



Name:

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WHILE..DO..ENDWHILE LOOP

A **While...Do...Endwhile loop** is a **pre-condition loop**. This means the condition is checked **before** the loop executes. If the condition evaluates to True, the loop body runs; otherwise, the loop is skipped.

Structure of a While..Do..Endwhile Loop

```
WHILE Condition DO
    // Code to be repeated
ENDWHILE
```

1. **WHILE condition:**

- The condition is evaluated at the start of each iteration. If it is True, the loop body executes.
- If it is False, the loop terminates immediately.

2. **Loop Body:**

- Contains the code to be executed repeatedly.

3. **ENDWHILE:**

- Marks the end of the loop.

Example 1: Counting Numbers

```
Count ← 1
WHILE Count <= 5 DO
    OUTPUT Count
    Count ← Count + 1
ENDWHILE
```

Explanation:

- Initial value: **Count = 1**.
- The loop runs as long as **Count <= 5**.
- Each iteration outputs the value of **Count** and increments it by 1.

- The output will be:

```
1
2
3
4
5
```

Example 2: Calculating the Sum of Numbers

```
Sum ← 0
Number ← 1
WHILE Number <= 10 DO
    Sum ← Sum + Number
    Number ← Number + 1
ENDWHILE
OUTPUT Sum
```

Explanation:

- The loop calculates the sum of numbers from 1 to 10.
- The variable **Number** is incremented each time.
- Final output: 55 (sum of 1+2+3+...+10).

Key Points to Remember

1. **Pre-Condition:** The condition is evaluated **before** the loop runs.
2. **Ensure Termination:** Always update variables within the loop to eventually make the condition False.
3. **Logical Errors:** Carefully test the condition logic to avoid infinite loops or skipped loops.
4. **Initialization:** Variables used in the condition must be properly initialized before the loop starts.

LET'S TEST YOUR UNDERSTANDING

Question 1: Sum of Numbers Until a Limit

Write a pseudocode program to calculate the sum of all numbers entered by a user until the sum reaches or exceeds 50. Display the final sum.

Question 2: Validate User Password

Write a pseudocode program that repeatedly asks the user to enter a password until it matches a predefined password, “MyPassword123”.

