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01

Control Structure

Types of Control Structures

Control Structure

A control structure is a **block of code** that **manages the flow of execution** in a program.

Control structures **dictate the order** in which statements are executed **based on certain conditions**.



Sequential Structure

The default structure where statements are executed one after the other in sequence.

Selection Structure

Allows the program to make decisions and execute different blocks of code based on specified conditions.

Repetition Structure

Allows the execution of a block of code repeatedly as long as a specified condition is true.

Types of Control Structure

Sequential Structure

The **default structure** where **statements are executed one after the other in sequence.**

```
main()
{
    // Statement 1
    // Statement 2
    // Statement 3
}
```



Selection Structure

(Conditional Statements)

Allows the program to **make decisions** and **execute different blocks of code based on specified conditions**.

1. if statement
2. if else statement
3. ladder statement
4. nested statements
5. ternary statement
6. switch case



Repetition Structure

(Loops)

Allows the **execution of a block of code repeatedly** as long as a specified **condition is true**.

1. Entry Control Loop

- while loop
- for loop

2. Exit Control Loop

- do while loop



02

Selection Structure

If statement,
If else statement,
Ladder statement

If statement

```
if (condition)
{
    // Code to be executed if the condition is true
}
```

If else statement

```
if (condition)
{
    // Code to be executed if the condition is true
}
else
{
    // Code to be executed if the condition is false
}
```

Ladder statement

```
if (condition 1)
{
    // Code to be executed if condition 1 is true
}
else if (condition 2)
{
    // Code to be executed if condition 2 is true
}
else if (condition 3)
{
    // Code to be executed if condition 3 is true
}
else
{
    // Code to be executed if none of the conditions is true
}
```


TL;DR

Control Structure

A Block of code that manages the flow of execution in a program.

Dictate the order in which statements are executed based on certain conditions.

I.e., Sequential, Selection, and Repetition.

Selection Structure

Allows the program to make decisions.

Execute different blocks of code based on specified conditions.

I.e., if statement, if else statement, and ladder statement.