

## What are Control Structures?

Control structures are fundamental building blocks in programming that dictate the **order in which instructions are executed** within a program. They allow a program to make decisions, repeat actions, or jump to different parts of the code, rather than just executing sequentially from top to bottom.

Imagine you're trying to decide what to eat for lunch, and your thought process is a program.

Let's say you're deciding what to have for lunch based on a few conditions, like whether you have enough money and if it's hot outside.

### 1. Conditional Statements (If-Else/If-Elif-Else): These allow your program to make choices.

- "If I have **more than 100 rupees**, then I'll buy a full meal (like a thali). **Else if** I have **between 50 and 100 rupees**, I'll get some samosas and chai. **Otherwise (else)**, I'll just eat the leftovers from last night."
- **How it works in a program:** The program checks a condition. If it's true, it executes one block of code. If not, it checks another condition, and so on.

### 2. Looping Statements (For Loop / While Loop): These allow your program to repeat actions.

- **(For Loop):** "I need to make **rotis for everyone in the family**. For **each person in the family**, I will roll out one roti and cook it."
- **How it works in a program:** The program repeats a block of code a specific number of times (e.g., once for each item in a list) or until a certain condition is met.
- **(While Loop):** "I will **keep stirring the dal** until it thickens."
- **How it works in a program:** The program keeps executing a block of code as long as a certain condition remains true. Once the condition becomes false, it stops.

### 3. Branching Statements (Break/Continue - often within loops): These allow you to alter the normal flow within loops.

- **(Break):** "While I'm shopping for vegetables in the market, if I find **fresh coriander**, I'll buy it and then I'm **done with vegetable shopping** for today." (You exit the loop early)
- **How it works in a program:** Immediately stops the current loop and moves to the code immediately after the loop.
- **(Continue):** "I'm washing dishes. For **each plate**, if it's already **clean**, I'll just **skip it and move to the next one**." (You skip the rest of the current iteration and move to the next one)
- **How it works in a program:** Skips the rest of the current iteration of the loop and proceeds to the next iteration.

In essence, control structures are like the rules and flowcharts that guide how a program makes decisions and performs tasks, much like you follow a set of steps or rules in your daily life.