# Java Assignments – Day 4

Topics Covered:  
- Bitwise Operators: ~, >>, >>>, <<, &, |  
- Signed vs Unsigned Right Shift  
- Type Casting & Type Promotion  
- Function Types:  
 • With parameters and return type  
 • With parameters and no return type  
 • Without parameters, with return type  
 • Without parameters and without return type  
- Control Structures:  
 • Sequential Statements  
 • Selection Statements (if, if-else, if-else-if)  
 • Jumping Statements (break)

## Assignment 1: Bitwise NOT (~)

Question:  
Take an integer and apply the bitwise NOT (~) operator. Print the binary before and after.

Input Format:  
5

Output Format:  
Original: 5  
Binary: 00000000000000000000000000000101  
~5 = -6  
Binary of ~5: 11111111111111111111111111111010

## Assignment 2: Signed vs Unsigned Right Shift

Question:  
Take a negative number and show the result of >> and >>> with binary.

Input Format:  
-8

Output Format:  
Signed (-8 >> 2): -2  
Unsigned (-8 >>> 2): 1073741822

## Assignment 3: Type Promotion

Question:  
Use byte, short, char, and int in a single expression to show promotion.

Input Format:  
byte b = 10; short s = 20; char c = 'A'; int i = 30;

Output Format:  
Expression: b + s + c + i = 125 ('A' = 65)

## Assignment 4: Explicit Type Casting

Question:  
Convert a float to int and byte using casting.

Input Format:  
float f = 123.456f;

Output Format:  
To int: 123  
To byte: 123

## Assignment 5: Function with Parameters & Return Type

Question:  
Write a function int max(int a, int b) to return the greater number.

Input Format:  
10  
20

Output Format:  
Greater number is: 20

## Assignment 6: Function with Parameters & No Return Type

Question:  
Write a function void printTable(int n) that prints table of a number.

Input Format:  
5

Output Format:  
5 10 15 20 25 30 35 40 45 50

## Assignment 7: Function without Parameters, with Return Type

Question:  
Write a function int getSquare() that returns square of 9.

Output Format:  
Returned square: 81

## Assignment 8: Function without Parameters and Return Type

Question:  
Write a function void showWelcome() that prints 'Welcome to Java Batch!'

Output Format:  
Welcome to Java Batch!

## Assignment 9: Selection Statements – Largest of 3 Numbers

Question:  
Take three numbers and print the largest using if-else-if.

Input Format:  
15 10 25

Output Format:  
Largest number: 25

## Assignment 10: Break in Loop

Question:  
Run a loop from 1 to 10 and break if number is 6.

Output Format:  
1 2 3 4 5 Loop stopped at 6

## Assignment 11: Sequential Statements – BMI Calculator

Question:  
Take weight (kg) and height (m) from user and calculate BMI = weight / (height \* height).

Input Format:  
Weight = 60  
Height = 1.7

Output Format:  
BMI = 20.76