Namespace Heatington.AssetManager

Classes

AssetManager

HeatingGrid

ProductionUnit

Enums

ProductionUnitsEnum

Class AssetManager

Namespace: Heatington.AssetManager

Assembly: Heatington.dll

```
public class AssetManager
```

Inheritance

object ← AssetManager

Inherited Members

object.Equals(object) , object.Equals(object, object) , object.GetHashCode() , object.GetType() , object.MemberwiseClone() , object.ReferenceEquals(object, object)

Examples

```
AssetManager AM = new AssetManager();
await AM.LoadAssets();
```

Constructors

AssetManager()

```
public AssetManager()
```

Properties

HeatingGridInformation

```
public HeatingGrid? HeatingGridInformation { get; }
```

Property Value

HeatingGrid

ProductionUnits

```
public Dictionary<ProductionUnitsEnum, ProductionUnit>? ProductionUnits { get; }
```

Property Value

Dictionary<ProductionUnitsEnum, ProductionUnit>

Methods

LoadAssets()

```
public Task LoadAssets()
```

Returns

Task

ReadHeatingUnits()

```
public Dictionary<ProductionUnitsEnum, ProductionUnit> ReadHeatingUnits()
```

Returns

Dictionary<ProductionUnitsEnum, ProductionUnit>

ToString()

Returns a string that represents the current object.

```
public override string ToString()
```

Returns

string

A string that represents the current object.

WriteHeatingUnit(ProductionUnit)

```
public void WriteHeatingUnit(ProductionUnit editedHeatingUnit)
```

Parameters

`editedHeatingUnit` ProductionUnit

WriteHeatingUnit(ProductionUnitsEnum, ProductionUnit)

```
public void WriteHeatingUnit(ProductionUnitsEnum productionUnitKey,
ProductionUnit heatingUnitNewbBody)
```

Parameters

`productionUnitKey` ProductionUnitsEnum

`heatingUnitNewbBody` ProductionUnit

WriteHeatingUnit(Guid, ProductionUnit)

```
public void WriteHeatingUnit(Guid unitId, ProductionUnit heatingUnitNewbBody)
```

Parameters

`unitId` Guid

`heatingUnitNewbBody` ProductionUnit

Class HeatingGrid

Namespace: Heatington.AssetManager

Assembly: Heatington.dll

```
public class HeatingGrid
```

Inheritance

object ← HeatingGrid

Inherited Members

object.Equals(object) , object.Equals(object, object) , object.GetHashCode() , object.GetType() , object.MemberwiseClone() , object.ReferenceEquals(object, object) , object.ToString()

Constructors

HeatingGrid(string, string)

```
public HeatingGrid(string picturePath, string name)
```

Parameters

`picturePath` string

`name` string

Properties

Id

```
public Guid Id { get; set; }
```

Property Value

Guid

Name

```
public string Name { get; set; }
```

Property Value

string

PicturePath

```
public string PicturePath { get; set; }
```

Property Value

string

Class ProductionUnit

Namespace: Heatington.AssetManager

Assembly: Heatington.dll

```
public class ProductionUnit : ICloneable
```

Inheritance

object ← ProductionUnit

Implements

ICloneable

Inherited Members

object.Equals(object) , object.Equals(object, object) , object.GetHashCode() , object.GetType() , object.MemberwiseClone() , object.ReferenceEquals(object, object)

Constructors

ProductionUnit(string, string, double, double, double, double, double)

```
public ProductionUnit(string name, string picturePath, double maxHeat, double
productionCost, double maxElectricity, double gasConsumption, double co2Emission)
```

Parameters

`name` string

`picturePath` string

`maxHeat` double

`productionCost` double

`maxElectricity` double

`gasConsumption` double

co2Emission double

Properties

Co2Emission

```
public double Co2Emission { get; }
```

Property Value

double

GasConsumption

```
public double GasConsumption { get; }
```

Property Value

double

Id

```
public Guid Id { get; }
```

Property Value

Guid

MaxElectricity

```
public double MaxElectricity { get; }
```

Property Value

double

MaxHeat

```
public double MaxHeat { get; }
```

Property Value

double

Name

```
public string Name { get; set; }
```

Property Value

string

OperationPoint

```
public double OperationPoint { get; set; }
```

Property Value

double

PicturePath

```
public string PicturePath { get; }
```

Property Value

string

ProductionCost

```
public double ProductionCost { get; }
```

Property Value

double

Methods

Clone()

Creates a new object that is a copy of the current instance.

```
public object Clone()
```

Returns

object

A new object that is a copy of this instance.

ToString()

Returns a string that represents the current object.

```
public override string ToString()
```

Returns

string

A string that represents the current object.

Enum ProductionUnitsEnum

Namespace: Heatington.AssetManager

Assembly: Heatington.dll

```
public enum ProductionUnitsEnum
```

Fields

`ElectricBoiler = 3`

`GasBoiler = 0`

`GasMotor = 2`

`OilBoiler = 1`

Namespace Heatington.Controllers

Classes

CsvController

FileController

Documentation in Documents/Heatington/Controllers/FileController.md

JsonController

ProductionUnitJsonConverter

Class CsvController

Namespace: Heatington.Controllers

Assembly: Heatington.dll

```
public class CsvController : IDataSource
```

Inheritance

object ← CsvController

Implements

IDataSource

Inherited Members

object.Equals(object) , object.Equals(object, object) , object.GetHashCode() , object.GetType() , object.MemberwiseClone() , object.ReferenceEquals(object, object) , object.ToString()

Methods

GetDataAsync(string)

```
public Task<List<DataPoint>?> GetDataAsync(string filePath)
```

Parameters

`filePath` string

Returns

Task<List<DataPoint>>

SaveData(List<DataPoint>, string)

```
public void SaveData(List<DataPoint> data, string filePath)
```

Parameters

`data` List<DataPoint>

`filePath` string

Class FileController

Namespace: Heatington.Controllers

Assembly: Heatington.dll

Documentation in Documents/Heatington/Controllers/FileController.md

```
public class FileController : IReadWriteController
```

Inheritance

object ← FileController

Implements

IReadWriteController

Inherited Members

object.Equals(object) , object.Equals(object, object) , object.GetHashCode() , object.GetType() , object.MemberwiseClone() , object.ReferenceEquals(object, object)

Constructors

FileController(string)

Documentation in Documents/Heatington/Controllers/FileController.md

```
public FileController(string pathToFile)
```

Parameters

`pathToFile` string

Methods

ReadData<T>()

```
public Task<T> ReadData<T>()
```

Returns

Task<T>

Type Parameters

T

ToString()

Returns a string that represents the current object.

```
public override string ToString()
```

Returns

string

A string that represents the current object.

WriteData<T>(T)

```
public Task<OperationStatus> WriteData<T>(T content)
```

Parameters

content T

Returns

Task<OperationStatus>

Type Parameters

T

Class JsonController

Namespace: Heatington.Controllers

Assembly: Heatington.dll

```
public class JsonController : ISerializeDeserialize, IReadWriteController
```

Inheritance

object ← JsonController

Implements

ISerializeDeserialize, IReadWriteController

Inherited Members

object.Equals(object) , object.Equals(object, object) , object.GetHashCode() , object.GetType() , object.MemberwiseClone() , object.ReferenceEquals(object, object)

Constructors

JsonController(string)

```
public JsonController(string filePath)
```

Parameters

`filePath` string

Methods

Deserialize<T>(string)

```
public static T Deserialize<T>(string file)
```

Parameters

`file` string

Returns

T

Type Parameters

T

ReadData<T>()

```
public Task<T> ReadData<T>()
```

Returns

Task<T>

Type Parameters

T

Serialize<T>(T)

```
public static string Serialize<T>(T obj)
```

Parameters

obj T

Returns

string

Type Parameters

T

ToString()

Returns a string that represents the current object.

```
public override string ToString()
```

Returns

string

A string that represents the current object.

WriteData<T>(T)

```
public Task<OperationStatus> WriteData<T>(T content)
```

Parameters

`content` T

Returns

Task<OperationStatus>

Type Parameters

`T`

Class ProductionUnitJsonConverter

Namespace: Heatington.Controllers

Assembly: Heatington.dll

```
public class ProductionUnitJsonConverter : JsonConverter<ProductionUnit>
```

Inheritance

object ← JsonConverter ← JsonConverter<ProductionUnit> ← ProductionUnitJsonConverter

Inherited Members

JsonConverter<ProductionUnit>.CanConvert(Type) ,
JsonConverter<ProductionUnit>.ReadAsPropertyName(ref Utf8JsonReader, Type, JsonSerializerOptions) ,
JsonConverter<ProductionUnit>.WriteAsPropertyName(Utf8JsonWriter, ProductionUnit, JsonSerializerOptions) ,
JsonConverter<ProductionUnit>.HandleNull , JsonConverter<ProductionUnit>.Type ,
object.Equals(object) , object.Equals(object, object) , object.GetHashCode() ,
object.GetType() , object.MemberwiseClone() , object.ReferenceEquals(object, object) ,
object.ToString()

Methods

Read(ref Utf8JsonReader, Type, JsonSerializerOptions)

Reads and converts the JSON to type ProductionUnit.

```
public override ProductionUnit Read(ref Utf8JsonReader reader, Type typeToConvert,
JsonSerializerOptions options)
```

Parameters

`reader` Utf8JsonReader

The reader.

`typeToConvert` Type

The type to convert.

`options` JsonSerializerOptions

An object that specifies serialization options to use.

Returns

ProductionUnit

The converted value.

Write(Utf8JsonWriter, ProductionUnit, JsonSerializerOptions)

Writes a specified value as JSON.

```
public override void Write(Utf8JsonWriter writer, ProductionUnit productionUnit,
JsonSerializerOptions options)
```

Parameters

`writer` Utf8JsonWriter

The writer to write to.

`productionUnit` ProductionUnit

`options` JsonSerializerOptions

An object that specifies serialization options to use.

Namespace Heatington.Controllers.Enums

Enums

OperationStatus

Documentation in Documents/Heatington/Controllers/Enums/OperationStatus.md

Enum OperationStatus

Namespace: Heatington.Controllers.Enums

Assembly: Heatington.dll

Documentation in Documents/Heatington/Controllers/Enums/OperationStatus.md

```
public enum OperationStatus
```

Fields

FAILURE = 2

LOADING = 1

SUCCESS = 0

Namespace Heatington.Controllers.Interfaces

Interfaces

IReadWriteController

Documentation in Documents/Heatington/Controllers/Interfaces/IReadWriteController.md

ISerializeDeserialize

Interface IReadWriteController

Namespace: Heatington.Controllers.Interfaces

Assembly: Heatington.dll

Documentation in Documents/Heatington/Controllers/Interfaces/IReadWriteController.md

```
public interface IReadWriteController
```

Methods

ReadData<T>()

```
Task<T> ReadData<T>()
```

Returns

Task<T>

Type Parameters

T

ToString()

```
string? ToString()
```

Returns

string

WriteData<T>(T)

```
Task<OperationStatus> WriteData<T>(T content)
```

Parameters

`content` T

Returns

Task<OperationStatus>

Type Parameters

T

Interface ISerializeDeserialize

Namespace: Heatington.Controllers.Interfaces

Assembly: Heatington.dll

```
public interface ISerializeDeserialize
```

Methods

Deserialize<T>(string)

```
public static abstract T? Deserialize<T>(string file)
```

Parameters

`file` string

Returns

T

Type Parameters

T

Serialize<T>(T)

```
public static abstract string? Serialize<T>(T obj)
```

Parameters

`obj` T

Returns

string

Type Parameters

T

Namespace Heatington.Controllers.Serializers

Classes

CsvConstructorAttribute

Class CsvConstructorAttribute

Namespace: Heatington.Controllers.Serializers

Assembly: Heatington.dll

```
[AttributeUsage(AttributeTargets.Constructor, AllowMultiple = false)]
public sealed class CsvConstructorAttribute : Attribute
```

Inheritance

object ← Attribute ← CsvConstructorAttribute

Inherited Members

Attribute.Equals(object) , Attribute.GetCustomAttribute(Assembly, Type) ,
Attribute.GetCustomAttribute(Assembly, Type, bool) ,
Attribute.GetCustomAttribute(MemberInfo, Type) ,
Attribute.GetCustomAttribute(MemberInfo, Type, bool) ,
Attribute.GetCustomAttribute(Module, Type) ,
Attribute.GetCustomAttribute(Module, Type, bool) ,
Attribute.GetCustomAttribute(ParameterInfo, Type) ,
Attribute.GetCustomAttribute(ParameterInfo, Type, bool) ,
Attribute.GetCustomAttributes(Assembly) , Attribute.GetCustomAttributes(Assembly, bool) ,
Attribute.GetCustomAttributes(Assembly, Type) ,
Attribute.GetCustomAttributes(Assembly, Type, bool) ,
Attribute.GetCustomAttributes(MemberInfo) ,
Attribute.GetCustomAttributes(MemberInfo, bool) ,
Attribute.GetCustomAttributes(MemberInfo, Type) ,
Attribute.GetCustomAttributes(MemberInfo, Type, bool) ,
Attribute.GetCustomAttributes(Module) , Attribute.GetCustomAttributes(Module, bool) ,
Attribute.GetCustomAttributes(Module, Type) ,
Attribute.GetCustomAttributes(Module, Type, bool) ,
Attribute.GetCustomAttributes(ParameterInfo) ,
Attribute.GetCustomAttributes(ParameterInfo, bool) ,
Attribute.GetCustomAttributes(ParameterInfo, Type) ,
Attribute.GetCustomAttributes(ParameterInfo, Type, bool) , Attribute.GetHashCode() ,
Attribute.IsDefaultAttribute() , Attribute.IsDefined(Assembly, Type) ,
Attribute.IsDefined(Assembly, Type, bool) , Attribute.IsDefined(MemberInfo, Type) ,
Attribute.IsDefined(MemberInfo, Type, bool) , Attribute.IsDefined(Module, Type) ,
Attribute.IsDefined(Module, Type, bool) , Attribute.IsDefined(ParameterInfo, Type) ,
Attribute.IsDefined(ParameterInfo, Type, bool) , Attribute.Match(object) , Attribute.TypeId ,

object.Equals(object, object) , object.GetType() , object.ReferenceEquals(object, object) , object.ToString()

Namespace Heatington.Data

Interfaces

IDataSource

Interface IDataSource

Namespace: Heatington.Data

Assembly: Heatington.dll

```
public interface IDataSource
```

Methods

GetDataAsync(string)

```
Task<List<DataPoint>?> GetDataAsync(string filePath)
```

Parameters

`filePath` string

Returns

Task<List<DataPoint>>

SaveData(List<DataPoint>, string)

```
void SaveData(List<DataPoint> data, string filePath)
```

Parameters

`data` List<DataPoint>

`filePath` string

Namespace Heatington.Helpers

Classes

Utilities

Class Utilities

Namespace: Heatington.Helpers

Assembly: Heatington.dll

```
public static class Utilities
```

Inheritance

object ← Utilities

Inherited Members

object.Equals(object) , object.Equals(object, object) , object.GetHashCode() , object.GetType() , object.MemberwiseClone() , object.ReferenceEquals(object, object)

Methods

ConvertObject<T>(object?)

```
public static T ConvertObject<T>(object? obj)
```

Parameters

`obj` object

Returns

T

Type Parameters

`T`

DisplayException(string)

```
public static void DisplayException(string message)
```

Parameters

`message` string

GeneratePathToFileInAssetsDirectory(string)

```
public static string GeneratePathToFileInAssetsDirectory(string fileName)
```

Parameters

`fileName` string

Returns

string

GetAbsolutePathToAssetsDirectory()

```
public static string GetAbsolutePathToAssetsDirectory()
```

Returns

string

ToString()

```
public static string ToString()
```

Returns

string

Namespace Heatington.Models

Classes

DataPoint

ResultHolder

Class DataPoint

Namespace: Heatington.Models

Assembly: Heatington.dll

```
public class DataPoint
```

Inheritance

object ← DataPoint

Inherited Members

object.Equals(object) , object.Equals(object, object) , object.GetHashCode() , object.GetType() , object.MemberwiseClone() , object.ReferenceEquals(object, object) , object.ToString()

Constructors

DataPoint(string, string, string, string)

```
public DataPoint(string startTime, string endTime, string heatDemand,
string electricityPrice)
```

Parameters

`startTime` string

`endTime` string

`heatDemand` string

`electricityPrice` string

Properties

ElectricityPrice

```
public double ElectricityPrice { get; }
```

Property Value

double

EndTime

```
public DateTime EndTime { get; }
```

Property Value

DateTime

HeatDemand

```
public double HeatDemand { get; }
```

Property Value

double

StartTime

```
public DateTime StartTime { get; }
```

Property Value

DateTime

Class ResultHolder

Namespace: Heatington.Models

Assembly: Heatington.dll

```
public class ResultHolder
```

Inheritance

object ← ResultHolder

Inherited Members

object.Equals(object) , object.Equals(object, object) , object.GetHashCode() , object.GetType() , object.MemberwiseClone() , object.ReferenceEquals(object, object)

Constructors

ResultHolder(DateTime, DateTime, double, double, double, List<ProductionUnit>)

```
public ResultHolder(DateTime startTime, DateTime endTime, double heatDemand, double
electricityPrice, double netProductionCost, List<ProductionUnit> boilers)
```

Parameters

`startTime` DateTime

`endTime` DateTime

`heatDemand` double

`electricityPrice` double

`netProductionCost` double

`boilers` List<ProductionUnit>

Properties

Boilers

```
public List<ProductionUnit> Boilers { get; set; }
```

Property Value

List<ProductionUnit>

ElectricityPrice

```
public double ElectricityPrice { get; }
```

Property Value

double

EndTime

```
public DateTime EndTime { get; }
```

Property Value

DateTime

HeatDemand

```
public double HeatDemand { get; }
```

Property Value

double

NetProductionCost

```
public double NetProductionCost { get; set; }
```

Property Value

double

StartTime

```
public DateTime StartTime { get; }
```

Property Value

DateTime

Methods

ToString()

Returns a string that represents the current object.

```
public override string ToString()
```

Returns

string

A string that represents the current object.

Namespace Heatington.Optimizer

Classes

Opt

Class Opt

Namespace: Heatington.Optimizer

Assembly: Heatington.dll

```
public class Opt
```

Inheritance

object ← Opt

Inherited Members

object.Equals(object) , object.Equals(object, object) , object.GetHashCode() , object.GetType() , object.MemberwiseClone() , object.ReferenceEquals(object, object) , object.ToString()

Properties

Results

```
public List<ResultHolder>? Results { get; }
```

Property Value

List<ResultHolder>

Methods

CalculateNetProductionCost()

```
public void CalculateNetProductionCost()
```

LoadData()

```
public void LoadData()
```

LogDataPoints()

```
public void LogDataPoints()
```

LogProductionUnits()

```
public void LogProductionUnits()
```

LogResults()

```
public void LogResults()
```

OptimizeScenario1()

```
public void OptimizeScenario1()
```

Namespace Heatington.SourceDataManager

Classes

SourceDataManager

Class SourceDataManager

Namespace: Heatington.SourceDataManager

Assembly: Heatington.dll

```
public class SourceDataManager
```

Inheritance

object ← SourceDataManager

Inherited Members

object.Equals(object) , object.Equals(object, object) , object.GetHashCode() , object.GetType() , object.MemberwiseClone() , object.ReferenceEquals(object, object) , object.ToString()

Constructors

SourceDataManager(IDataSource, string)

```
public SourceDataManager(IDataSource dataSource, string filePath)
```

Parameters

`dataSource` IDataSource

`filePath` string

Properties

TimeSeriesData

```
public List<DataPoint>? TimeSeriesData { get; set; }
```

Property Value

List<DataPoint>

Methods

ConvertApiToCsv(List<DataPoint>)

```
public void ConvertApiToCsv(List<DataPoint> dataFromApi)
```

Parameters

`dataFromApi` List<DataPoint>

FetchTimeSeriesDataAsync()

```
public Task FetchTimeSeriesDataAsync()
```

Returns

Task

LogTimeSeriesData()

```
public void LogTimeSeriesData()
```

Namespace Heatington.Tests

Classes

UnitTest1

Class UnitTest1

Namespace: Heatington.Tests

Assembly: Heatington.Tests.dll

```
public class UnitTest1
```

Inheritance

object ← UnitTest1

Inherited Members

object.Equals(object) , object.Equals(object, object) , object.GetHashCode() , object.GetType() , object.MemberwiseClone() , object.ReferenceEquals(object, object) , object.ToString()

Methods

Test1()

```
[Fact]
public void Test1()
```

Namespace Heatington.Tests.Controllers

Classes

FileControllerTests

Documentation in Documents/Heatington.Tests/Controllers/FileController.Tests.md

Class FileControllerTests

Namespace: Heatington.Tests.Controllers

Assembly: Heatington.Tests.dll

Documentation in Documents/Heatington.Tests/Controllers/FileController.Tests.md

```
public class FileControllerTests : IDisposable
```

Inheritance

object ← FileControllerTests

Implements

IDisposable

Inherited Members

object.Equals(object) , object.Equals(object, object) , object.GetHashCode() , object.GetType() , object.MemberwiseClone() , object.ReferenceEquals(object, object) , object.ToString()

Constructors

FileControllerTests()

```
public FileControllerTests()
```

Methods

Dispose()

Performs application-defined tasks associated with freeing, releasing, or resetting unmanaged resources.

```
public void Dispose()
```

ReadFileFromPath_ReadFile_ReadsCorrectContent()

```
[Fact]
public void ReadFileFromPath_ReadFile_ReadsCorrectContent()
```

ReadFileFromPath_ReadNotExistingFile_FileNotFound(string)

```
[Theory]
[InlineData(new object[] { "aaa1" })]
[InlineData(new object[] { "test.cvs" })]
[InlineData(new object[] { "csv.ctest" })]
[InlineData(new object[] { "./adsfsaf.json" })]
[InlineData(new object[] { "../../asets" })]
[InlineData(new object[] { "c:\\78fe9lk" })]
[InlineData(new object[] { "/root12" })]
[InlineData(new object[] { "./Jsons" })]
[InlineData(new object[] { "./123" })]
public void ReadFileFromPath_ReadNotExistingFile_FileNotFound(string wrongFileName)
```

Parameters

`wrongFileName` string

WriteFileFromPath_WriteEmptyStringToFile_CreatesFile()

```
[Fact]
public void WriteFileFromPath_WriteEmptyStringToFile_CreatesFile()
```

WriteFileFromPath_WriteFile_WritesCorrectContent()

```
[Fact]
public void WriteFileFromPath_WriteFile_WritesCorrectContent()
```

WriteToFileFromPath_WriteToTheSameFileTwice_CreatesTwo()

```
[Fact]
public void WriteToFileFromPath_WriteToTheSameFileTwice_CreatesTwo()
```