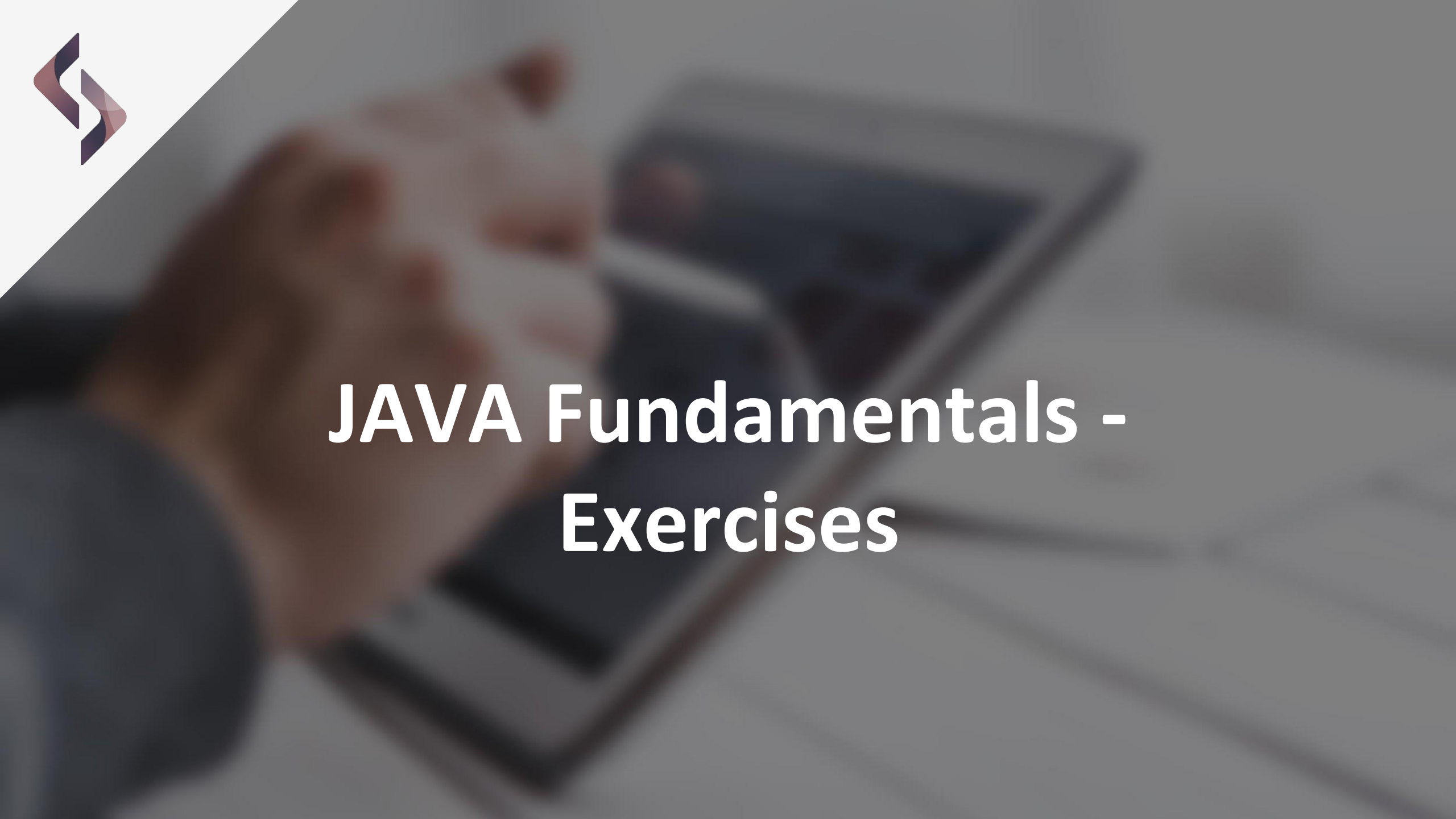

JAVA Fundamentals - Exercises

String Exercises

1. Write a Java program to print **'Hello'** on one line and then print your name on a separate line.
   Output:
   Hello
   John
2. Write a Java program to display the following pattern:

```
    J    a   v     v  a
    J   a a   v   v  a a
 J  J  aaaaa   V V  aaaaa
  JJ  a     a   V  a     a
```

3. Write a Java program to convert a given string into lowercase: "**THE QUICK BROWN FOX JUMPS OVER THE LAZY DOG**"
   Output: the quick brown fox jumps over the lazy dog
4. Write a Java program to reverse a word: "**avaJ**"
   Output: Java
5. Write a Java program to extract the first half of a string of even length: "**Programmer**"
   Output: Progr

String Exercises

6. Write a Java program to create the concatenation of the two strings except removing the first character of each string. The length of the strings must be 1 and above: "**Java**" and "**Fundamentals**"
   Output: avaundamentals
7. Write a java program to get the length of a given string: "**This is Java!**"
   Output: 13 characters
8. Write a java program to compare two strings lexicographically, ignoring case differences: "**This is a comparison**" equals "**THIS is A Comparison**"
9. Write a Java program to check whether a given string ends with the contents of another string: "**Java exercises**" ends with "**ses**"
10. Write a Java program to count the letters, spaces, numbers and other characters of an input string: "**Aa kiu, I swd skieo 2387. GH kiu: sieo?? 25.33**"
    Output: 23 letters, 9 spaces, 8 numbers, 6 others

Data Types Exercises

1. Write a Java program to print the sum of two numbers: 74 + 36 = 110
2. Write a Java program to divide two numbers and print on the screen: 50 / 3 = 16 remainder 2
3. Write a Java program to print the result of the following operations:
   -5 + 8 * 6 = 43
   (55+9) % 9 = 1
   20 + -3*5 / 8 = 19
   5 + 15 / 3 * 2 - 8 % 3 = 13
4. Write a Java program to compute the specified expressions and print the output:
   ((25.5 * 3.5 - 3.5 * 3.5) / (40.5 - 4.5)) = 2.138888888888889
5. Write a Java program to print the area and perimeter of a circle: radius = 7.5
   Output: Area = 176.71458676442586; Perimeter = 47.12388980384689
6. Write a Java program that takes three numbers as input to calculate and print the average of the numbers: 10, 20, 30
   Output: Average = 20

Data Types Exercises

7. Write a Java program to print the area and perimeter of a rectangle: Width = 5.5; Height = 8.5
   Output: Area = 47.60; Perimeter = 28.20
8. Write a Java program to swap two variables: a = 5; b = 13
   Ouput: a = 13; b = 5;
9. Write a Java program to compare two numbers and print if they are equal or different, smaller, larger, smaller or equal, larger or equal: 25; 39
   25 != 39
   25 < 39
   25 <= 39
10. Write a Java program to compute the sum of the digits of an integer: 133
    Output: 7

Loops Exercises

1. Write a Java program that takes a number and prints its multiplication table up to 10: 8
   Output: 8, 16, 24, 32, …, 80
2. Write a Java program that lists all even numbers from 1 to 100
   Output: 2, 4, 6, 8, ...,100
3. Write a Java program that accepts an integer (n) and displays n, nn, nnn, nnnn, nnnnnn: 5
   Output: 5, 55, 555, 5555, 55555
4. Write a Java program to print numbers between 1 to 100 which are divisible by 3, 5 and both
   Divided by 3 - 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, 36, 39, 42, 45, 48, 51, 54, 57, 60, 63, 66, 69, 72, 75, 78, 81, 84, 87, 90, 93, 96, 99
   Divided by 5 - 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75, 80, 85, 90, 95
   Divided by 3 & 5 - 15, 30, 45, 60, 75, 90
5. Write a Java program that prints all the powers of a number under 100: 3
   Output: 3, 9, 27, 81

Loops Exercises

6. Write a Java program to print Fibonacci series of n terms: 10
   Output: 0, 1, 1, 2, 3, 5, 8, 13, 21, 34
7. Write a Java program to print the following:

8. Write a program that prints the first n prime numbers: n = 4
   Output: 2, 3, 5, 7
9. Write a program that prints the first n numbers, with an n increment: n=4
   Output: 4, 8, 12, 16
10. Write a java program to calculate the factorial value of given number: n=5
    Output: 120 (1*2*3*4*5)

Arrays Exercises

1. Write a Java program to sum values of an array: [1, 7, 3, 10, 9]
   Output: 30
2. Write a Java program to calculate the average value of array elements: [1, 7, 3, 10, 9]
   Output: 6
3. Write a Java program to print all odd numbers from an array: [1, 7, 3, 10, 9]
   Output: 1, 7, 3, 9
4. Write a Java program to find the maximum and minimum value of an array: [1, 7, 3, 10, 9]
   Output: Min=1; Max=10
5. Write a Java program to reverse an array of integer values: [1, 7, 3, 10, 9]
   Output: [9, 10, 3, 7, 1]
6. Write a Java program to find the number of even and odd integers in a given array of integers: [1, 7, 3, 10, 9]
   Output: Odd=4; Even=1

Arrays Exercises

7. Write a Java program to insert an element at a specific position into an array: [1, 7, 3, 10, 9]; insert 4 at position 2; remember that an array starts from 0
   Output: [1, 7, 4, 3, 10, 9]
8. Write a Java program to find the duplicate values of an array of integers: [1, 7, 3, 7, 10, 1, 9]
   Output: 1 & 7
9. Write a Java program to find the second largest element in an array: [1, 7, 3, 10, 9]
   Output: 9
10. Write a Java program to find all pairs of elements in an array whose sum is equal to a specified number: [1, 2, 7, 3, 10, 2, 9] with sum 4
    Output: 1-3; 2-2