nested loops to generate a multiplication table for numbers 1 through 10.

# Advanced Exercises

## 7. Guessing Game

Create a number guessing game where the computer selects a random number between 1 and 100. Use loops for repeated guessing and if-else statements to provide "too high" or "too low" hints until the user guesses correctly.

## 8. Loan Payment Calculator

Create a program that calculates monthly loan payments. The user enters loan amount, interest rate, and loan term in years. Use loops to show the remaining balance after each payment and if-else statements to format the output.

## 9. Largest and Smallest Number Finder

Write a program that asks the user to enter 10 numbers, then uses loops and if statements to determine the largest and smallest numbers entered.

## 10. Palindrome Checker

Write a program that uses loops and if statements to check if a string is a palindrome (reads the same forward and backward).

## 11. Prime Number Generator

Write a program that uses nested loops and if statements to find all prime numbers between 1 and 100.

## 12. Fibonacci Sequence Generator

Write a program that generates the first n numbers in the Fibonacci sequence using loops and if statements. (Each number is the sum of the two preceding ones, starting from 0 and 1.)

## 13. Grade Calculator

Write a program that takes a student's scores on multiple assignments (user decides how many) and uses loops to calculate their average. Then use if-else statements to assign a letter grade based on the average.

## 14. Compound Interest Calculator

Create a program that calculates compound interest over time. Use loops to show the balance for each year and if statements to highlight years when the balance crosses certain thresholds.

## 15. Number Reverse and Sum

Write a program that takes a number, uses loops to reverse it, and then uses if statements to determine if the original number equals the sum of its digits.