Week1 Basic Java Practice questions – Control Structures

1. Even or Odd Number Check:

Write a program that asks the user to enter a number. Use an `if` statement to check if the number is even or odd:

- If the number divided by 2 has a remainder of 0 (even number), print "The number is even."
- Otherwise (odd number), print "The number is odd."

2. Age Verification:

Create a program that asks the user for their age. Use an `if` statement to determine eligibility to vote:

- If the user's age is 18 or above, print "You are eligible to vote."
- Otherwise, print "You are not eligible to vote."

3. Vending Machine (Single Choice):

Simulate a simple vending machine with two options:

- Display a message "Press 1 for juice or 2 for soda."
- Ask the user for their choice using `nextInt()` method.
- Use an `if` statement to check the choice:
    - If 1, print "Dispensing juice."
    - If 2, print "Dispensing soda."
    - Otherwise, print "Invalid choice."

4. Temperature Check:

Write a program that asks the user for the current temperature. Use a series of `if` statements to categorize the temperature:

- If the temperature is above 30 degrees Celsius, print "It's hot!"
- If the temperature is between 20 and 30 degrees Celsius, print "It's warm."
- If the temperature is between 10 and 20 degrees Celsius, print "It's cool."
- Otherwise, print "It's cold."

5. Positive, Negative, or Zero:

Create a program that asks the user to enter a number. Use an `if` statement with `else if` to check the number's sign:

- If the number is greater than 0, print "The number is positive."

- If the number is less than 0, print "The number is negative."
- Otherwise, print "The number is zero."

6.Grading System:

Write a program that asks the user for their exam score. Use a `switch` statement to assign a letter grade based on the score:

- 90-100: "A" (Excellent)
- 80-89: "B" (Very Good)
- 70-79: "C" (Good)
- 60-69: "D" (Satisfactory)
- Below 60: "F" (Fail)
- You can add a `default` case for any invalid score input.

7.Simple Calculator:

Create a basic calculator that performs addition or subtraction based on user input:

- Display a message "Enter 1 for addition or 2 for subtraction."
- Ask the user for their choice using `nextInt()`.
- Use an `if` statement to check the choice:
    - If 1, ask for two numbers and print their sum.
    - If 2, ask for two numbers and print their difference.
- Add an `else` statement to handle invalid choices.

8.Leap Year Check:

Write a program to determine if a given year is a leap year. A leap year is a year divisible by 4, but not by 100 unless also divisible by 400. Use a combination of `if` and `else if` statements to achieve this:

- Ask the user for the year.
- Check divisibility by 4:
    - If divisible by 4 but not by 100, it's a leap year.
    - If divisible by 100, further check divisibility by 400.
        - If divisible by 400, it's a leap year.
- Otherwise, it's not a leap year. (Use `else` statement)