

Tasks for the "Java Methods+" File

1. Method Basics

- Create a simple method named `greet` that prints "Hello, World!".
- Call the `greet` method from the `main` method in your class.

2. Return Types

- Write a method named `addNumbers` that takes two integers as parameters and returns their sum. Call this method and print the result.

3. Parameters and Arguments

- Create a method `displayUserDetails` that takes a `String` name and an `int` age as parameters and prints them in a formatted message.

4. Access Modifiers

- Write two methods: one public method and one private method. Observe and note the differences when you try to call each method from outside the class.

5. Scope of Variables

- Create a method that declares a variable inside it and tries to use it outside the method. Note the result and explain why it happens.

6. Method with Boolean Return

- Write a method `isEven` that accepts an integer and returns `true` if the number is even, otherwise returns `false`. Test this method with different inputs.

7. Method Overloading

- Define two methods with the same name `printMessage`. One should take a `String` as a parameter, and the other should take an `int`. Call both methods to see how overloading works.

8. Void vs. Non-Void Methods

- Write a method `displayGreeting` that prints a message (void) and another method `getGreeting` that returns a string (non-void). Use both methods in your program.

9. Combining Parameters and Return

- Create a method `calculateArea` that takes two `double` parameters for width and height and returns the area. Call the method and display the result.

10. Modular Code Practice

- Write a program with the following methods:
 - `inputDetails`: Accepts user input for name and age.
 - `processDetails`: Concatenates the name with a greeting message.
 - `displayDetails`: Prints the final message. Test the program for its modularity and readability.