Java Problems Sheets

1. Basic Syntax Sheet

1. ***Print "Hello, World!"***
    - ***Write a program to display "Hello, World!" on the screen.***
    - ***Expected Output:***

      Hello, World!

2. ***Swap Two Numbers Without Using a Third Variable***
    - ***Given two numbers, swap their values without using a third variable.***
    - ***Example Input: a = 5, b = 10***
    - ***Expected Output: a = 10, b = 5***
3. ***Check If a Number Is Even or Odd***
    - ***Take an integer input and check whether it is even or odd.***
    - ***Example Input: 7***
    - ***Expected Output: Odd***
4. ***Find the Largest of Three Numbers***
    - ***Compare three user-input numbers and print the largest.***
    - ***Example Input: 12, 25, 9***
    - ***Expected Output: 25 is the largest number***
5. ***Sum of Digits of a Number***
    - ***Compute the sum of all digits of a given number.***
    - ***Example Input: 345***
    - ***Expected Output: 12***

2. Control Flow Sheet

1. ***Check If a Number Is Prime***
    a. ***Determine if the given number is prime.***
    b. ***Example Input: 13***
    c. ***Expected Output: Prime Number***

2. ***Print the First 10 Fibonacci Numbers***
    a. ***Generate and print the first 10 numbers of the Fibonacci sequence.***
    b. ***Expected Output: 0, 1, 1, 2, 3, 5, 8, 13, 21, 34***

3. ***Factorial of a Number Using Recursion***
    a. ***Calculate the factorial of a number using recursion.***
    b. ***Example Input: 5***
    c. ***Expected Output: 120***

4. ***Reverse a Number***
    a. ***Reverse the digits of a given number.***
    b. ***Example Input: 1234***
    c. ***Expected Output: 4321***

5. ***Check If a Number Is a Palindrome***

- ***Determine if a number is the same forward and backward.***
- ***Example Input: 121***
- ***Expected Output: Palindrome***

3. Arrays Sheet

1. Find the Largest Element in an Array
2. Find the Second Largest Number in an Array
3. Calculate the Sum of All Elements in an Array
4. Reverse an Array
5. Find the Frequency of Elements in an Array

4. Strings Sheet

1. Count the Number of Vowels and Consonants in a String
2. Check If Two Strings Are Anagrams
3. Reverse a String
4. Count the Occurrences of a Specific Character in a String
5. Find the Longest Word in a Given String

5. Object-Oriented Programming (OOP) Sheet

6. Create a `` Class (Attributes: name, age)
7. Create a `` Class (Attributes: brand, model, year)
8. Create a `` Class (Methods: calculateArea())
9. Create a `` Class (Methods: deposit(), withdraw(), checkBalance())
10. **Create a **** Class that Inherits from **

6. Files & Exceptions Sheet

1. Create a File and Write Some Text
2. Read a File and Display Its Content
3. Copy the Contents of One File to Another
4. Count the Number of Lines in a File
5. Handle `` (Division by Zero)

7. Additional Practice Problems Sheet

1. ***Generate a Random Number Within a Given Range***
2. ***Convert a Decimal Number to Binary***
3. ***Find the GCD (Greatest Common Divisor) of Two Numbers***
4. ***Remove Duplicate Elements from an Array***
5. ***Implement a Simple Number Guessing Game***

💡 Tips:

- ***Start with easy problems and move to complex ones.***
- ***Store your solutions on GitHub to track progress.***
- ***Practice regularly to improve your Java skills!*** 🚀