# Discreture

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# Contents


**1 Class Index** **1**

1.1 Class List . . . . . 1

**2 Class Documentation** **3**

2.1 dis::CatalanPaths Class Reference . . . . . 3

2.2 dis::combinations< IntType > Class Template Reference . . . . . 3

2.3 dis::combinations< IntType >::iterator Class Reference . . . . . 4

2.4 dis::multisets< IntType >::iterator Class Reference . . . . . 4

2.5 dis::CatalanPaths::iterator Class Reference . . . . . 4

2.6 dis::MotzkinPaths::iterator Class Reference . . . . . 5

2.7 dis::partitions< IntType >::iterator Class Reference . . . . . 5

2.8 dis::subsets::iterator Class Reference . . . . . 6

2.9 dis::LexicographicOrder< T > Class Template Reference . . . . . 6

2.10 dis::MotzkinPaths Class Reference . . . . . 6

2.11 dis::MultisetIterator< IntType > Class Template Reference . . . . . 7

2.12 dis::MultisetIteratorDecreasingOrder< IntType > Class Template Reference . . . . . 7

2.13 dis::multisets< IntType > Class Template Reference . . . . . 7

2.14 dis::partitions< IntType > Class Template Reference . . . . . 7

2.15 dis::SubsetIterator Class Reference . . . . . 8

2.16 dis::SubsetIteratorDecreasingOrder Class Reference . . . . . 8

2.17 dis::subsets Class Reference . . . . . 8

**Index** **10**

# Chapter 1

# Class Index

## 1.1 Class List

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


dis::CatalanPaths . . . 3
dis::combinations< IntType > . . . 3
dis::combinations< IntType >::iterator . . . 4
dis::multisets< IntType >::iterator . . . 4
dis::CatalanPaths::iterator . . . 4
dis::MotzkinPaths::iterator . . . 5
dis::partitions< IntType >::iterator . . . 5
dis::subsets::iterator . . . 6
dis::LexicographicOrder< T > . . . 6
dis::MotzkinPaths . . . 6
dis::MultisetIterator< IntType > . . . 7
dis::MultisetIteratorDecreasingOrder< IntType > . . . 7
dis::multisets< IntType > . . . 7
dis::partitions< IntType > . . . 7
dis::SubsetIterator . . . 8
dis::SubsetIteratorDecreasingOrder . . . 8
dis::subsets . . . 8

# Chapter 2

# Class Documentation

## 2.1 dis::CatalanPaths Class Reference

### Classes

- class iterator

### Public Member Functions

- **CatalanPaths** (nuint n)
- const iterator & **begin** () const
- const iterator & **end** () const

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

- CatalanPaths.hpp

## 2.2 dis::combinations< IntType > Class Template Reference

### Classes

- class iterator

### Public Member Functions

- **combinations** (IntType n, IntType r)
- size_t **size** () const
- const iterator & **begin** () const
- const iterator & **end** () const
- vector< IntType > **operator[]** (luint m) const

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

- Combinations.hpp

## 2.3 dis::combinations< IntType >::iterator Class Reference

### Public Member Functions

- **iterator** (IntType id)
- **iterator** (IntType n, IntType r)
- **iterator** (const iterator &it)
- **iterator** (iterator &&it)
- iterator & **operator++** ()
- const vector< IntType > & **operator*** ()
- const vector< IntType > & **operator*** () const
- size_t **ID** () const
- bool **operator==** (const iterator &it)
- bool **operator!=** (const iterator &it)
- bool **is_at_end** () const
- void **reset** (IntType n, IntType r)

### Friends

- class **combinations**

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

- Combinations.hpp

## 2.4 dis::multisets< IntType >::iterator Class Reference

### Public Member Functions

- **iterator** (const vector< IntType > &total)
- iterator & **operator++** ()
- const vector< IntType > & **operator*** () const
- vector< IntType > & **operator*** ()
- bool **operator==** (const iterator &it) const
- bool **operator!=** (const iterator &it) const

### Friends

- class **multisets**

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

- Multisets.hpp

## 2.5 dis::CatalanPaths::iterator Class Reference

### Public Member Functions

- **iterator** (nuint n)
- iterator & **operator++** ()
- bool **is_at_end** () const

- nuint **size** () const
- void **reset** (nuint n)
- const VI & **operator**∗ () const
- VI & **operator**∗ ()
- bool **operator==** (const iterator &it) const
- bool **operator!=** (const iterator &it) const

### Friends

- class **CatalanPaths**

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

- CatalanPaths.hpp

## 2.6 dis::MotzkinPaths::iterator Class Reference

### Public Member Functions

- **iterator** (int n)
- iterator & **operator++** ()
- const vector< int > & **operator**∗ () const
- vector< int > & **operator**∗ ()
- bool **operator==** (const iterator &it) const
- bool **operator!=** (const iterator &it) const

### Friends

- class **MotzkinPaths**

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

- Motzkin.hpp

## 2.7 dis::partitions< IntType >::iterator Class Reference

### Public Member Functions

- **iterator** (IntType n)
- iterator & **operator++** ()
- const vector< IntType > & **operator**∗ () const
- vector< IntType > & **operator**∗ ()
- bool **operator==** (const iterator &it) const
- bool **operator!=** (const iterator &it) const

### Friends

- class **partitions**

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

- Partitions.hpp

## 2.8 dis::subsets::iterator Class Reference

### Public Member Functions

- **iterator** (const subsets &parent)
- **iterator** (const iterator &it)
- **iterator** (iterator &&it)
- iterator & **operator++** ()
- const vector< int_fast8_t > & **operator*** ()
- bool **operator==** (const iterator &it)
- bool **operator!=** (const iterator &it)

### Friends

- class **subsets**

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

- Subsets.hpp

## 2.9 dis::LexicographicOrder< T > Class Template Reference

### Public Member Functions

- bool **operator()** (const vector< T > &lhs, const vector< T > &rhs) const

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

- Vectorhelpers.hpp

## 2.10 dis::MotzkinPaths Class Reference

### Classes

- class iterator

### Public Member Functions

- **MotzkinPaths** (int n)
- const iterator & **begin** () const
- const iterator & **end** () const

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

- Motzkin.hpp

## 2.11 dis::MultisetIterator< IntType > Class Template Reference

### Public Member Functions

- **MultisetIterator** (const vector< IntType > &set)
- vector< IntType > **First** ()
- bool **Next** (vector< IntType > &subset)

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

- Multisets.hpp

## 2.12 dis::MultisetIteratorDecreasingOrder< IntType > Class Template Reference

### Public Member Functions

- **MultisetIteratorDecreasingOrder** (const vector< IntType > &total)
- vector< IntType > **First** ()
- vector< IntType > **First** (nuint numelements)
- int **Next** (vector< IntType > &subset)

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

- Multisets.hpp

## 2.13 dis::multisets< IntType > Class Template Reference

### Classes

- class iterator

### Public Member Functions

- **multisets** (const vector< IntType > &set)
- **multisets** (IntType size, IntType n)
- const iterator & **begin** () const
- const iterator & **end** () const

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

- Multisets.hpp

## 2.14 dis::partitions< IntType > Class Template Reference

### Classes

- class iterator

### Public Member Functions

- **partitions** (IntType n)
- const iterator & **begin** () const
- const iterator & **end** () const

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

- Partitions.hpp

## 2.15 dis::SubsetIterator Class Reference

### Public Member Functions

- **SubsetIterator** (const vector< int_fast8_t > &set)
- **SubsetIterator** (nuint n)
- vector< int_fast8_t > **First** ()
- bool **Next** (vector< int_fast8_t > &subset)

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

- Subsets.hpp

## 2.16 dis::SubsetIteratorDecreasingOrder Class Reference

### Public Member Functions

- **SubsetIteratorDecreasingOrder** (nuint n)
- VB **First** ()
- int **Next** (VB &subset)

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

- Subsets.hpp

## 2.17 dis::subsets Class Reference

### Classes

- class iterator

### Public Member Functions

- **subsets** (nuint size)
- **subsets** (const vector< int_fast8_t > &total)
- size_t **size** () const
- const iterator & **begin** () const
- const iterator & **end** () const

### Friends

- class **iterator**

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

- Subsets.hpp

# Index

dis::CatalanPaths, 3
dis::CatalanPaths::iterator, 4
dis::LexicographicOrder< T >, 6
dis::MotzkinPaths, 6
dis::MotzkinPaths::iterator, 5
dis::MultisetIterator< IntType >, 7
dis::MultisetIteratorDecreasingOrder< IntType >, 7
dis::SubsetIterator, 8
dis::SubsetIteratorDecreasingOrder, 8
dis::combinations< IntType >, 3
dis::combinations< IntType >::iterator, 4
dis::multisets< IntType >, 7
dis::multisets< IntType >::iterator, 4
dis::partitions< IntType >, 7
dis::partitions< IntType >::iterator, 5
dis::subsets, 8
dis::subsets::iterator, 6