



What is Inheritance?

✓ Definition:

Inheritance is an OOP concept where a class [child/subclass] **inherits properties and methods** from another class [parent/superclass]. It helps in **code reusability** and creating a relationship between classes.

✓ Key Benefits of Inheritance:

1. Reuse common code from the parent class.
2. Avoid duplication.
3. Build relationships like "is-a" [e.g., Dog is-an Animal].

✓ Example in JavaScript:

```
// Parent class
class Animal {
  constructor(name) {
    this.name = name;
  }

  speak() {
    console.log(`${this.name} makes a sound.`);
  }
}

// Child class inherits from Animal
class Dog extends Animal {
  bark() {
    console.log(`${this.name} barks.`);
  }
}

// Creating an object of Dog
const myDog = new Dog("Bruno");

myDog.speak(); // Inherited method → Output: Bruno makes a sound.
myDog.bark(); // Child's method → Output: Bruno barks.
```

✓ Explanation (Point-by-Point):

1. class Dog extends Animal means Dog inherits all features of Animal.
2. speak() is defined in the parent class Animal but is available to Dog.
3. bark() is specific to Dog, not present in Animal.
4. This shows that Dog **is a type of** Animal.

✓ Real-Life Analogy:

A **car** inherits properties from a general **vehicle** [like wheels, engine], but can also have specific features like a **sunroof**.