## Level 1 Practice Programs

**Program 1 – Check if Number Divisible by 5**

// Program Name: DivisibleByFive// This program checks if a number entered by the user is divisible by 5.

import java.util.Scanner;

public class DivisibleByFive {

public static void main(String[] args) {

// Create Scanner object to read input

Scanner input = new Scanner(System.in);

// Step 1: Take number input from the user

System.out.print("Enter a number: ");

int number = input.nextInt();

// Step 2: Check if the number is divisible by 5

boolean isDivisible = (number % 5 == 0);

// Step 3: Display result

System.out.println("Is the number " + number + " divisible by 5? " + isDivisible);

// Close the scanner

input.close();

}

}

## Program 2 – Check if First Number is Smallest of Three

import java.util.Scanner;  
public class FirstSmallest {  
 public static void main(String[] args) {  
 Scanner sc = new Scanner(System.in);  
 int num1 = sc.nextInt(), num2 = sc.nextInt(), num3 = sc.nextInt();  
 System.out.println("Is the first number the smallest? " + (num1 < num2 && num1 < num3));  
 }  
}

## Program 3 – Check Which is Largest of Three

import java.util.Scanner;  
public class LargestCheck {  
 public static void main(String[] args) {  
 Scanner sc = new Scanner(System.in);  
 int num1 = sc.nextInt(), num2 = sc.nextInt(), num3 = sc.nextInt();  
 System.out.println("Is the first number the largest? " + (num1 > num2 && num1 > num3));  
 System.out.println("Is the second number the largest? " + (num2 > num1 && num2 > num3));  
 System.out.println("Is the third number the largest? " + (num3 > num1 && num3 > num2));  
 }  
}

## Program 4 – Sum of N Natural Numbers (Formula)

import java.util.Scanner;  
public class SumNaturalNumbers {  
 public static void main(String[] args) {  
 Scanner sc = new Scanner(System.in);  
 int n = sc.nextInt();  
 if (n > 0) {  
 int sum = n \* (n + 1) / 2;  
 System.out.println("The sum of " + n + " natural numbers is " + sum);  
 } else {  
 System.out.println("The number " + n + " is not a natural number");  
 }  
 }  
}

## Program 5 – Voting Eligibility

import java.util.Scanner;  
public class VotingEligibility {  
 public static void main(String[] args) {  
 Scanner sc = new Scanner(System.in);  
 int age = sc.nextInt();  
 if (age >= 18) {  
 System.out.println("The person's age is " + age + " and can vote.");  
 } else {  
 System.out.println("The person's age is " + age + " and cannot vote.");  
 }  
 }  
}

## Program 6 – Positive, Negative, or Zero

import java.util.Scanner;  
public class NumberCheck {  
 public static void main(String[] args) {  
 Scanner sc = new Scanner(System.in);  
 int number = sc.nextInt();  
 if (number > 0) System.out.println("positive");  
 else if (number < 0) System.out.println("negative");  
 else System.out.println("zero");  
 }  
}

## Program 7 – Spring Season Check

import java.util.Scanner;  
public class SpringSeason {  
 public static void main(String[] args) {  
 Scanner sc = new Scanner(System.in);  
 int month = sc.nextInt(), day = sc.nextInt();  
 if ((month == 3 && day >= 20) || (month > 3 && month < 6) || (month == 6 && day <= 20)) {  
 System.out.println("Its a Spring Season");  
 } else {  
 System.out.println("Not a Spring Season");  
 }  
 }  
}

## Program 8 – Countdown (While Loop)

import java.util.Scanner;  
public class CountdownWhile {  
 public static void main(String[] args) {  
 Scanner sc = new Scanner(System.in);  
 int counter = sc.nextInt();  
 while (counter >= 1) {  
 System.out.println(counter);  
 counter--;  
 }  
 }  
}

## Program 9 – Countdown (For Loop)

import java.util.Scanner;  
public class CountdownFor {  
 public static void main(String[] args) {  
 Scanner sc = new Scanner(System.in);  
 int counter = sc.nextInt();  
 for (int i = counter; i >= 1; i--) {  
 System.out.println(i);  
 }  
 }  
}

## Program 10 – Sum Until User Enters 0

import java.util.Scanner;  
public class SumUntilZero {  
 public static void main(String[] args) {  
 Scanner sc = new Scanner(System.in);  
 double total = 0.0, num;  
 num = sc.nextDouble();  
 while (num != 0) {  
 total += num;  
 num = sc.nextDouble();  
 }  
 System.out.println(total);  
 }  
}

## Program 11 – Sum Until Negative or Zero (Break)

import java.util.Scanner;  
public class SumUntilNegative {  
 public static void main(String[] args) {  
 Scanner sc = new Scanner(System.in);  
 double total = 0.0;  
 while (true) {  
 double num = sc.nextDouble();  
 if (num <= 0) break;  
 total += num;  
 }  
 System.out.println(total);  
 }  
}

## Program 12 – Sum of N Natural Numbers (While Loop vs Formula)

import java.util.Scanner;  
public class SumNaturalWhile {  
 public static void main(String[] args) {  
 Scanner sc = new Scanner(System.in);  
 int n = sc.nextInt();  
 if (n > 0) {  
 int sumFormula = n \* (n + 1) / 2;  
 int sumLoop = 0, i = 1;  
 while (i <= n) {  
 sumLoop += i;  
 i++;  
 }  
 System.out.println(sumFormula == sumLoop);  
 } else {  
 System.out.println("Not a natural number");  
 }  
 }  
}

## Program 13 – Sum of N Natural Numbers (For Loop vs Formula)

import java.util.Scanner;  
public class SumNaturalFor {  
 public static void main(String[] args) {  
 Scanner sc = new Scanner(System.in);  
 int n = sc.nextInt();  
 if (n > 0) {  
 int sumFormula = n \* (n + 1) / 2;  
 int sumLoop = 0;  
 for (int i = 1; i <= n; i++) sumLoop += i;  
 System.out.println(sumFormula == sumLoop);  
 } else {  
 System.out.println("Not a natural number");  
 }  
 }  
}

## Program 14 – Factorial (While Loop)

import java.util.Scanner;  
public class FactorialWhile {  
 public static void main(String[] args) {  
 Scanner sc = new Scanner(System.in);  
 int n = sc.nextInt();  
 if (n >= 0) {  
 int fact = 1, i = 1;  
 while (i <= n) {  
 fact \*= i;  
 i++;  
 }  
 System.out.println(fact);  
 } else {  
 System.out.println("Invalid input");  
 }  
 }  
}

## Program 15 – Factorial (For Loop)

import java.util.Scanner;  
public class FactorialFor {  
 public static void main(String[] args) {  
 Scanner sc = new Scanner(System.in);  
 int n = sc.nextInt();  
 if (n >= 0) {  
 int fact = 1;  
 for (int i = 1; i <= n; i++) fact \*= i;  
 System.out.println(fact);  
 } else {  
 System.out.println("Invalid input");  
 }  
 }  
}

## Program 16 – Odd and Even Numbers

import java.util.Scanner;  
public class OddEven {  
 public static void main(String[] args) {  
 Scanner sc = new Scanner(System.in);  
 int n = sc.nextInt();  
 if (n > 0) {  
 for (int i = 1; i <= n; i++) {  
 if (i % 2 == 0) System.out.println(i + " is even");  
 else System.out.println(i + " is odd");  
 }  
 } else {  
 System.out.println("Not a natural number");  
 }  
 }  
}

## Program 17 – Bonus Calculator

import java.util.Scanner;  
public class BonusCalculator {  
 public static void main(String[] args) {  
 Scanner sc = new Scanner(System.in);  
 double salary = sc.nextDouble();  
 int years = sc.nextInt();  
 if (years > 5) {  
 System.out.println(salary \* 0.05);  
 } else {  
 System.out.println(0);  
 }  
 }  
}

## Program 18 – Multiplication Table from 6 to 9

import java.util.Scanner;  
public class MultiplicationTable {  
 public static void main(String[] args) {  
 Scanner sc = new Scanner(System.in);  
 int num = sc.nextInt();  
 for (int i = 6; i <= 9; i++) {  
 System.out.println(num + " \* " + i + " = " + (num \* i));  
 }  
 }  
}

# Level 2 Practice Programs

**1. Create a program to print odd and even numbers between 1 to the number entered by the user.**

import java.util.Scanner;public class OddEvenNumbers {

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

int number = sc.nextInt();

if (number > 0) {

for (int i = 1; i <= number; i++) {

if (i % 2 == 0) System.out.println(i + " is even");

else System.out.println(i + " is odd");

}

} else {

System.out.println("Not a natural number");

}

}

}

**2. Create a program to find the bonuses of employees based on their years of service.**

import java.util.Scanner;public class BonusCalculator {

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

double salary = sc.nextDouble();

int years = sc.nextInt();

if (years > 5) System.out.println(salary \* 0.05);

else System.out.println(0);

}

}

**3. Create a program to find the multiplication table of a number entered by the user from 6 to 9.**

import java.util.Scanner;public class MultiplicationTable {

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

int number = sc.nextInt();

for (int i = 6; i <= 9; i++) {

System.out.println(number + " \* " + i + " = " + (number \* i));

}

}

}

**4. Write a program FizzBuzz using for loop.**

import java.util.Scanner;public class FizzBuzzFor {

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

int number = sc.nextInt();

if (number > 0) {

for (int i = 1; i <= number; i++) {

if (i % 3 == 0 && i % 5 == 0) System.out.println("FizzBuzz");

else if (i % 3 == 0) System.out.println("Fizz");

else if (i % 5 == 0) System.out.println("Buzz");

else System.out.println(i);

}

} else {

System.out.println("Not a positive integer");

}

}

}

**5. Rewrite FizzBuzz using while loop.**

import java.util.Scanner;public class FizzBuzzWhile {

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

int number = sc.nextInt();

if (number > 0) {

int i = 1;

while (i <= number) {

if (i % 3 == 0 && i % 5 == 0) System.out.println("FizzBuzz");

else if (i % 3 == 0) System.out.println("Fizz");

else if (i % 5 == 0) System.out.println("Buzz");

else System.out.println(i);

i++;

}

} else {

System.out.println("Not a positive integer");

}

}

}

**6. Create a program to find youngest and tallest among Amar, Akbar, and Anthony.**

import java.util.Scanner;public class FriendsCheck {

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

int ageAmar = sc.nextInt();

int heightAmar = sc.nextInt();

int ageAkbar = sc.nextInt();

int heightAkbar = sc.nextInt();

int ageAnthony = sc.nextInt();

int heightAnthony = sc.nextInt();

if (ageAmar < ageAkbar && ageAmar < ageAnthony) System.out.println("Youngest: Amar");

else if (ageAkbar < ageAmar && ageAkbar < ageAnthony) System.out.println("Youngest: Akbar");

else System.out.println("Youngest: Anthony");

if (heightAmar > heightAkbar && heightAmar > heightAnthony) System.out.println("Tallest: Amar");

else if (heightAkbar > heightAmar && heightAkbar > heightAnthony) System.out.println("Tallest: Akbar");

else System.out.println("Tallest: Anthony");

}

}

**7. Create a program to find the factors of a number using for loop.**

import java.util.Scanner;public class FactorsFor {

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

int number = sc.nextInt();

if (number > 0) {

for (int i = 1; i < number; i++) {

if (number % i == 0) System.out.println(i);

}

} else {

System.out.println("Not a positive integer");

}

}

}

**8. Rewrite factors program using while loop.**

import java.util.Scanner;public class FactorsWhile {

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

int number = sc.nextInt();

if (number > 0) {

int i = 1;

while (i < number) {

if (number % i == 0) System.out.println(i);

i++;

}

} else {

System.out.println("Not a positive integer");

}

}

}

**9. Create a program to print the greatest factor of a number beside itself using a loop.**

import java.util.Scanner;public class GreatestFactorFor {

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

int number = sc.nextInt();

int greatestFactor = 1;

for (int i = number - 1; i >= 1; i--) {

if (number % i == 0) {

greatestFactor = i;

break;

}

}

System.out.println(greatestFactor);

}

}

**10. Rewrite the above program to print the greatest factor of a number beside itself using a while loop.**

import java.util.Scanner;public class GreatestFactorWhile {

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

int number = sc.nextInt();

int greatestFactor = 1;

int counter = number - 1;

while (counter >= 1) {

if (number % counter == 0) {

greatestFactor = counter;

break;

}

counter--;

}

System.out.println(greatestFactor);

}

}

**11. Create a program to find all the multiples of a number taken as user input below 100 using for loop.**

import java.util.Scanner;public class MultiplesFor {

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

int number = sc.nextInt();

if (number > 0 && number < 100) {

for (int i = 100; i >= 1; i--) {

if (i % number == 0) System.out.println(i);

}

} else {

System.out.println("Invalid input");

}

}

}

**12. Create a program to find the power of a number using for loop.**

import java.util.Scanner;public class PowerFor {

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

int number = sc.nextInt();

int power = sc.nextInt();

if (number > 0 && power >= 0) {

int result = 1;

for (int i = 1; i <= power; i++) {

result \*= number;

}

System.out.println(result);

} else {

System.out.println("Invalid input");

}

}

}

**13. Rewrite the multiples program using while loop.**

import java.util.Scanner;public class MultiplesWhile {

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

int number = sc.nextInt();

if (number > 0 && number < 100) {

int counter = 100;

while (counter >= 1) {

if (counter % number == 0) System.out.println(counter);

counter--;

}

} else {

System.out.println("Invalid input");

}

}

}

**14. Rewrite the power program using while loop.**

import java.util.Scanner;public class PowerWhile {

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

int number = sc.nextInt();

int power = sc.nextInt();

if (number > 0 && power >= 0) {

int result = 1;

int counter = 0;

while (counter != power) {

result \*= number;

counter++;

}

System.out.println(result);

} else {

System.out.println("Invalid input");

}

}

}

# Level 3 Practice Programs

**1. Leap Year Program (Multiple if-else)**

import java.util.Scanner;public class LeapYearMultiple {

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

int year = sc.nextInt();

if (year >= 1582) {

if (year % 4 == 0 && year % 100 != 0) {

System.out.println("Leap Year");

} else if (year % 400 == 0) {

System.out.println("Leap Year");

} else {

System.out.println("Not a Leap Year");

}

} else {

System.out.println("Invalid Year");

}

}

}

**2. Leap Year Program (Single if condition)**

import java.util.Scanner;public class LeapYearSingle {

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

int year = sc.nextInt();

if (year >= 1582 && ((year % 4 == 0 && year % 100 != 0) || (year % 400 == 0))) {

System.out.println("Leap Year");

} else {

System.out.println("Not a Leap Year");

}

}

}

**3. Grade Calculation Program**

import java.util.Scanner;public class GradeCalculator {

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

double physics = sc.nextDouble();

double chemistry = sc.nextDouble();

double maths = sc.nextDouble();

double percentage = (physics + chemistry + maths) / 3;

System.out.println("Average: " + percentage);

if (percentage >= 80) System.out.println("Grade: A");

else if (percentage >= 70) System.out.println("Grade: B");

else if (percentage >= 60) System.out.println("Grade: C");

else if (percentage >= 50) System.out.println("Grade: D");

else if (percentage >= 40) System.out.println("Grade: E");

else System.out.println("Grade: R");

}

}

**4. Prime Number Check**

import java.util.Scanner;public class PrimeCheck {

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

int num = sc.nextInt();

boolean isPrime = true;

if (num <= 1) isPrime = false;

else {

for (int i = 2; i <= num / 2; i++) {

if (num % i == 0) {

isPrime = false;

break;

}

}

}

if (isPrime) System.out.println("Prime Number");

else System.out.println("Not a Prime Number");

}

}

**5. Armstrong Number Check**

import java.util.Scanner;public class ArmstrongCheck {

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

int num = sc.nextInt();

int sum = 0, original = num;

while (original != 0) {

int digit = original % 10;

sum += digit \* digit \* digit;

original /= 10;

}

if (sum == num) System.out.println("Armstrong Number");

else System.out.println("Not an Armstrong Number");

}

}

**6. Count Digits in a Number**

import java.util.Scanner;public class DigitCount {

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

int num = sc.nextInt();

int count = 0;

while (num != 0) {

num /= 10;

count++;

}

System.out.println("Digits: " + count);

}

}

**7. BMI Calculator**

import java.util.Scanner;public class BMICalculator {

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

double weight = sc.nextDouble();

double heightCm = sc.nextDouble();

double heightM = heightCm / 100;

double bmi = weight / (heightM \* heightM);

if (bmi <= 18.4) System.out.println("Underweight");

else if (bmi <= 24.9) System.out.println("Normal");

else if (bmi <= 39.9) System.out.println("Overweight");

else System.out.println("Obese");

}

}

**8. Harshad Number Check**

import java.util.Scanner;public class HarshadCheck {

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

int num = sc.nextInt();

int sum = 0, temp = num;

while (temp != 0) {

sum += temp % 10;

temp /= 10;

}

if (num % sum == 0) System.out.println("Harshad Number");

else System.out.println("Not a Harshad Number");

}

}

**9. Abundant Number Check**

import java.util.Scanner;public class AbundantCheck {

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

int num = sc.nextInt();

int sum = 0;

for (int i = 1; i < num; i++) {

if (num % i == 0) sum += i;

}

if (sum > num) System.out.println("Abundant Number");

else System.out.println("Not an Abundant Number");

}

}

**10. Calculator Using Switch Case**

import java.util.Scanner;public class Calculator {

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

double first = sc.nextDouble();

double second = sc.nextDouble();

String op = sc.next();

switch (op) {

case "+": System.out.println(first + second); break;

case "-": System.out.println(first - second); break;

case "\*": System.out.println(first \* second); break;

case "/": System.out.println(first / second); break;

default: System.out.println("Invalid Operator");

}

}

}

**11. Day of Week Program**

public class DayOfWeek {

public static void main(String[] args) {

int m = Integer.parseInt(args[0]);

int d = Integer.parseInt(args[1]);

int y = Integer.parseInt(args[2]);

int y0 = y - (14 - m) / 12;

int x = y0 + y0 / 4 - y0 / 100 + y0 / 400;

int m0 = m + 12 \* ((14 - m) / 12) - 2;

int d0 = (d + x + 31 \* m0 / 12) % 7;

System.out.println(d0);

}

}