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JAVA LOOPS IN JAVA

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Do While LOOP :-

A do-while loop is a type of loop in programming that repeats a block of code until a certain condition is met. Unlike other types of loops, a do-while loop will always execute the block of code at least once, even if the condition is false.

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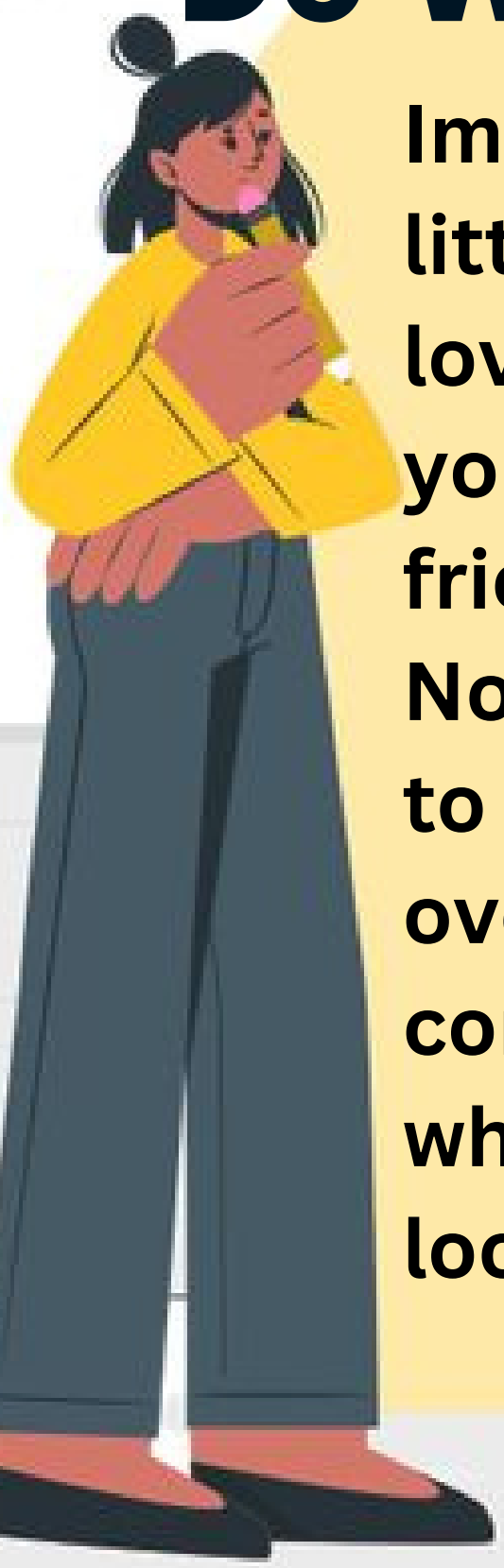
Do While LOOP



Imagine you have a cute little robot friend who loves playing a game with you. Let's call your robot friend "Robo-Buddy." Now, Robo-Buddy wants to do something over and over again until a certain condition is met. This is where the "Do-While" loop comes in!

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Syntax :-

Syntax.java

```
do {
    // Robo-Buddy's action (What
Robo-Buddy will do)
} while (condition);
```

#Quote #Programming #Selfcare

A "Do-While" loop has two essential parts:

1. **The "do" part: This is where Robo-Buddy will do something repeatedly.**
2. **The "while" part: This is the condition that Robo-Buddy checks before deciding whether to keep playing the game or stop.**

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Example:-

RoboBuddyGame.java

```
public class RoboBuddyGame {
    public static void main(String[] args) {
        int number = 1; // Robo-Buddy starts counting from 1
        do {
            // Robo-Buddy counts and says the number out loud
            System.out.println("Robo-Buddy says: " + number);

            number++; // Robo-Buddy adds 1 to the current
number to get the next number
        } while (number <= 5); // Robo-Buddy keeps playing
until the number is less than or equal to 5
    }
}
```

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Example Explanation:-

1. **We create a class called RoboBuddyGame to contain our game code.**
2. **Inside the main method, we declare and initialize an integer variable number with a value of 1. This is where Robo-Buddy starts counting.**
3. **The do-while loop is used to make sure Robo-Buddy says the numbers at least once and continues counting until the condition inside the while part becomes false.**
4. **Inside the loop, we use System.out.println() to display the message "Robo-Buddy says: " followed by the value of number.**
5. **After displaying the message, we increment the value of number by 1 using the number++ statement. This ensures that Robo-Buddy moves to the next number.**
6. **The loop continues until the condition number <= 5 becomes false. Once number becomes 6, the loop stops, and the game ends.**

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Example Output:-

Robo-Buddy says: 1
Robo-Buddy says: 2
Robo-Buddy says: 3
Robo-Buddy says: 4
Robo-Buddy says: 5

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Flowchart:-

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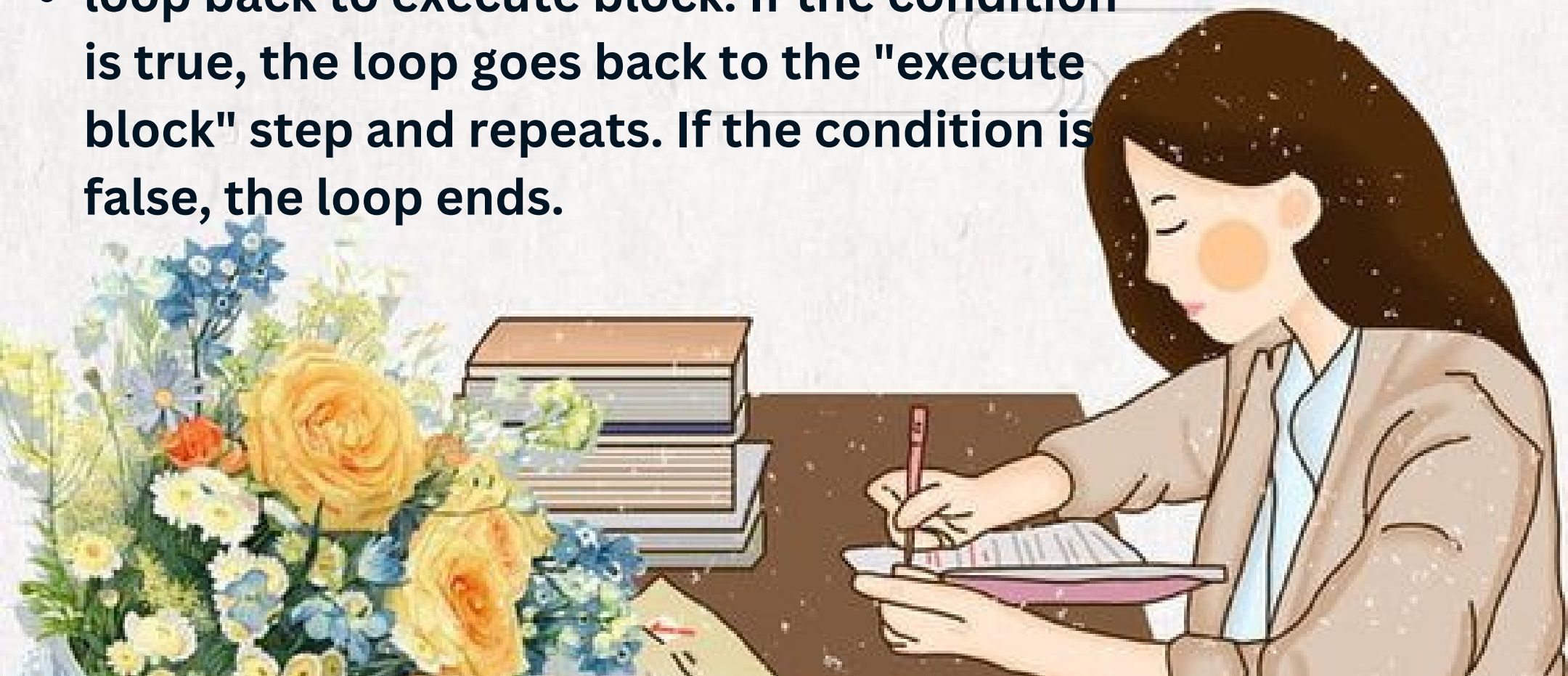
Explanation :-

- start: This is the starting point of the flowchart.
- execute block: This is the block of code that is executed.
- check condition: This checks the condition of the loop.
- condition true?: This checks whether the condition is true or false.
- loop back to execute block: If the condition is true, the loop goes back to the "execute block" step and repeats. If the condition is false, the loop ends.



Advantages:-

- A do-while loop will always execute the block of code at least once, which can be useful in certain situations.
- A do-while loop can simplify code by removing the need for a separate initialization step.

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Disadvantages:-

- A do-while loop can be less efficient than other types of loops, because it always executes the block of code at least once, even if the condition is false.
- A do-while loop can be more difficult to read and understand than other types of loops.

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