

Section 1: Variables & Operators

1. Write a Java program to declare two integers and print their sum, difference, product, and quotient.
2. Write a program to swap two numbers:
 - o Using a temporary variable
 - o Without using a temporary variable
3. Write a program to calculate simple interest.
4. Write a program to calculate area and perimeter of a rectangle.
5. Write a program to convert:
 - o Celsius to Fahrenheit
 - o Kilometers to Miles

Section 2: Conditional Statements (if, if-else, switch)

6. Write a program to check whether a number is positive, negative, or zero.
7. Write a program to check whether a number is even or odd.
8. Write a program to check whether a year is a leap year.
9. Write a program to find the largest of three numbers.
10. Write a program to calculate student grade based on marks:
 - o $\geq 90 \rightarrow A$
 - o $\geq 75 \rightarrow B$
 - o $\geq 60 \rightarrow C$
 - o Else \rightarrow Fail
11. Write a program using switch-case to create a simple calculator.

Section 3: Loops (for, while, do-while)

12. Print numbers from 1 to 100.
 13. Print all even numbers between 1 and 50.
 14. Write a program to calculate factorial of a number.
 15. Write a program to print the multiplication table of a given number.
 16. Write a program to calculate the sum of digits of a number.
 17. Write a program to reverse a number.
 18. Write a program to check whether a number is a palindrome.
 19. Write a program to print Fibonacci series up to n terms.
 20. Write a program to check whether a number is prime.
-

Section 4: Arrays

21. Write a program to store 5 integers in an array and print them.
 22. Write a program to find the sum and average of array elements.
 23. Write a program to find the largest and smallest element in an array.
 24. Write a program to count even and odd numbers in an array.
 25. Write a program to reverse an array.
 26. Write a program to search an element using:
 - Linear Search
 27. Write a program to sort an array in ascending order.
-

Section 5: Strings (without classes like StringBuilder)

28. Write a program to count vowels and consonants in a string.
29. Write a program to reverse a string.
30. Write a program to check whether a string is a palindrome.
31. Write a program to count number of words in a sentence.
32. Write a program to find duplicate characters in a string.

33. Write a program to convert:

- Lowercase to Uppercase
 - Uppercase to Lowercase
-

Section 6: Methods (Non-OOP style – static methods)

34. Write a program with a method to check even or odd.

35. Write a method to find factorial of a number.

36. Write a method to check prime number.

37. Write a method to find maximum of two numbers.

38. Write a method to calculate simple interest.