# List of Practice Programs for Unit 1 of Java

1) WAP to perform simple arithmetic operations using:

   i) Int variables

   ii) Double variables

2) WAP to create and print variables of all data types.

3) WAP to demonstrate explicit type conversion.

4) WAP to calculate area and Perimeter of a Rectangle.

5) WAP to calculate Area and Circumference of a Circle.

6) WAP to calculate Simple Interest.

7) Temperature Conversion (Celsius to Fahrenheit)

   (a) fahrenheit = (celsius * 9/5) + 32;
8) Swapping Two Numbers (Using Third Variable)

9) Using Scanner for Input (Addition of Two Numbers)

10) Using Scanner for Inputting variables of different types.

11) WAP to demonstrate relational operators.

12) WAP to demonstrate bitwise operators.

13) WAP to demonstrate boolean logical operators.

14) WAP to demonstrate increment (pre and post) and decrement

   (pre and post) operators.

15) WAP to demonstrate short circuit operators.

16) WAP to find greater of two numbers using conditional operator.

17) WAP to find greater of two numbers using if else statement.

18) Write a program to check whether a number is even or odd.

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

20) Write a program to check whether a given year is a leap year or not.

   a) *A century year is a year ending with 00. A century year is a leap year only if it is divisible by 400.*

   b) *A non-century leap year should be divisible only by 4 and not by 100.*

      i) **Hint: if** ((year % 400 == 0)|| ((year % 4 == 0) && (year % 100 != 0)))


**1D and 2D Arrays**

21) WAP to demonstrate 1D array declaration.

22) WAP to demonstrate 1D array initialization.

23) WAP to calculate average of elements stored in the array.

24) WAP to demonstrate 2D array declaration.

25) WAP to demonstrate 2D array initialization.

26) WAP to print maximum and minimum element in array.

27) WAP to print elements of array in reverse order.

28) WAP to implement Linear Search in Array

**If else conditional statement**

29) Read a character and check whether it is a vowel or consonant.

30) Write a Java program that takes input of student marks and classifies them using if-else-if ladder (e.g., Distinction, First Class, Pass, Fail).

**Switch case**

31) Write a Java program that implements a **menu-driven calculator** using the switch-case construct. The program should repeatedly display a menu to the user, allow the selection of an arithmetic operation (addition, subtraction, multiplication, division), perform the chosen operation on two numbers, and display the result until the user chooses to exit.

32) WAP to identify the name of a weekday based on a numeric input by using a switch-case statement.

**For Loop Programs**

33) Print multiplication table of a number.

34) Print first N natural numbers.

35) Print sum of first N natural numbers.

36) Print factorial of a number.

37) Print Fibonacci series up to N terms.

38) Check if a number is prime.

39) Print all prime numbers up to N.

40) Print reverse of a number.

41) Check if a number is palindrome.

42) Check if a number is Armstrong number.

43) Create a Java program to print all even numbers between 1 and 50 using a for loop.

44) WAP to find sum of even and odd numbers in an array

**Do-While Loop Programs**

45) Keep asking for password until correct password entered.

46) Read numbers until user enters 0 and find their sum.

47) Count number of digits in a number.

**While loop**

48) Write a program to reverse a given number (e.g., 123 → 321) using while loop.

49) Write a program to find sum of digits of a number.

50) Find GCD (Greatest Common Divisor) of two numbers using while loop.

51) Find LCM of two numbers using while loop

52) Print digits of a number one by one using while loop.

**For-Each Loop Programs (Arrays)**

53) Print all elements of an array.

54) Find maximum element in an array.

55) Find minimum element in an array.

56) Find sum & average of array elements.

57) Search for an element in an array.

**Break Statement Programs**

58) Print numbers from 1 to 10, but stop when the number is 5.

59) Search an element in an array, break when found.

60) Find the first prime number in a range using break.

61) Infinite loop with break condition to stop execution.

62) Nested loop with break (stop inner loop when a condition is met).

**Continue Statement Programs**

63) Print numbers from 1 to 10, skipping multiples of 3.

64) Print only even numbers from 1 to 20 using continue.

65) Skip negative numbers while summing an array.

66) Skip zero values when calculating product of numbers.

67) Ask the user to enter numbers continuously and calculates the sum until the user enters zero, making use of break to exit the loop.


**Return Statement Programs**

68) Find factorial of a number using a method with return.

69) Check if a number is prime using return true/false.

70) Find maximum of two numbers using a method with return.

71) Calculate sum of array elements using return.

**Format specifiers**

72) Write a Java program that demonstrates the use of **format specifiers** with System.out.printf() for displaying integers, floating-point numbers, characters, and strings in a **formatted manner**