Exercise 1:

Write a Java program to print numbers from 1 to 10 using a "for" loop.

**public class Exercise1 {**

**public static void main(String[] args) {**

**for (int i = 1; i <= 10; i++) {**

**System.out.print(i + " ");**

**}**

**}**

**}**

Exercise 2:

Write a Java program to print even numbers from 2 to 20 using a "while" loop.

**public class Exercise2 {**

**public static void main(String[] args) {**

**int num = 2;**

**while (num <= 20) {**

**System.out.print(num + " ");**

**num += 2;**

**}**

**}**

**}**

Exercise 3:

Write a Java program to calculate the sum of all numbers from 1 to 100 using a "do-while" loop.

**public class Exercise3 {**

**public static void main(String[] args) {**

**int sum = 0;**

**int num = 1;**

**do {**

**sum += num;**

**num++;**

**} while (num <= 100);**

**System.out.println("Sum: " + sum);**

**}**

**}**

Exercise 4:

Write a Java program to print the multiplication table of a given number using a "for" loop.

**public class Exercise4 {**

**public static void main(String[] args) {**

**int num = 5;**

**for (int i = 1; i <= 10; i++) {**

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

**}**

**}**

**}**

Exercise 5:

Write a Java program to find the factorial of a given number using a "while" loop.

**public class Exercise5 {**

**public static void main(String[] args) {**

**int num = 5;**

**int factorial = 1;**

**int i = 1;**

**while (i <= num) {**

**factorial \*= i;**

**i++;**

**}**

**System.out.println("Factorial of " + num + " is: " + factorial);**

**}**

**}**

Exercise 6:

Write a Java program to check if a given number is prime or not using a "for" loop.

**public class Exercise6 {**

**public static void main(String[] args) {**

**int num = 13;**

**boolean isPrime = true;**

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

**if (num % i == 0) {**

**isPrime = false;**

**break;**

**}**

**}**

**if (isPrime) {**

**System.out.println(num + " is a prime number.");**

**} else {**

**System.out.println(num + " is not a prime number.");**

**}**

**}**

**}**

Exercise 7:

Write a Java program to print the Fibonacci series up to a given number using a "while" loop.

**public class Exercise7 {**

**public static void main(String[] args) {**

**int num = 10;**

**int a = 0, b = 1;**

**int sum = 0;**

**System.out.print(a + " " + b + " ");**

**while (sum <= num) {**

**sum = a + b;**

**if (sum <= num) {**

**System.out.print(sum + " ");**

**}**

**a = b;**

**b = sum;**

**}**

**}**

**}**

Exercise 8:

Write a Java program to find the reverse of a given number using a "do-while" loop.

**public class Exercise8 {**

**public static void main(String[] args) {**

**int num = 12345;**

**int reverse = 0;**

**do {**

**int digit = num % 10;**

**reverse = reverse \* 10 + digit;**

**num /= 10;**

**} while (num != 0);**

**System.out.println("Reverse: " + reverse);**

**}**

**}**

Exercise 9:

Write a Java program to find the GCD (Greatest Common Divisor) of two numbers using a "for" loop.

**public class Exercise9 {**

**public static void main(String[] args) {**

**int num1 = 30, num2 = 45;**

**int gcd = 1;**

**for (int i = 1; i <= num1 && i <= num2; i++) {**

**if (num1 % i == 0 && num2 % i == 0) {**

**gcd = i;**

**}**

**}**

**System.out.println("GCD of " + num1 + " and " + num2 + " is: " + gcd);**

**}**

**}**

Exercise 10:

Write a Java program to generate a random number between 1 and 100 using a "while" loop.

**import java.util.Random;**

**public class Exercise10 {**

**public static void main(String[] args) {**

**Random random = new Random();**

**int randomNumber = random.nextInt(100) + 1;**

**System.out.println("Random Number: " + randomNumber);**

**}**

**}**

Exercise 11:

Write a Java program to find the sum of all even numbers between 1 and 50 using a "do-while" loop.

**public class Exercise11 {**

**public static void main(String[] args) {**

**int sum = 0;**

**int num = 2;**

**do {**

**sum += num;**

**num += 2;**

**} while (num <= 50);**

**System.out.println("Sum of even numbers between 1 and 50: " + sum);**

**}**

**}**

Exercise 12:

Write a Java program to print the first n prime numbers using a "for" loop.

**public class Exercise12 {**

**public static void main(String[] args) {**

**int n = 10;**

**int count = 0;**

**int num = 2;**

**while (count < n) {**

**boolean isPrime = true;**

**for (int i = 2; i <= Math.sqrt(num); i++) {**

**if (num % i == 0) {**

**isPrime = false;**

**break;**

**}**

**}**

**if (isPrime) {**

**System.out.print(num + " ");**

**count++;**

**}**

**num++;**

**}**

**}**

**}**

Exercise 13:

Write a Java program to print a pyramid of stars using a "for" loop.

**public class Exercise13 {**

**public static void main(String[] args) {**

**int rows = 5;**

**for (int i = 1; i <= rows; i++) {**

**for (int j = 1; j <= i; j++) {**

**System.out.print("\* ");**

**}**

**System.out.println();**

**}**

**}**

**}**

Exercise 14:

Write a Java program to calculate the sum of digits of a given number using a "while" loop.

**public class Exercise14 {**

**public static void main(String[] args) {**

**int num = 12345;**

**int sum = 0;**

**while (num != 0) {**

**int digit = num % 10;**

**sum += digit;**

**num /= 10;**

**}**

**System.out.println("Sum of digits: " + sum);**

**}**

**}**

Exercise 15:

Write a Java program to check if a given number is a palindrome or not using a "for" loop.

**public class Exercise15 {**

**public static void main(String[] args) {**

**int num = 12321;**

**int temp = num;**

**int reverse = 0;**

**while (temp != 0) {**

**int digit = temp % 10;**

**reverse = reverse \* 10 + digit;**

**temp /= 10;**

**}**

**if (num == reverse) {**

**System.out.println(num + " is a palindrome.");**

**} else {**

**System.out.println(num + " is not a palindrome.");**

**}**

**}**

**}**

Exercise 16:

Write a Java program to find the factorial of a given number using a "for" loop.

**public class Exercise16 {**

**public static void main(String[] args) {**

**int num = 5;**

**int factorial = 1;**

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

**factorial \*= i;**

**}**

**System.out.println("Factorial of " + num + " is: " + factorial);**

**}**

**}**

Exercise 17:

Write a Java program to print the numbers from 10 to 1 in reverse order using a "do-while" loop.

**public class Exercise17 {**

**public static void main(String[] args) {**

**int num = 10;**

**do {**

**System.out.print(num + " ");**

**num--;**

**} while (num >= 1);**

**}**

**}**

Exercise 18:

Write a Java program to print the following pattern using nested "for" loops.

\*

\* \*

\* \* \*

\* \* \* \*

\* \* \* \* \*

**public class Exercise18 {**

**public static void main(String[] args) {**

**int rows = 5;**

**for (int i = 1; i <= rows; i++) {**

**for (int j = 1; j <= i; j++) {**

**System.out.print("\* ");**

**}**

**System.out.println();**

**}**

**}**

**}**

Exercise 19:

Write a Java program to find the sum of all odd numbers between 1 and 50 using a "while" loop.

**public class Exercise19 {**

**public static void main(String[] args) {**

**int sum = 0;**

**int num = 1;**

**while (num <= 50) {**

**sum += num;**

**num += 2;**

**}**

**System.out.println("Sum of odd numbers between 1 and 50: " + sum);**

**}**

**}**

Exercise 20:

Write a Java program to print the first n terms of the Fibonacci series using a "for" loop.

**public class Exercise20 {**

**public static void main(String[] args) {**

**int n = 10;**

**int a = 0, b = 1;**

**System.out.print(a + " " + b + " ");**

**for (int i = 3; i <= n; i++) {**

**int sum = a + b;**

**System.out.print(sum + " ");**

**a = b;**

**b = sum;**

**}**

**}**

**}**

**Exercise 21:**

**Write a Java program to check if a given number is Armstrong or not using a "for" loop.**

public class Exercise21 {

public static void main(String[] args) {

int num = 153;

int originalNum = num;

int sum = 0;

int digits = String.valueOf(num).length();

while (num > 0) {

int digit = num % 10;

sum += Math.pow(digit, digits);

num /= 10;

}

if (sum == originalNum) {

System.out.println(originalNum + " is an Armstrong number.");

} else {

System.out.println(originalNum + " is not an Armstrong number.");

}

}

}

**Exercise 22:**

**Write a Java program to find the LCM (Least Common Multiple) of two numbers using a "while" loop.**

public class Exercise22 {

public static void main(String[] args) {

int num1 = 12, num2 = 30;

int lcm = (num1 > num2) ? num1 : num2;

while (true) {

if (lcm % num1 == 0 && lcm % num2 == 0) {

System.out.println("LCM of " + num1 + " and " + num2 + " is: " + lcm);

break;

}

lcm++;

}

}

}

**Exercise 23:**

**Write a Java program to reverse a string using a "for" loop.**

public class Exercise23 {

public static void main(String[] args) {

String str = "hello";

String reversed = "";

for (int i = str.length() - 1; i >= 0; i--) {

reversed += str.charAt(i);

}

System.out.println("Reversed string: " + reversed);

}

}

**Exercise 24:**

**Write a Java program to print the multiplication table of a given number using a "while" loop.**

public class Exercise24 {

public static void main(String[] args) {

int num = 7;

int i = 1;

while (i <= 10) {

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

i++;

}

}

}

**Exercise 25:**

**Write a Java program to find the sum of first n natural numbers using a "do-while" loop.**

public class Exercise25 {

public static void main(String[] args) {

int n = 5;

int sum = 0;

int i = 1;

do {

sum += i;

i++;

} while (i <= n);

System.out.println("Sum of first " + n + " natural numbers: " + sum);

}

}