Leap Year Checker:

Input: A year.
Output: Whether the year is a leap year or not.

Example:

- Input: 2024

- Output: "2024 is a leap year."

- Input: 2023

- Output: "2023 is not a leap year."

Solution 1: Leap Year Checker using if-else

This solution checks if a year is a leap year using basic if-else conditions.

Code:

```java
import java.util.Scanner;

public class LeapYearCheckerIfElse {

    // Method to check if a year is a leap year
    public static boolean isLeapYear(int year) {
        // A leap year is divisible by 4 but not divisible by 100, except
        if (year % 4 == 0) {
            if (year % 100 == 0) {
                return year % 400 == 0;
            } else {
                return true;
            }
        } else {
            return false;
        }
    }

    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        System.out.println("Enter a year to check if it's a leap year:");
        int year = scanner.nextInt();
```

```java
            if (isLeapYear(year)) {
                System.out.println(year + " is a leap year.");
            } else {
                System.out.println(year + " is not a leap year.");
            }
            scanner.close();
        }
    }
```

Output:

```
Enter a year to check if it's a leap year:
 1900
1900 is not a leap year
```

```
Enter a year to check if it's a leap year:
 1020
1020 is a leap year.
```

Explanation :

- **Leap Year Rule:** A year is a leap year if:

    - Divisible by 4

    - Not divisible by 100 unless divisible by 400

- **Input:** User inputs a year.

- **isLeapYear():** This method checks the leap year condition using if-else logic.

- **Output:** Displays whether the input year is a leap year or not.

Solution 2: Leap Year Checker using Ternary Operator

This solution checks if a year is a leap year using a ternary operator for a concise approach.

Code:

```java
import java.util.Scanner;

public class LeapYearCheckerTernary {

    // Method to check if a year is a leap year using a ternary operator
    public static boolean isLeapYear(int year) {
```

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```java
        // Using ternary operator for leap year check
        return (year % 4 == 0) && (year % 100 != 0 || year % 400 == 0);
    }

    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        System.out.println("Enter a year to check if it's a leap year:");
        int year = scanner.nextInt();

        // Using ternary operator for result output
        String result = isLeapYear(year) ? year + " is a leap year." : year
        System.out.println(result);
        scanner.close();
    }
}
```

Output:

```
 Enter a year to check if it's a leap year:
 2000
2000 is a leap year.
```

```
 Enter a year to check if it's a leap year:
 1961
1961 is not a leap year.
```

Explanation: