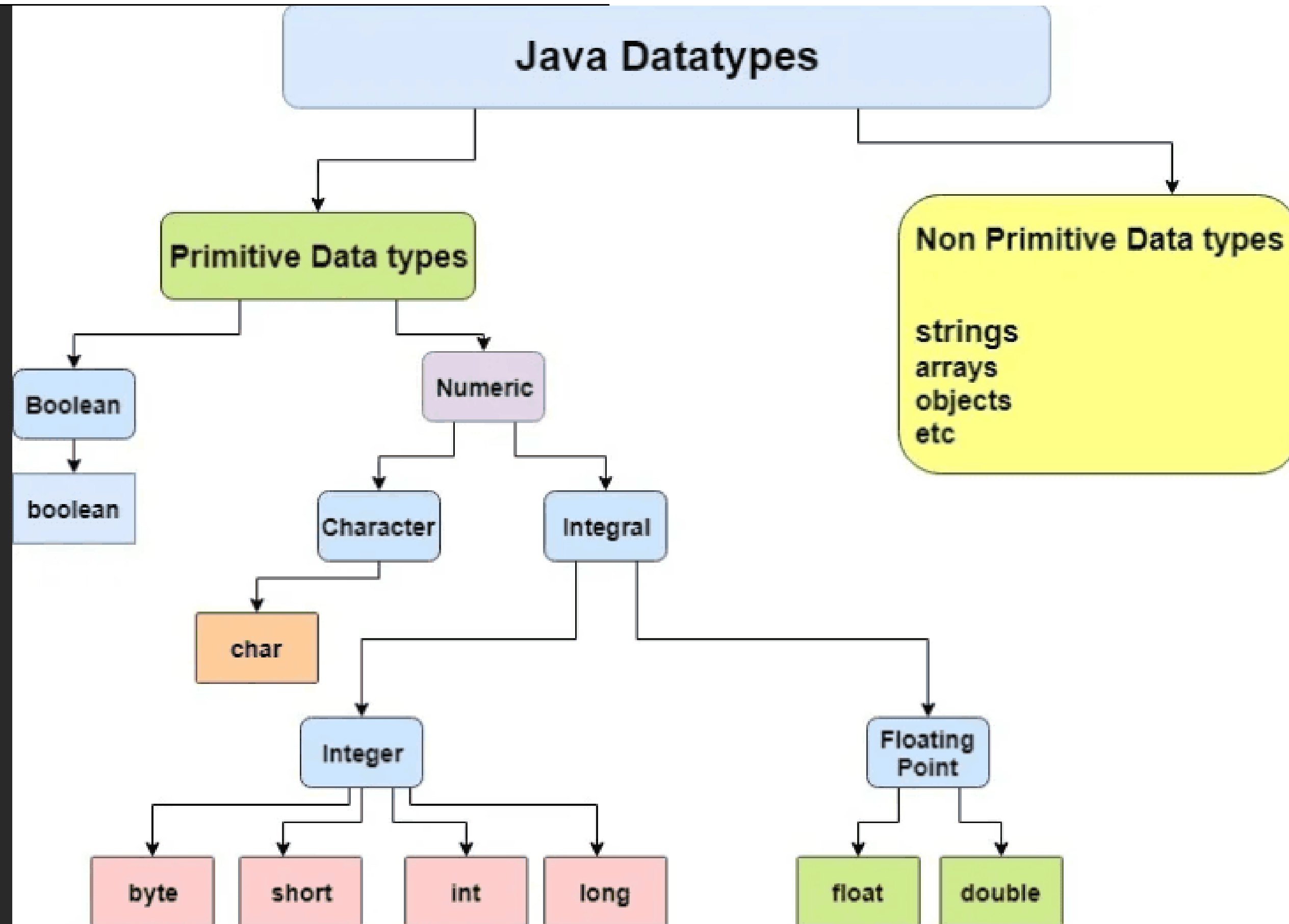# Recap Week 1 & Week 2

By Deepak
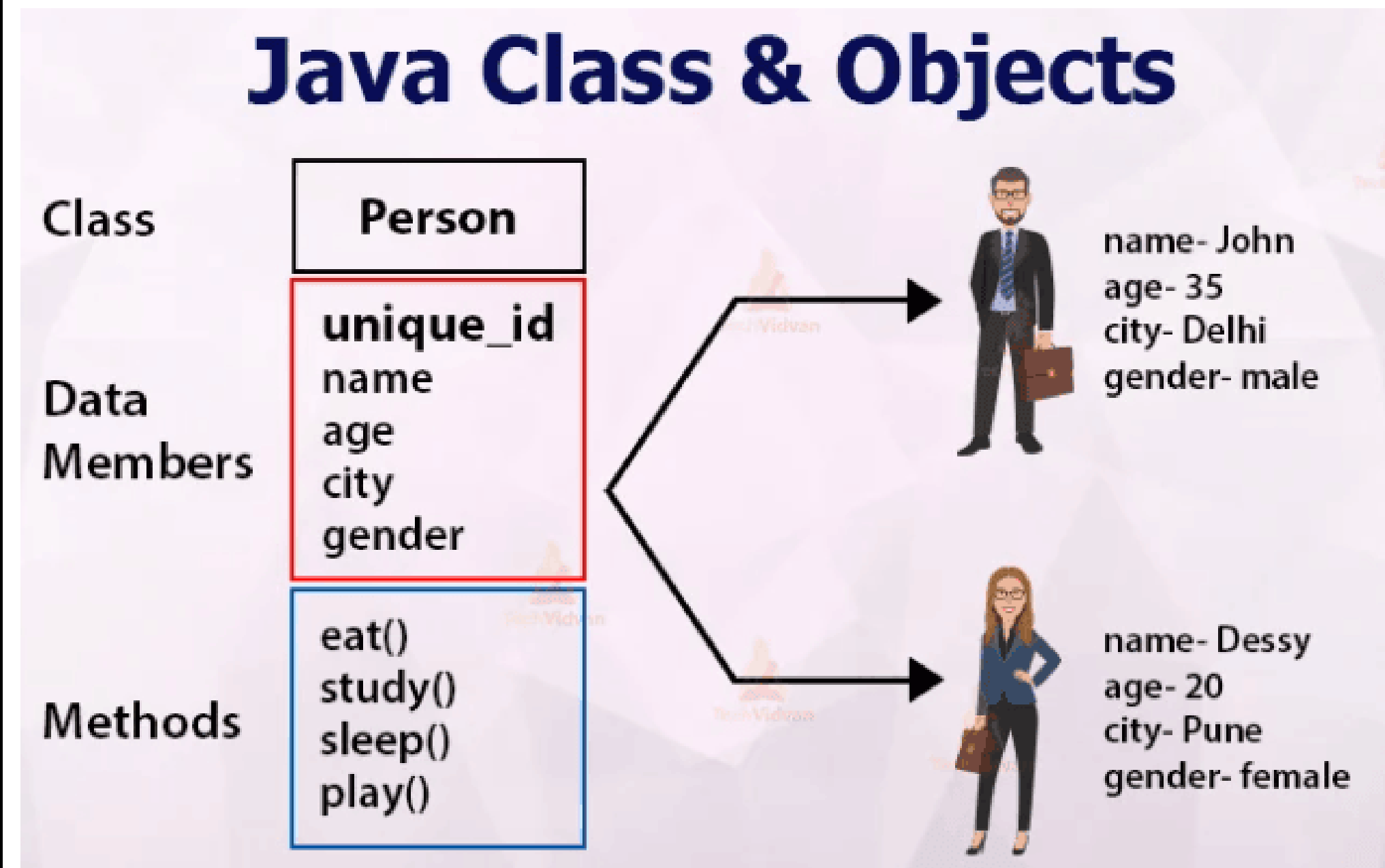
Data Types

Classes and objects

Class – A class can be defined as a template/blueprint that describes the behavior/state that the object of its type support.

Object – Objects have states and behaviors. Example: A dog has states - color, name, breed as well as behaviors – wagging the tail, barking, eating. An object is an instance of a class.

If else, switch


```
if (i == 1)
    statement_1;

else if (i == 2) {
    statement_2;
    statement_3;
}
else if (i == 3)
    statement_3;

else if (i == 4) {
    statement_4;
    statement_5
    statement_6
}
else if (i == 5) {
    statement_5;
    statement_6;
}
else if (i == 6)
    statement_6;
```
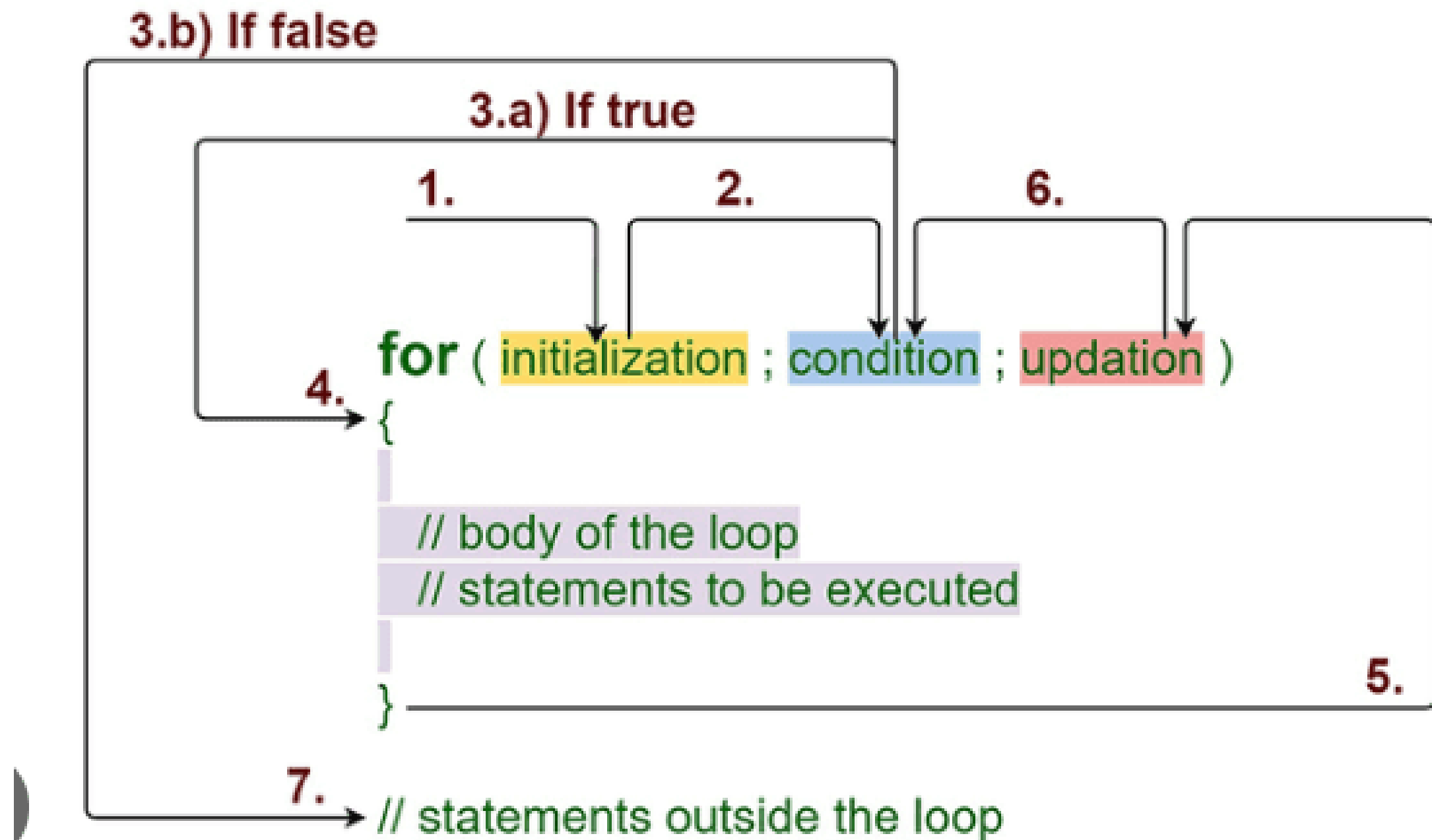
if else vs Switch

```
switch (i)
{
    case 1: statement_1;
            break;
    case 2: statement_2;
    case 3: statement_3;
            break;
    case 4: statement_4;
    case 5: statement_5;
    case 6: statement_6;
}
```

for loop

A "For" Loop is used to repeat a specific block of code a known number of times. For example, if we want to check the grade of every student in the class, we loop from 1 to that number.

For Loop

```
3.b) If false
        3.a) If true
      1.              2.              6.

      for ( initialization ; condition ; updation )
  4.  {

        // body of the loop
        // statements to be executed
                                                    5.
      }

  7.
      // statements outside the loop
```
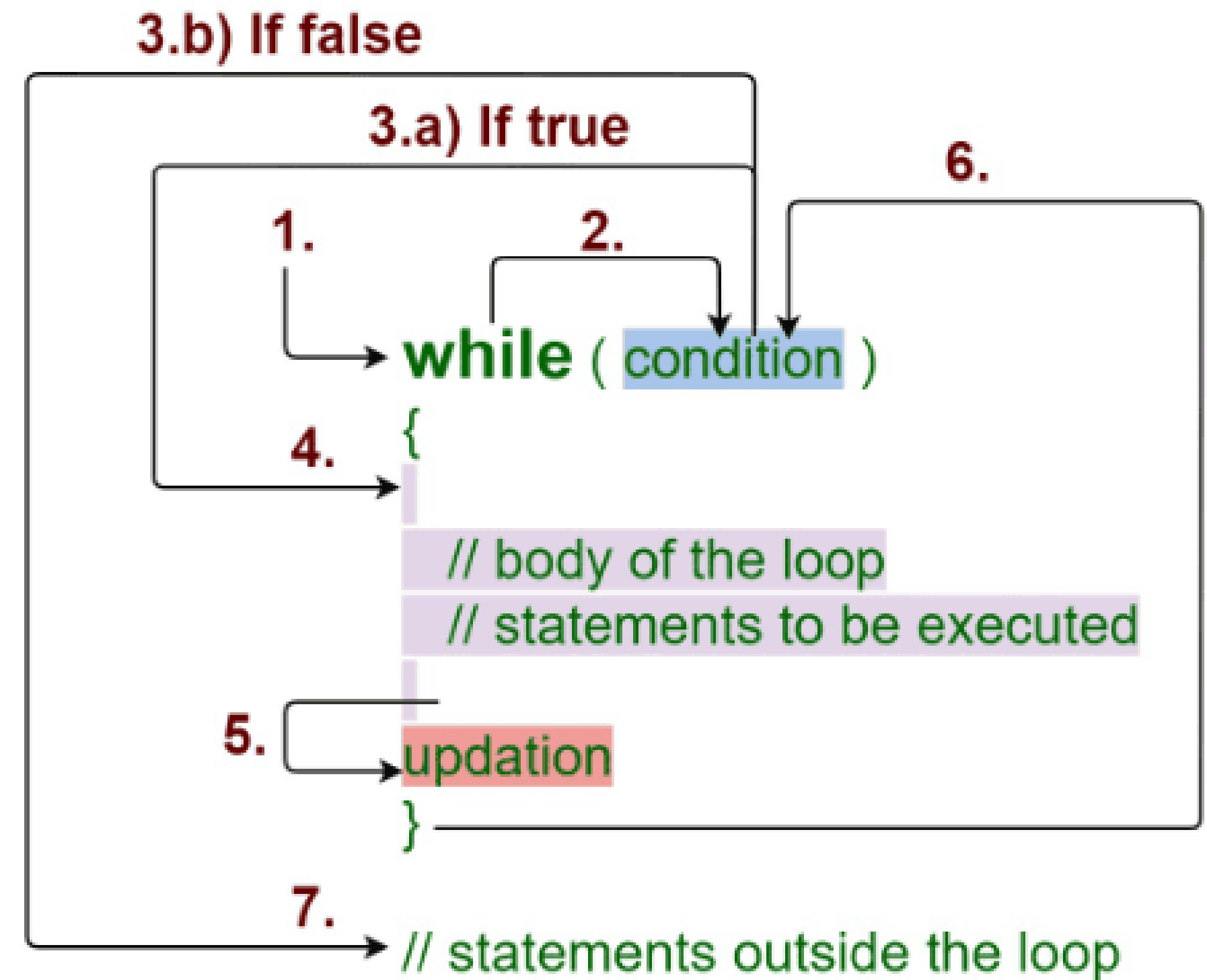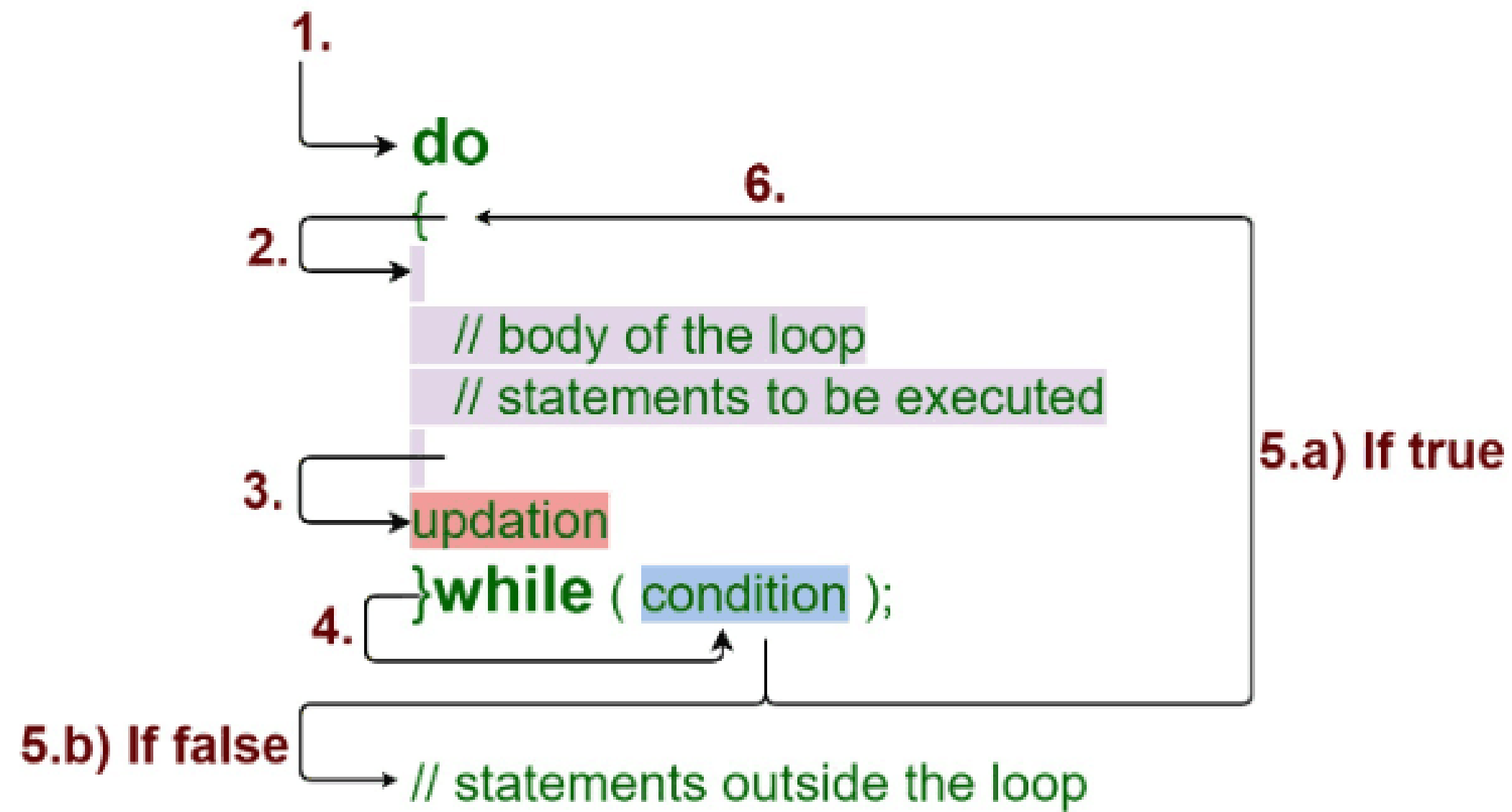
while loop

This repeats until the condition/expression becomes false. Because the while loop checks the condition/expression before the block is executed, the control structure is often also known as a pre-test loop

While Loop

3.b) If false

3.a) If true

6.

1.   **2.**

while (condition)
{

4.

// body of the loop
// statements to be executed

5. updation

}

7.

// statements outside the loop

Do - While Loop

1.

do

6.
{

2.

// body of the loop
// statements to be executed

5.a) If true

3.
updation

}**while** (condition);

4.
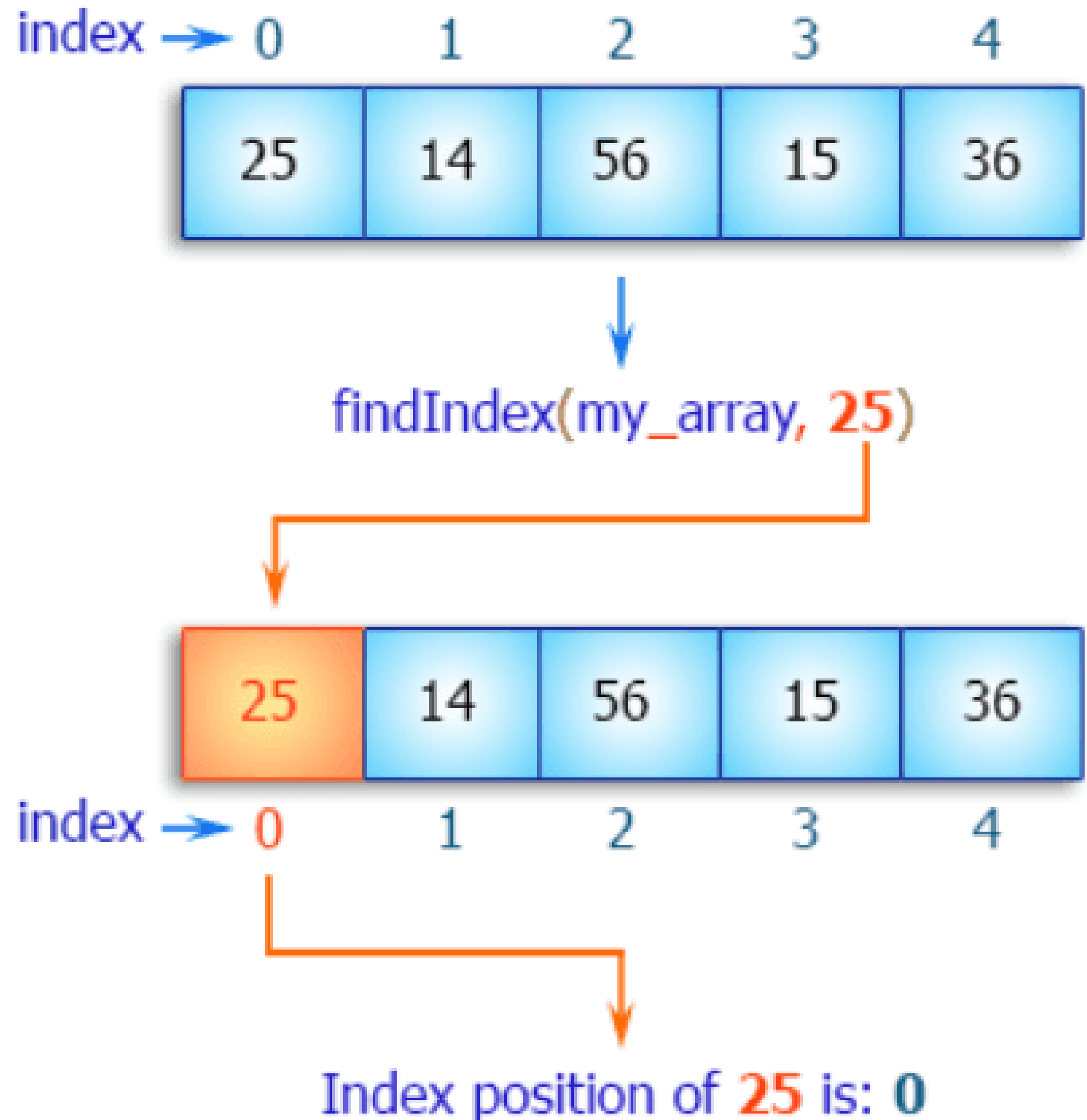
5.b) If false

// statements outside the loop

do while loop

The do/while loop is a variant of the while loop. This loop will execute the code block once, before checking if the condition is true, then it will repeat the loop as long as the condition is true.
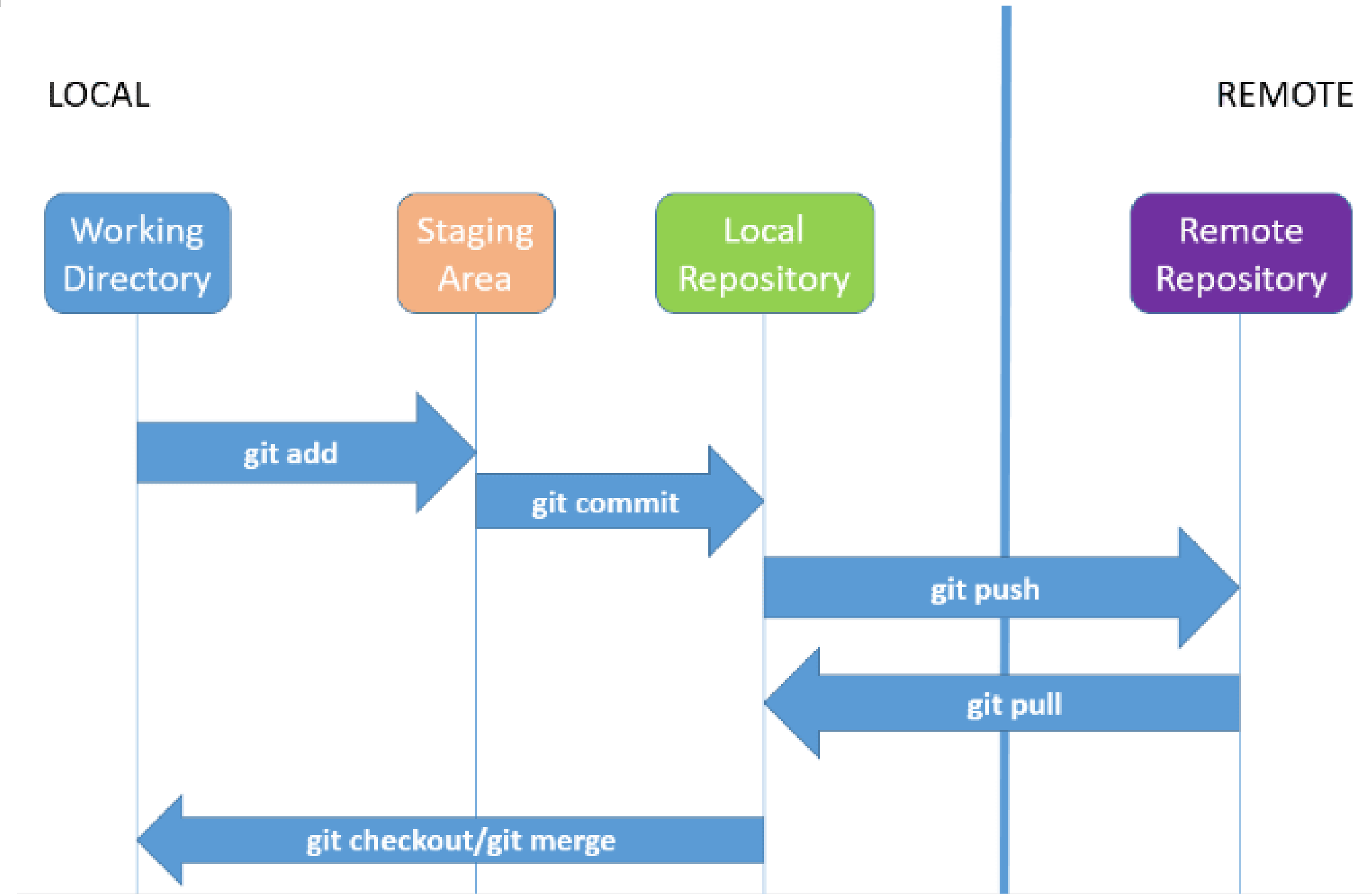
Array In Java

An array is a container object that holds a fixed number of values of a single type. The length of an array is established when the array is created. After creation, its length is fixed.

index ➤ 0   1   2   3   4

| 25 | 14 | 56 | 15 | 36 |

findIndex(my_array, **25**)

| 25 | 14 | 56 | 15 | 36 |

index ➤ 0   1   2   3   4

Index position of **25** is: **0**

Git

Git is a distributed version control system that tracks changes in any set of computer files, usually used for coordinating work among programmers collaboratively developing source code during software development. Its goals include speed, data integrity, and support for distributed, non-linear workflows.

LOCAL

REMOTE

Working Directory

Staging Area

Local Repository

Remote Repository

git add

git commit

git push
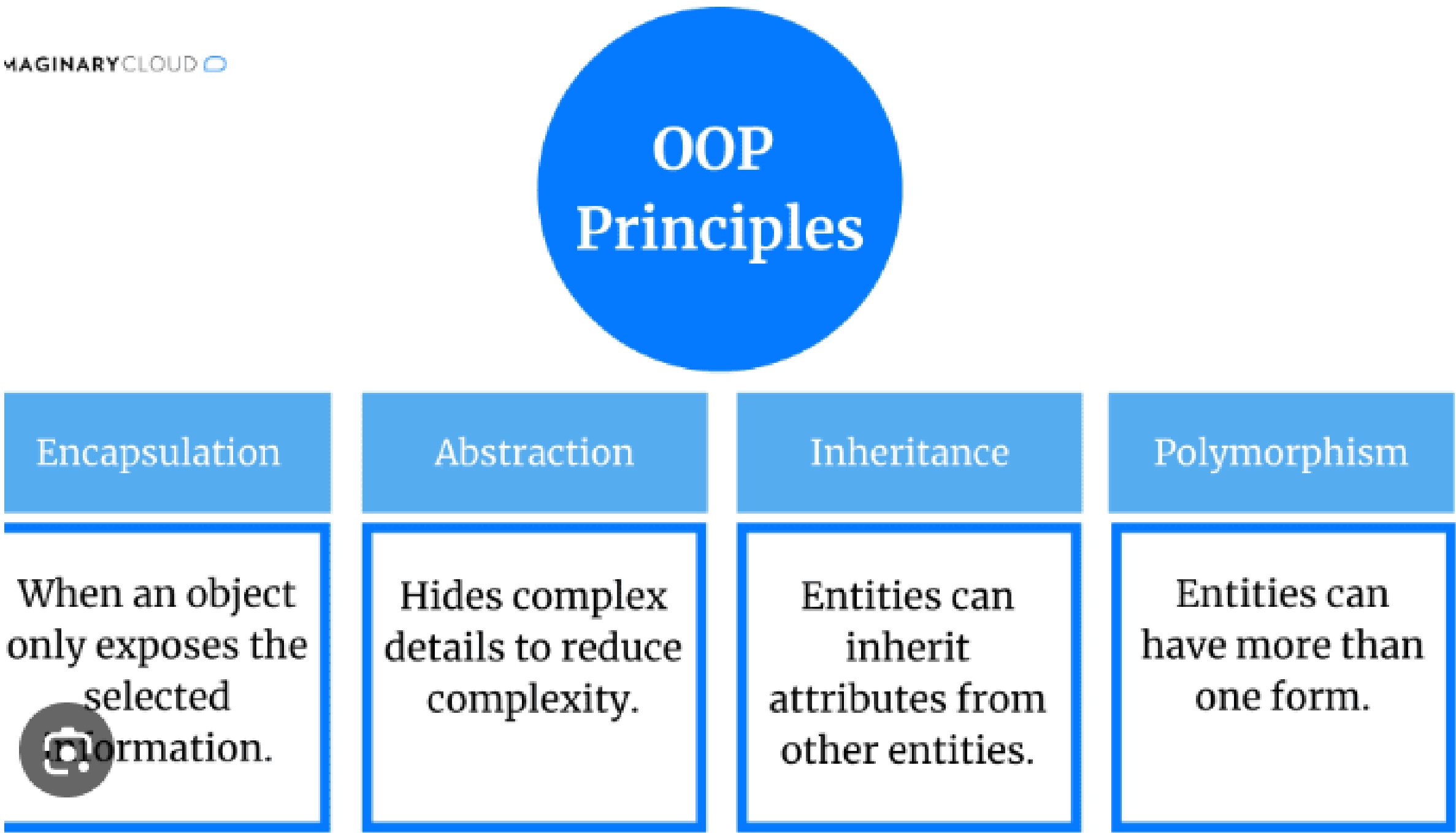
git pull

git checkout/git merge

Access Modifiers

Access modifiers are keywords that can be used to control the visibility of fields, methods, and constructors in a class. The four access modifiers in Java are public, protected, default, and private.

Access Modifiers

Modifier	Class	Package	Subclass	Global
Public	✓	✓	✓	✓
Protected	✓	✓	✓	✗
Default	✓	✓	✗	✗
Private	✓	✗	✗	✗

OOPS Principles

OOps in java is to improve code readability and reusability by defining a Java program efficiently. The main principles of object-oriented programming are abstraction, encapsulation, inheritance, and polymorphism. These concepts aim to implement real-world entities in programs.

MAGINARYCLOUD

OOP Principles

Encapsulation	Abstraction	Inheritance	Polymorphism
When an object only exposes the selected information.	Hides complex details to reduce complexity.	Entities can inherit attributes from other entities.	Entities can have more than one form.

static keyword

- The **static keyword** is used in java mainly for memory management. We may apply static keyword with variables, methods, blocks and nested class. The static keyword belongs to the class than instance of the class.

- The static can be:
  1. variable (also known as class variable)
  2. method (also known as class method)
  3. block
  4. nested class

Thanks!

Do you have any questions?