

Java Programs Collection

1. Sum of Even Numbers (1 to 100)

```
import java.util.Scanner;

public class EvenSum {
    public static void main(String[] args) {
        int sum = 0;

        // Loop through numbers 1 to 100
        for (int i = 1; i <= 100; i++) {
            if (i % 2 == 0) { // Check if the number is even
                sum += i;      // Add even number to sum
            }
        }

        System.out.println("Sum of even numbers from 1 to 100: " + sum);
    }
}
```

2. Factorial Using Function

```
import java.util.Scanner;

public class Factorial {
    // Function to calculate factorial
    public static int factorial(int n) {
        int fact = 1;
        for (int i = 1; i <= n; i++) {
            fact *= i; // Multiply each number
        }
        return fact;
    }

    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.print("Enter a number: ");
        int num = sc.nextInt();

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

3. Number Guessing Game

```
import java.util.Scanner;

public class GuessGame {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        int target = 7;
        int guess;

        do {
            System.out.print("Guess a number between 1 and 10: ");
            guess = sc.nextInt();
        } while (guess != target);
    }
}
```

```

        if (guess != target) {
            System.out.println("Wrong, try again!");
        }
    } while (guess != target);

    System.out.println("Correct!");
}
}

```

4. Check Prime Number

```

import java.util.Scanner;

public class PrimeCheck {
    // Function to check prime
    public static boolean isPrime(int n) {
        if (n <= 1) return false;

        for (int i = 2; i <= Math.sqrt(n); i++) {
            if (n % i == 0) return false;
        }

        return true;
    }

    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.print("Enter a number: ");
        int num = sc.nextInt();

        if (isPrime(num)) {
            System.out.println(num + " is a prime number.");
        } else {
            System.out.println(num + " is not a prime number.");
        }
    }
}

```

5. Pattern Printing

```

import java.util.Scanner;

public class StarPattern {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.print("Enter number of rows: ");
        int rows = sc.nextInt();

        for (int i = 1; i <= rows; i++) {           // outer loop for rows
            for (int j = 1; j <= i; j++) {           // inner loop for stars
                System.out.print("*");
            }
            System.out.println();                     // move to next line
        }
    }
}

```

6. Find Maximum of Three Numbers

```
import java.util.Scanner;

public class MaxOfThree {
    public static int findMax(int a, int b, int c) {
        if (a >= b && a >= c)
            return a;
        else if (b >= a && b >= c)
            return b;
        else
            return c;
    }

    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.print("Enter three numbers: ");
        int x = sc.nextInt();
        int y = sc.nextInt();
        int z = sc.nextInt();

        int max = findMax(x, y, z);
        System.out.println("Maximum is: " + max);
    }
}
```

7. Count Digits in a Number

```
import java.util.Scanner;

public class DigitCounter {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.print("Enter a number: ");
        int num = sc.nextInt();

        int count = 0;
        int temp = num;

        while (temp != 0) {
            temp = temp / 10; // remove last digit
            count++;
        }

        System.out.println("Number of digits in " + num + " is: " + count);
    }
}
```

8. Multiplication Table

```
import java.util.Scanner;

public class MultiplicationTable {
    public static void printTable(int n) {
        for (int i = 1; i <= 10; i++) {
            System.out.println(n + " x " + i + " = " + (n * i));
        }
    }
}
```

```

public static void main(String[] args) {
    Scanner sc = new Scanner(System.in);
    System.out.print("Enter a number for table: ");
    int num = sc.nextInt();

    printTable(num);
}
}

```

9. Reverse a Number

```

import java.util.Scanner;

public class ReverseNumber {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.print("Enter a number: ");
        int num = sc.nextInt();
        int reversed = 0;

        while (num != 0) {
            int digit = num % 10;           // get last digit
            reversed = reversed * 10 + digit; // add to reversed number
            num /= 10;                       // remove last digit
        }

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

```

10. Check Palindrome Number

```

import java.util.Scanner;

public class PalindromeCheck {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.print("Enter a number: ");
        int num = sc.nextInt();
        int original = num;
        int reversed = 0;

        while (num != 0) {
            int digit = num % 10;
            reversed = reversed * 10 + digit;
            num /= 10;
        }

        if (original == reversed) {
            System.out.println(original + " is a palindrome.");
        } else {
            System.out.println(original + " is not a palindrome.");
        }
    }
}

```