

An **interface** in programming defines a contract or blueprint for classes. It specifies a set of methods (or properties) that implementing classes must provide, without dictating how these methods are implemented. Interfaces are widely used in object-oriented programming to achieve **abstraction** and **polymorphism**.

Features of an Interface:

1. **No Implementation:** Only method declarations, no method bodies.
2. **Multiple Inheritance:** A class can implement multiple interfaces.
3. **Ensures Consistency:** Forces implementing classes to follow a defined structure.

Example of An Interface in Typescript:

// Define an Interface

```
interface Animal {  
    makeSound(): void; // Method signature  
    eat(): void;  
}
```

// Implement the Interface in a Class

```
class Dog implements Animal {  
    makeSound(): void {  
        console.log("Dog barks");  
    }  
  
    eat(): void {  
        console.log("Dog eats bones");  
    }  
}
```

// Another Class Implementing the Interface

```
class Cat implements Animal {  
    makeSound(): void {  
        console.log("Cat meows");  
    }  
  
    eat(): void {  
        console.log("Cat eats fish");  
    }  
}
```

// Using the Classes

```
const myDog: Animal = new Dog();  
const myCat: Animal = new Cat();
```

```
myDog.makeSound(); // Output: Dog barks  
myDog.eat();       // Output: Dog eats bones
```

```
myCat.makeSound(); // Output: Cat meows  
myCat.eat();       // Output: Cat eats fish
```