

# Algorithmic Actions

Tags: Control Flow, Types of Systems Software

## Control Flow

A computational term that refers to the specific order in which the individual actions of a computer program is executed

- normally, the actions are performed sequentially

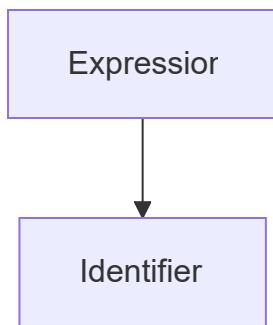
## Selection Statement

A control flow statement that allows a computer to make choices regarding whether certain actions should be performed.

- **one-way selection** - allows to either perform an action or skip the action
- **two-way selection** - allows the computer to choose one of exactly two actions
- **multi-way selection** - allows the computer to choose one of several alternatives

## Name Binding

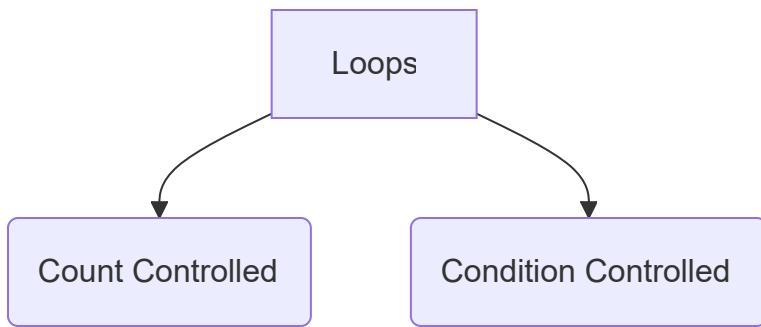
"Name binding is the association of a name, also known as an identifier with a value"



Variable is a storage location paired with an associated symbolic name(identifier), which contains some quantity of information referred to as a value

## Repetition

A **Loop** is a control structure that repeatedly executes a sequences of actions



- **A while loop** is a type of loop where a sequence of actions is repeated as long as some logical condition holds.
- **A counting loop** is one that contains a variable to keep track of the number of times the loop is actually executed
- **Infinite loops** are used to assure a program segment loops forever or until an exception condition arises

## Modularization

is a vital element of programming that allows us to define new computable actions by assigning a name to some computable process

- **A module** is a named sub-process

modules are made flexible by allowing users to feed input values into the code, these inputs are known as **format parameters - function**

## Recursion

*Occurs when a thing is defined in terms of itself or its type*

- Recursive behavior can be defined by two properties:
  1. a simple base case(s) - termination scenario that does not use recursion to produce an answer
  2. a **recursive step** - a set of rules that reduces all other cases toward the base case