




# IEnumerable, ISaveable, IDontGetIt

Understanding C# Interfaces

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[github.com/jeremybytes/sdd-2024](https://github.com/jeremybytes/sdd-2024)



An interface contains definitions for a group of related functionalities that a non-abstract class or struct must implement.

<https://learn.microsoft.com/en-us/dotnet/csharp/fundamentals/types/interfaces>



An interface describes  
a set of capabilities  
on an object.

“I have these functions.”

# Interface

Defines a contract

Implement any number  
of interfaces

Limited implementation code

No automatic properties

Properties  
Methods  
Events  
Indexers

# Abstract Class

Shared Implementation

Inherit from a single base class

Unconstrained implementation  
code

Can have automatic  
properties

Properties	Fields
Methods	Constructors
Events	Destructors
Indexers	



## Recommendation

Program to an abstraction  
rather than a concrete type.



## Recommendation

Program to an **interface**  
rather than a **concrete class**.

# Various Data Sources

Microsoft SQL Server

MongoDB

CSV

WebAPI

Oracle

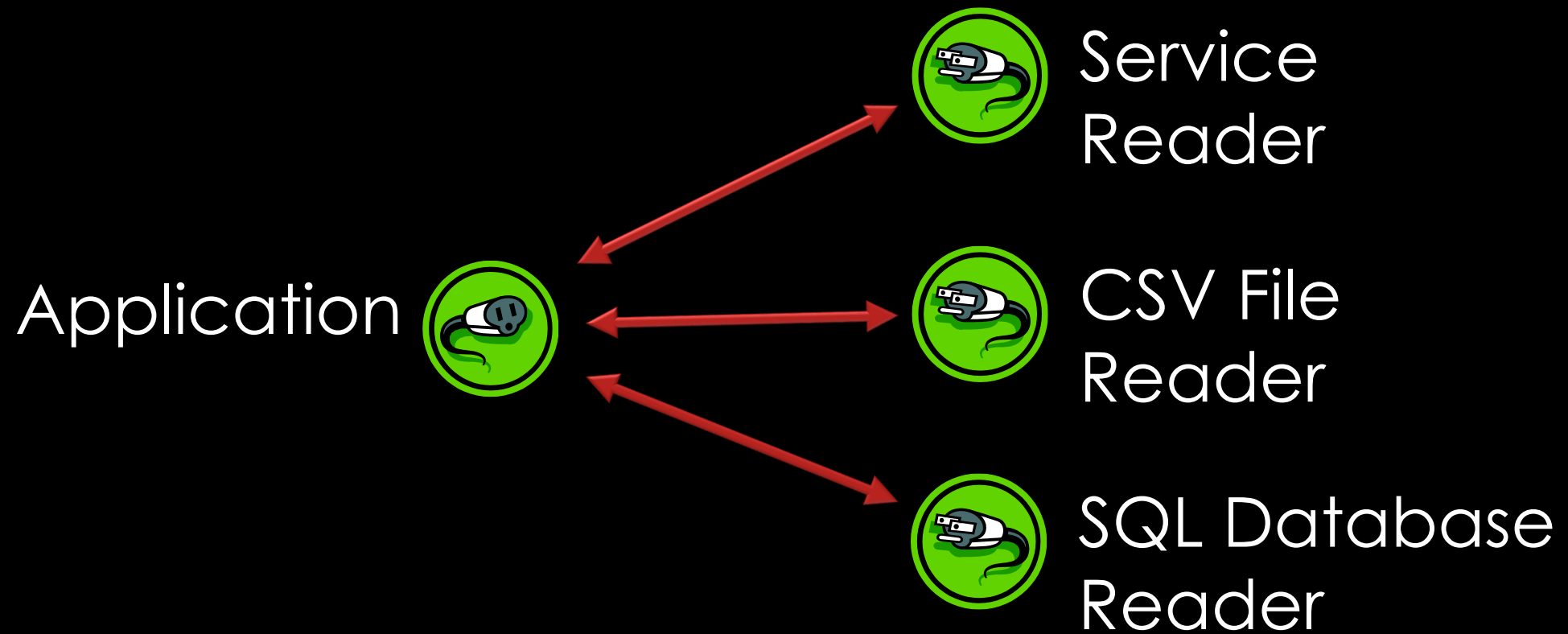
Amazon RDS

JSON

Azure Cosmos DB

Hadoop

# Pluggable Data Readers





# Data Reader Interface

```
public interface IPersonReader
{
    Task<IReadOnlyCollection<Person>> GetPeople();
    Task<Person?> GetPerson(int id);
}
```

# Interfaces and Flexible Code

**Resilience in the  
face of change**

**Insulation from  
implementation  
details**

# Dynamic Factory

- Check configuration
- Load the assembly
- Look for the type
- Create the data reader
- Return the data reader



## Other Benefits

Interfaces help us isolate code  
for easier **unit testing**.



## Other Benefits

Interfaces can make  
dependency injection easier.



# Summary

- An interface describes a set of capabilities of an object.
- Program to an abstraction (interface) rather than a concrete type (class).
- Resilience in the face of change.
- Insulation from implementation details.
- Easier unit testing.
- Easier dependency injection.

An abstract graphic at the top of the slide featuring a series of overlapping, wavy bands in shades of orange, red, yellow, and green, set against a black background.

Thank You!

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