16.4 Abstraction

🌟 **Abstraction in Java** is the process of hiding the implementation details and only showing the essential details or features to the user. It allows to focus on what an object does rather than how it does it. The unnecessary details are not displayed to the user.

🌟 **Key features of abstraction:**

- Abstraction hides the complex details and shows only essential features.
- Abstract classes may have methods without implementation and must be implemented by subclasses.
- By abstracting functionality, changes in the implementation do not affect the code that depends on the abstraction.

🌟 How to Achieve Abstraction in Java?

Java provides two ways to implement abstraction, which are listed below:

- ***Abstract Classes (Partial Abstraction)***
- ***Interface (100% Abstraction)***

Syntax -

- ***Abstract class***

```
public abstract class Animal{


}
```

- ***Interface***

```
public interface Animal{


}
```

⁉️ *What is abstract method?*

In **Java**, an **abstract method** is a method that is **declared without an implementation**. This means it only has the method signature and **no body**. Abstract methods can only be declared in **abstract classes** or **interfaces**.

- **No body**: Abstract methods don’t have a method body—they end with a semicolon.