Java Control Statements – Lab Manual

Objective:
This lab manual is designed to help beginners understand and practice Java control statements such as if, if-else, switch, loops, and combinations of control structures through simple programs.

Prerequisites:
- Basic understanding of Java syntax
- Java installed (JDK)
- Any Java IDE or text editor

Lab 1: if Statement

1. Check whether a number is positive.
2. Check whether a number is negative.
3. Check whether a number is zero.
4. Check whether a person is eligible to vote.
5. Check whether a number is even.

Lab 2: if-else Statement

1. Find the greater of two numbers.
2. Check whether a number is divisible by 5.
3. Check whether a year is a leap year.
4. Check whether a student has passed or failed.
5. Check whether a number is multiple of 3.

Lab 3: if-else-if Statement

1. Find the largest of three numbers.
2. Display grade based on marks.
3. Check whether a number is positive, negative, or zero.
4. Calculate electricity bill based on units.
5. Determine student result category.

Lab 4: switch Statement

1. Display day of the week using numbers.
2. Create a simple calculator.
3. Display month name based on number.
4. Perform arithmetic operations using switch.
5. Menu-driven program using switch.

Lab 5: for Loop

1. Print numbers from 1 to 10.
2. Print even numbers from 1 to 50.
3. Find sum of first 10 natural numbers.
4. Print multiplication table.
5. Print numbers in reverse order.

Lab 6: while Loop

1. Print numbers from 1 to 10.
2. Find sum of digits of a number.
3. Check whether a number is palindrome.
4. Count number of digits.
5. Reverse a number.

Lab 7: do-while Loop

1. Print numbers from 1 to 10.
2. Display menu repeatedly until exit.
3. Validate user input.
4. Print a number at least once.
5. Password validation program.

Lab 8: Mixed Control Statements

1. Check whether a number is prime.
2. Find factorial of a number.
3. Generate Fibonacci series.
4. Check whether a number is Armstrong.
5. Print star patterns.