Loops & Branching

1. Challenge: Print multiplication table for a number

Code:

```
public class MultiplicationTable {
    public static void main(String[] args) {
        int number = 5;
        for (int i = 1; i <= 10; i++) {
            System.out.println(number + " x " + i + " = " + (number * i));
        }
    }
}
```

Output:

5 x 1 = 5

5 x 2 = 10

5 x 3 = 15

5 x 4 = 20

5 x 5 = 25

5 x 6 = 30

5 x 7 = 35

5 x 8 = 40

5 x 9 = 45

5 x 10 = 50

2. Challenge: Use break and continue in loops

Code:

```
public class BreakContinueExample {
    public static void main(String[] args) {
```

```
        System.out.println("Using continue:");
        for (int i = 1; i <= 5; i++) {
            if (i == 3) continue;
            System.out.println(i);
        }

        System.out.println("Using break:");
        for (int i = 1; i <= 5; i++) {
            if (i == 3) break;
            System.out.println(i);
        }
    }
}
```

Output:

```
Using continue:
1
2
4
5
Using break:
1
2
```

3. Challenge: Find factorial of a number.

Code:

```
public class Factorial {
    public static void main(String[] args) {
```

```
        int number = 5;
        int fact = 1;
        for (int i = 1; i <= number; i++) {
            fact *= i;
        }
        System.out.println("Factorial of " + number + " is: " + fact);
    }
}
```

Output:

Factorial of 5 is: 120

4. Challenge: Print Fibonacci series

Code:

```
public class FibonacciSeries {
    public static void main(String[] args) {
        int a = 0, b = 1, c;
        int n = 10;
        System.out.print("Fibonacci Series: " + a + " " + b);
        for (int i = 2; i < n; i++) {
            c = a + b;
            System.out.print(" " + c);
            a = b;
            b = c;
        }
    }
}
```

Output:

Fibonacci Series: 0 1 1 2 3 5 8 13 21 34

5. Challenge: Find sum of even numbers from 1 to 100

Code:

```
public class SumEvenNumbers {
    public static void main(String[] args) {
        int sum = 0;
        for (int i = 2; i <= 100; i += 2) {
            sum += i;
        }
        System.out.println("Sum of even numbers from 1 to 100: " + sum);
    }
}
```

Output:

Sum of even numbers from 1 to 100: 2550