

Loops

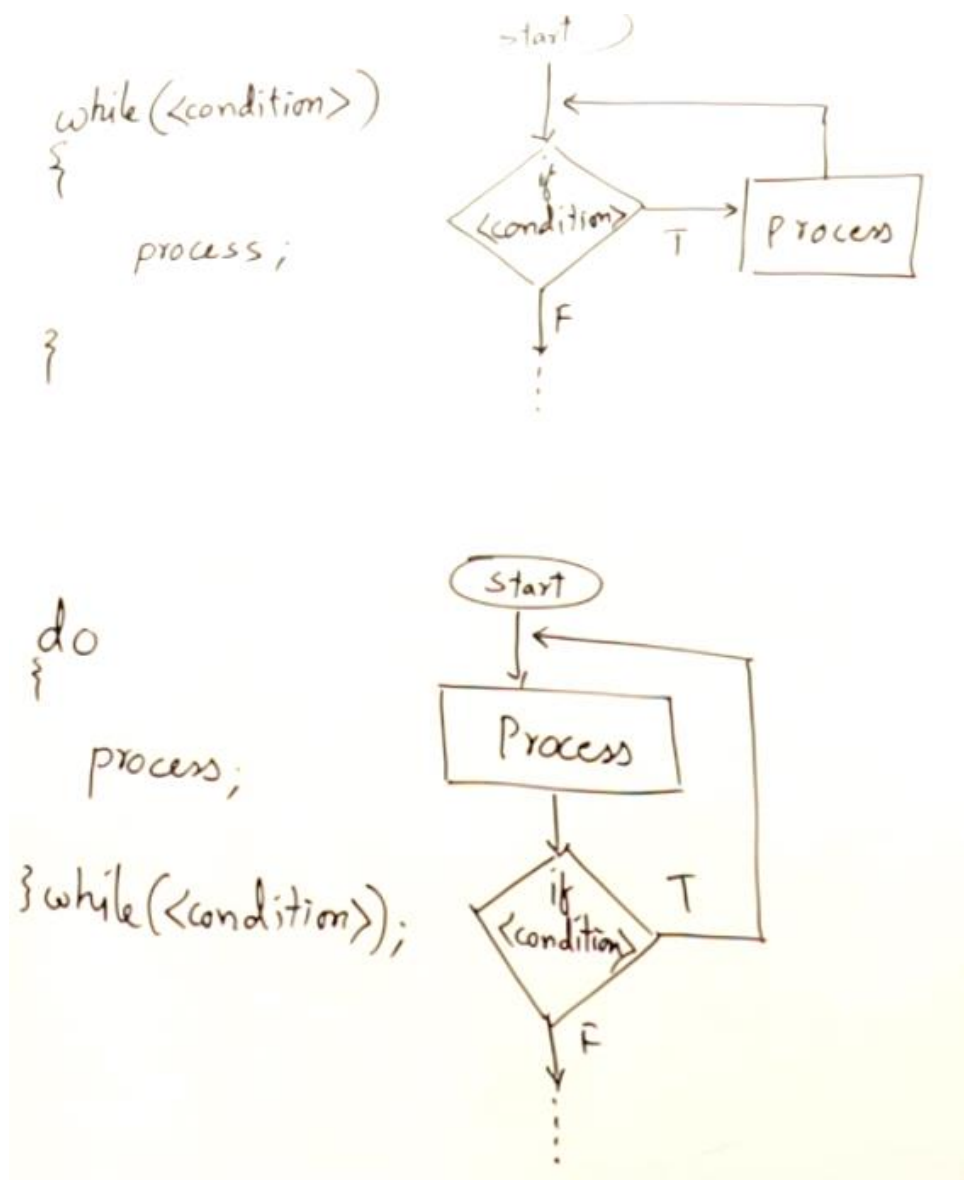
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loop is used to perform certain tasks multiple times.

Types of Loops

1. While
2. Do....while
3. For
4. For Each

1. **While Loop** is used to run a loop for unlimited no. of times until a specific condition is met.
2. **Do....While Loop** is a variant of the While Loop but the only difference is that it will run exactly once before checking the condition.



3. **For Loop** is used to execute certain tasks for a specific number of times. It is also known as counter controlled loop.

for(initialization; condition; updation)

Q1. Write a program to check if a number is Armstrong number or not.

```
#include <iostream>
#include <cmath>
using namespace std;
int main() {
    int num, originalNum, remainder, n = 0;
    double result = 0.0;
    cout << "Enter an integer: ";
    cin >> num;
    originalNum = num;
    while (originalNum != 0) {
        originalNum /= 10;
        ++n;
    }
    originalNum = num;
    while (originalNum != 0) {
        remainder = originalNum % 10;
        result += pow(remainder, n);
        originalNum /= 10;
    }
    if ((int)result == num)
        cout << num << " is an Armstrong number." << endl;
    else
        cout << num << " is not an Armstrong number." << endl;
    return 0;
}
```