**Exercise 01:**

Write a Java program that takes an integer as input and determines whether it is even or odd. Use conditional statements to make this determination and print an appropriate message.

**Exercise 02:**

Write a Java program that calculates the grade for a student based on their exam score. The program should take the exam score as input and then determine and display the corresponding grade according to the following grading scale:

Score >= 90: A

Score >= 80: B

Score >= 70: C

Score >= 60: D

Score < 60: F

**Exercise 03:**

Write a Java program that calculates the day of the week for a given date. The program should take three inputs: the day, month, and year, and then determine and display the day of the week for that date.

You can use Zeller's Congruence formula for this purpose:

h = (q + (13 \* (m + 1)) / 5 + K + (K / 4) + (J / 4) - 2 \* J) % 7

Where:

* h is the day of the week (0 = Saturday, 1 = Sunday, 2 = Monday, ..., 6 = Friday)
* q is the day of the month
* m is the month (3 = March, 4 = April, ..., 14 = February)
* J is the century (year / 100)
* K is the year within the century (year % 100)

**Exercise 04:**

Write a Java program that determines whether a given year is a leap year or not. The program should take a year as input and then determine and display whether it's a leap year or not. A leap year is a year that is divisible by 4, except for years that are divisible by 100 but not divisible by 400.

year % 4 == 0

year % 100 != 0

year % 400 == 0

**Exercise 05:**

Write a Java program that helps a user determine the type of a given triangle based on its three side lengths. The program should take the lengths of the three sides as input and then determine and display whether the triangle is equilateral, isosceles, or scalene.

**Exercise 06:**

Write a Java program that helps a user determine whether a given year is a "special" year. A year is considered special if the sum of its digits is divisible by 3. The program should take a year as input and then determine and display whether it's a special year or not.

**Exercise 07:**

Write a Java program that helps a user determine the season of the year based on the month and day. The program should take the month and day as input and then determine and display the corresponding season (spring, summer, fall, or winter).

**Exercise** **08**:

Write a Java program that calculates the cost of a coffee order based on the size and type of coffee chosen by the user. The program should take the size (small, medium, or large) and type (regular or decaf) of coffee as input and then determine and display the total cost of the coffee order.

Assume the following prices:

* Small regular coffee: $2.00
* Small decaf coffee: $2.50
* Medium regular coffee: $2.50
* Medium decaf coffee: $3.00
* Large regular coffee: $3.00
* Large decaf coffee: $3.50

**Exercise 09:**

Write a Java program that helps a user determine whether a given year is a leap year or not, and also calculate the number of days in February for that year. The program should take a year as input and then determine and display whether it's a leap year or not, and how many days February has in that year.

A leap year is a year that is divisible by 4, except for years that are divisible by 100 but not divisible by 400.

**Exercise 10**

**Question:** Write a Java program that calculates the Body Mass Index (BMI) for a user based on their weight in kilograms and height in meters. The program should take the weight and height as input, calculate the BMI, and then determine and display the BMI category based on the calculated value:

* BMI < 18.5: Underweight
* 18.5 ≤ BMI < 24.9: Normal weight
* 25 ≤ BMI < 29.9: Overweight
* BMI ≥ 30: Obese

**Exercise 11**

**Question:** Write a Java program that checks whether a given string is a palindrome. The program should take a string as input, remove any spaces, convert it to lowercase, and then determine and display whether the string is a palindrome.

**Exercise 12**

**Question:** Write a Java program that generates a random number between 1 and 100 and then prompts the user to guess the number. The program should give feedback on whether the guessed number is too low, too high, or correct. The process should repeat until the user guesses the correct number.

**Exercise 13**

**Question:** Write a Java program that reads a list of integers from the user, stores them in an array, and then calculates and displays the sum, average, maximum, and minimum of the numbers in the array.

**Exercise 14**

**Question:** Write a Java program that helps a user determine whether a given year is a leap year or not, and also calculate the number of days in February for that year. The program should take a year as input and then determine and display whether it's a leap year or not, and how many days February has in that year.