

## hashset.cm

```
/*  
  
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    )  
  
*/  
  
// Copyright (c) 1994  
// Hewlett–Packard Company  
// Copyright (c) 1996  
// Silicon Graphics Computer Systems, Inc.  
// Copyright (c) 2009 Alexander Stepanov and Paul McJones  
  
using System;  
using System.Concepts;  
  
namespace System.Collections  
{  
    public class HashSet<T, H = Hasher<T>, C = EqualTo<T>> where T is  
        Semiregular and HashFunction<H, T> and C is Relation and C.Domain  
        is T  
    {  
        public typedef T ValueType;  
        public typedef T KeyType;  
        public typedef H HashFun;  
        public typedef C Compare;  
        public typedef HashSet<ValueType, HashFun, Compare> Self;  
        public typedef Hashtable<KeyType, ValueType, Identity<ValueType>,  
            HashFun, Compare> TableType;  
        public typedef TableType.ConstIterator ConstIterator;  
        public typedef TableType.Iterator Iterator;  
  
        public nothrow Iterator Begin()  
        {  
            return table.Begin();  
        }  
        public nothrow ConstIterator Begin() const  
        {  
            return table.CBegin();  
        }  
        public nothrow ConstIterator CBegin() const  
        {  
            return table.CBegin();  
        }  
        public nothrow Iterator End()
```

```

{
    return table.End();
}
public nothrow ConstIterator End() const
{
    return table.CEnd();
}
public nothrow ConstIterator CEnd() const
{
    return table.CEnd();
}
public nothrow inline int Count() const
{
    return table.Count();
}
public nothrow inline bool IsEmpty() const
{
    return table.IsEmpty();
}
public nothrow void Clear()
{
    table.Clear();
}
public nothrow Iterator Find(const KeyType& key)
{
    return table.Find(key);
}
public nothrow ConstIterator Find(const KeyType& key) const
{
    return table.CFind(key);
}
public nothrow ConstIterator CFind(const KeyType& key) const
{
    return table.CFind(key);
}
public Pair<Iterator, bool> Insert(const ValueType& value)
{
    return table.Insert(value);
}
public nothrow void Remove(const KeyType& key)
{
    table.Remove(key);
}
public nothrow void Remove(Iterator pos)
{
    table.Remove(pos);
}
private TableType table;
}

public nothrow bool operator==(T, H, C)(const HashSet<T, H, C>& left,
    const HashSet<T, H, C>& right) where T is Semiregular and
    HashFunction<H, T> and C is Relation and C.Domain is T

```

```
{  
    if (left.Count() != right.Count()) return false;  
    for (const T& value : left)  
    {  
        if (right.Find(value) == right.End()) return false;  
    }  
    return true;  
}
```