

Q) variable in primary constructor can be called as properties or not, or there is only case variable defined in class body is called as properties

In Kotlin, variables defined in the **primary constructor** can indeed be **properties**, but only if you explicitly declare them with `var` or `val`. If you don't declare them with these keywords, they are treated as constructor parameters, not class properties.

Here's a detailed explanation of both scenarios:

1. Primary Constructor Variables as Properties

If you define a variable in the primary constructor with `var` or `val`, it **becomes a property** of the class. This means it is accessible throughout the class and can be used just like any other class property (with either getter/setter for `var` or a getter for `val`).

Example:

```
class Person(val name: String, var age: Int)
```

Here:

- `name` is a **read-only** property because it's declared with `val`.
- `age` is a **mutable** property because it's declared with `var`.

Both `name` and `age` are properties of the `Person` class, accessible throughout the class and via instances of the class:

```
val person = Person("John", 25)
```

```
println(person.name) // Accesses the property 'name'
```

```
person.age = 26 // Mutates the property 'age'
```

2. Primary Constructor Variables Not as Properties

If you do **not** use `var` or `val` in the primary constructor, the variables are just **constructor parameters**. They are not properties of the class, meaning they are only available within the constructor (or init block) and cannot be accessed later outside of those.

Example:

```
class Person(name: String, age: Int) {  
    // These are constructor parameters, not properties  
    init {  
        println("Person's name is $name and age is $age") // Accessible here  
    }  
}
```

In this case:

- `name` and `age` are **constructor parameters**, not class properties.
- You cannot access `name` or `age` outside the constructor or init block, for example:

```
val person = Person("John", 25)
```

```
// println(person.name) // Error: Unresolved reference 'name'
```

3. Properties Defined in the Class Body

Alternatively, properties can also be declared in the class body, outside of the constructor. These properties must be explicitly initialized or assigned default values.

Example:

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```
class Person {  
    var name: String = "Unknown" // Property in the class body  
    var age: Int = 0             // Property in the class body  
}
```

These properties are accessible and mutable throughout the class:

```
val person = Person()  
  
println(person.name) // Outputs "Unknown"  
  
person.age = 30      // Updates the age property
```

Summary:

- **Primary constructor parameters** declared with var or val are **class properties**.
- **Primary constructor parameters** without var or val are **not class properties**; they are just parameters.
- **Properties in the class body** are always properties, whether or not a constructor is defined.