My Project

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# **Namespace Index**

# 1.1 Namespace List

Here is a list of all documented namespaces with brief descriptions:

WsCrud	
WsCrud.Controllers	
WsCrud.Interfaces	
WsCrud.Models	
WsCrud.Repositories	
WsCrud Services	

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# **Hierarchical Index**

# 2.1 Class Hierarchy

This inheritance list is sorted roughly, but not completely, alphabetically:

authenticationHandler	
WsCrud.Services.BasicAuthenticationHandler	9
ControllerBase	
WsCrud.Controllers.PersonsController	19
VsCrud.Interfaces.IFileStorage	11
WsCrud.Services.FileSystemStorage	9
$VsCrud.Interfaces.IRepository < T > \dots \dots \dots \dots \dots \dots \dots \dots \dots \dots$	15
VsCrud.Interfaces.IRepository < Person >	15
WsCrud.Repositories.InMemoryPersonRepository	13
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# **Class Index**

## 3.1 Class List

Here are the classes, structs, unions and interfaces with brief descriptions:

WsCrud.Services.BasicAuthenticationHandler	
Handles HTTP Basic authentication using credentials from environment variables	9
WsCrud.Services.FileSystemStorage	
Provides file I/O operations using the actual file system	9
WsCrud.Interfaces.IFileStorage	
Defines low-level file operations used by repositories and services	11
WsCrud.Repositories.InMemoryPersonRepository	
An in-memory repository storing Person objects in a thread-safe list. Suitable for testing and	
development purposes	13
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JSON-backed implementation of the IRepository <person> interface. Person records are stored</person>	
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WsCrud.Models.Person	
Represents a person with an Id, Name, and Age	19
WsCrud.Controllers.PersonsController	
Handles all CRUD operations for Person resources. Requires Basic Authentication for access .	19
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# **Namespace Documentation**

## 4.1 WsCrud Namespace Reference

## 4.2 WsCrud.Controllers Namespace Reference

#### Classes

· class PersonsController

Handles all CRUD operations for Person resources. Requires Basic Authentication for access.

## 4.3 WsCrud.Interfaces Namespace Reference

## Classes

• interface IFileStorage

Defines low-level file operations used by repositories and services.

interface IRepository

Generic repository interface for basic CRUD operations.

## 4.4 WsCrud.Models Namespace Reference

#### Classes

· class Person

Represents a person with an Id, Name, and Age.

## 4.5 WsCrud.Repositories Namespace Reference

### Classes

· class InMemoryPersonRepository

An in-memory repository storing Person objects in a thread-safe list. Suitable for testing and development purposes.

class JsonPersonRepository

JSON-backed implementation of the IRepository< Person> interface. Person records are stored in a single file and serialized/deserialized as JSON.

# 4.6 WsCrud.Services Namespace Reference

## Classes

• class BasicAuthenticationHandler

Handles HTTP Basic authentication using credentials from environment variables.

• class FileSystemStorage

Provides file I/O operations using the actual file system.

# **Class Documentation**

## 5.1 WsCrud.Services.BasicAuthenticationHandler Class Reference

Handles HTTP Basic authentication using credentials from environment variables.

Inheritance diagram for WsCrud.Services.BasicAuthenticationHandler:

Collaboration diagram for WsCrud.Services.BasicAuthenticationHandler:

#### **Public Member Functions**

• BasicAuthenticationHandler (IOptionsMonitor< AuthenticationSchemeOptions > options, ILoggerFactory logger, System.Text.Encodings.Web.UrlEncoder encoder, ISystemClock clock)

Constructs the BasicAuthenticationHandler with required dependencies.

### **Protected Member Functions**

override Task< AuthenticateResult > HandleAuthenticateAsync ()

Handles authentication for each incoming request. Validates the "Authorization" header against username and password loaded from environment variables.

## 5.1.1 Detailed Description

Handles HTTP Basic authentication using credentials from environment variables.

The documentation for this class was generated from the following file:

• WsCrud/Services/BasicAuthenticationHandler.cs

## 5.2 WsCrud.Services.FileSystemStorage Class Reference

Provides file I/O operations using the actual file system.

Inheritance diagram for WsCrud.Services.FileSystemStorage:

Collaboration diagram for WsCrud.Services.FileSystemStorage:

## **Public Member Functions**

bool Exists (string path)

Checks if a file exists at the specified path.

#### Parameters



Returns

True if the file exists; otherwise, false.

• string Read (string path)

Reads all text from the specified file path.

#### **Parameters**



Returns

Contents of the file as string.

• void Write (string path, string content)

Writes text content to the specified file path.

#### **Parameters**

path	Destination file path.
content	Text content to write.

## 5.2.1 Detailed Description

Provides file I/O operations using the actual file system.

### 5.2.2 Member Function Documentation

## 5.2.2.1 Exists()

```
bool WsCrud.Services.FileSystemStorage.Exists ( {\tt string}\ path\ )
```

Checks if a file exists at the specified path.

### **Parameters**

```
path File path.
```

## Returns

True if the file exists; otherwise, false.

Implements WsCrud.Interfaces.IFileStorage.

## 5.2.2.2 Read()

```
string WsCrud.Services.FileSystemStorage.Read ( {\tt string}\ path\ )
```

Reads all text from the specified file path.

#### **Parameters**

path	File path.
------	------------

#### Returns

Contents of the file as string.

Implements WsCrud.Interfaces.IFileStorage.

## 5.2.2.3 Write()

Writes text content to the specified file path.

#### **Parameters**

path	Destination file path.
content	Text content to write.

Implements WsCrud.Interfaces.IFileStorage.

The documentation for this class was generated from the following file:

WsCrud/Services/FileSystemStorage.cs

## 5.3 WsCrud.Interfaces.IFileStorage Interface Reference

Defines low-level file operations used by repositories and services.

 $Inheritance\ diagram\ for\ WsCrud. Interfaces. IF ile Storage:$ 

### **Public Member Functions**

• bool Exists (string path)

Checks if a file exists at the specified path.

• string Read (string path)

Reads all text from the specified file path.

void Write (string path, string content)

Writes text content to the specified file path.

## 5.3.1 Detailed Description

Defines low-level file operations used by repositories and services.

## 5.3.2 Member Function Documentation

## 5.3.2.1 Exists()

```
bool WsCrud.Interfaces.IFileStorage.Exists ( {\tt string}\ path\ )
```

Checks if a file exists at the specified path.

#### **Parameters**

```
path File path.
```

#### Returns

True if the file exists; otherwise, false.

Implemented in WsCrud.Services.FileSystemStorage.

## 5.3.2.2 Read()

```
string WsCrud.Interfaces.IFileStorage.Read ( {\tt string} \ path \ )
```

Reads all text from the specified file path.

#### **Parameters**

```
path File path.
```

## Returns

Contents of the file as string.

Implemented in WsCrud.Services.FileSystemStorage.

#### 5.3.2.3 Write()

```
void WsCrud.Interfaces.IFileStorage.Write ( string\ path, string\ content\ )
```

Writes text content to the specified file path.

#### **Parameters**

path	Destination file path.
content	Text content to write.

Implemented in WsCrud.Services.FileSystemStorage.

The documentation for this interface was generated from the following file:

· WsCrud/Interfaces/IFileStorage.cs

## 5.4 WsCrud.Repositories.InMemoryPersonRepository Class Reference

An in-memory repository storing Person objects in a thread-safe list. Suitable for testing and development purposes.

Inheritance diagram for WsCrud.Repositories.InMemoryPersonRepository:

Collaboration diagram for WsCrud.Repositories.InMemoryPersonRepository:

#### **Public Member Functions**

Task< List< Person > > GetAllAsync ()

Retrieves all people from the repository.

• Task< Person?> GetByIdAsync (int id)

Retrieves a person by their ID.

Task AddAsync (Person person)

Adds a new person to the repository and assigns a unique ID.

Task UpdateAsync (Person person)

Updates an existing person in the repository.

• Task DeleteAsync (int id)

Deletes a person from the repository by ID.

## Public Member Functions inherited from WsCrud.Interfaces.IRepository < Person >

Task< List< T >> GetAllAsync ()

Gets all entities.

Task< T?> GetByldAsync (int id)

Gets a specific entity by ID.

Task AddAsync (T entity)

Adds a new entity.

Task UpdateAsync (T entity)

Updates an existing entity.

• Task **DeleteAsync** (int id)

Deletes an entity by ID.

## 5.4.1 Detailed Description

An in-memory repository storing Person objects in a thread-safe list. Suitable for testing and development purposes.

## 5.4.2 Member Function Documentation

## 5.4.2.1 AddAsync()

Adds a new person to the repository and assigns a unique ID.

#### **Parameters**

pers	on	The person object to add. The ID will be overwritten.
------	----	---

#### Returns

A completed task.

#### 5.4.2.2 DeleteAsync()

```
Task WsCrud.Repositories.InMemoryPersonRepository.DeleteAsync (  \qquad \qquad \text{int } id \text{ ) } \quad \text{[inline]}
```

Deletes a person from the repository by ID.

## **Parameters**

id The unique identifier of the person to remove.

## Returns

A completed task.

### 5.4.2.3 GetAllAsync()

```
{\tt Task < List < {\tt Person} > } > {\tt WsCrud.Repositories.InMemoryPersonRepository.GetAllAsync () } \\ [inline]
```

Retrieves all people from the repository.

#### Returns

A task that returns a new list of all Person objects.

### 5.4.2.4 GetByldAsync()

Retrieves a person by their ID.

#### **Parameters**

```
id The unique identifier of the person.
```

#### Returns

A task that returns the matching Person, or null if not found.

## 5.4.2.5 UpdateAsync()

Updates an existing person in the repository.

#### **Parameters**

	person	The updated person.	The person is matched by ID.	
--	--------	---------------------	------------------------------	--

### Returns

A completed task.

The documentation for this class was generated from the following file:

• WsCrud/Repositories/InMemoryPersonRepository.cs

## 5.5 WsCrud.Interfaces.IRepository< T > Interface Template Reference

Generic repository interface for basic CRUD operations.

#### **Public Member Functions**

- Task< List< T >> GetAllAsync ()
  - Gets all entities.
- Task< T?> GetByldAsync (int id)

Gets a specific entity by ID.

Task AddAsync (T entity)

Adds a new entity.

• Task UpdateAsync (T entity)

Updates an existing entity.

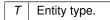
• Task **DeleteAsync** (int id)

Deletes an entity by ID.

## 5.5.1 Detailed Description

Generic repository interface for basic CRUD operations.

**Template Parameters** 



The documentation for this interface was generated from the following file:

· WsCrud/Interfaces/IRepository.cs

## 5.6 WsCrud.Repositories.JsonPersonRepository Class Reference

JSON-backed implementation of the IRepository<Person> interface. Person records are stored in a single file and serialized/deserialized as JSON.

Inheritance diagram for WsCrud.Repositories.JsonPersonRepository:

Collaboration diagram for WsCrud.Repositories.JsonPersonRepository:

#### **Public Member Functions**

JsonPersonRepository (string filePath, IFileStorage storage)

Initializes a new instance of the JsonPersonRepository class. Loads existing data from the JSON file if it exists.

Task< List< Person > > GetAllAsync ()

Retrieves all persons from memory.

Task< Person?> GetByIdAsync (int id)

Retrieves a person with the specified ID.

Task AddAsync (Person person)

Adds a new person to the list, assigning them a unique ID. Also persists the updated list to disk.

• Task UpdateAsync (Person person)

Updates an existing person by ID. Overwrites the stored object.

• Task DeleteAsync (int id)

Deletes all persons with the specified ID and saves the result.

## Public Member Functions inherited from WsCrud.Interfaces.IRepository < Person >

• Task< List< T > SetAllAsync ()

Gets all entities.

Task< T?> GetByldAsync (int id)

Gets a specific entity by ID.

Task AddAsync (T entity)

Adds a new entity.

Task UpdateAsync (T entity)

Updates an existing entity.

• Task **DeleteAsync** (int id)

Deletes an entity by ID.

## 5.6.1 Detailed Description

JSON-backed implementation of the IRepository<Person> interface. Person records are stored in a single file and serialized/deserialized as JSON.

#### 5.6.2 Constructor & Destructor Documentation

## 5.6.2.1 JsonPersonRepository()

```
\label{thm:wscrud.Repositories.JsonPersonRepository.JsonPersonRepository ( $$ string filePath, $$ IFileStorage storage ) [inline]
```

Initializes a new instance of the JsonPersonRepository class. Loads existing data from the JSON file if it exists.

#### **Parameters**

filePath	The file path to the JSON storage.
storage	An injected file I/O abstraction.

### 5.6.3 Member Function Documentation

## 5.6.3.1 AddAsync()

Adds a new person to the list, assigning them a unique ID. Also persists the updated list to disk.

#### **Parameters**

person	The new person to add.
--------	------------------------

#### Returns

A completed task.

### 5.6.3.2 DeleteAsync()

Deletes all persons with the specified ID and saves the result.

#### **Parameters**

id The ID of the person(s) to delete.
---------------------------------------

#### Returns

A completed task.

## 5.6.3.3 GetAllAsync()

```
{\tt Task < List < Person >> WsCrud.Repositories.JsonPersonRepository.GetAllAsync () [inline]}
```

Retrieves all persons from memory.

#### Returns

A task that returns a new copy of the person list.

## 5.6.3.4 GetByldAsync()

```
\label{eq:conformal} {\tt Task} < {\tt Person?} > {\tt WsCrud.Repositories.JsonPersonRepository.GetByIdAsync (} \\ & {\tt int} \ id \ ) \quad [{\tt inline}]
```

Retrieves a person with the specified ID.

#### **Parameters**

```
id The unique ID of the person.
```

## Returns

A task that returns the matching person if found; otherwise, null.

## 5.6.3.5 UpdateAsync()

Updates an existing person by ID. Overwrites the stored object.

### **Parameters**

person	The updated person object.

#### Returns

A completed task.

The documentation for this class was generated from the following file:

• WsCrud/Repositories/JsonPersonRepository.cs

## 5.7 WsCrud.Models.Person Class Reference

Represents a person with an Id, Name, and Age.

## **Properties**

```
    int Id [get, set]
        Unique identifier (auto-assigned).
    string Name = string.Empty [get, set]
        Full name of the person.
    int Age [get, set]
        Age in years.
```

## 5.7.1 Detailed Description

Represents a person with an Id, Name, and Age.

The documentation for this class was generated from the following file:

• WsCrud/Models/Person.cs

## 5.8 WsCrud.Controllers.PersonsController Class Reference

Handles all CRUD operations for Person resources. Requires Basic Authentication for access.

Inheritance diagram for WsCrud.Controllers.PersonsController:

## 5.9 Program Class Reference

The documentation for this class was generated from the following file:

• WsCrud/Program.cs

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