Inlab 6

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# **Class Index**

## 1.1 Class List

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# File Index

## 2.1 File List

Н	ere i	s a	list (	of a	all c	documented	files	with	brief	descriptions
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DSA.cpp												
It is about various Linked List Nodes		 					 		 			15

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## **Class Documentation**

### 3.1 BinarySearchTree Class Reference

Brief Description of BinarySearchTree. Brief Description continued.

#### **Public Types**

• enum order { PRE , IN , POST }

#### **Public Member Functions**

- BinarySearchTree ()
- void insert (II val)
- void traverse (BSTNode \*T, order tt)
- II height (BSTNode \*T)

#### **Public Attributes**

BSTNode \* root

#### 3.1.1 Detailed Description

Brief Description of BinarySearchTree. Brief Description continued.

Detailed description starts here.

#### 3.1.2 Constructor & Destructor Documentation

#### 3.1.2.1 BinarySearchTree()

```
BinarySearchTree::BinarySearchTree ( ) [inline]
```

This is a constructor

BinarySearchTree Functions- insert, traverse, height

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

• DSA.cpp

### 3.2 BSTNode Class Reference

Brief Description of BSTNode. Brief Description continued.

#### **Public Member Functions**

• BSTNode (II val)

#### **Public Attributes**

- || info
- || level
- BSTNode \* left
- BSTNode \* right

#### 3.2.1 Detailed Description

Brief Description of BSTNode. Brief Description continued.

Detailed description starts here.

#### 3.2.2 Constructor & Destructor Documentation

#### 3.2.2.1 BSTNode()

This is a constructor

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

DSA.cpp

#### 3.3 DoublyLinkedList Class Reference

Brief Description of DoublyLinkedList. Brief Description continued.

#### **Public Member Functions**

- DoublyLinkedList ()
- · void insert (II data)
- void printer (string sep=", ")
- void reverse ()

#### **Public Attributes**

- DoublyLinkedListNode \* head
- DoublyLinkedListNode \* tail

#### 3.3.1 Detailed Description

Brief Description of DoublyLinkedList. Brief Description continued.

Detailed description starts here.

#### 3.3.2 Constructor & Destructor Documentation

#### 3.3.2.1 DoublyLinkedList()

```
DoublyLinkedList::DoublyLinkedList ( ) [inline]
```

This is a constructor

DoublyLinkedListNode functions- insert, printer, reverse

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

DSA.cpp

#### 3.4 DoublyLinkedListNode Class Reference

Brief Description of DoublyLinkedListNode. Brief Description continued.

#### **Public Member Functions**

- DoublyLinkedListNode ()
- DoublyLinkedListNode (II val)

#### **Public Attributes**

- ∥ data
- DoublyLinkedListNode \* next
- DoublyLinkedListNode \* prev

#### 3.4.1 Detailed Description

Brief Description of DoublyLinkedListNode. Brief Description continued.

Detailed description starts here.

#### 3.4.2 Constructor & Destructor Documentation

#### 3.4.2.1 DoublyLinkedListNode() [1/2]

```
DoublyLinkedListNode::DoublyLinkedListNode ( ) [inline]
```

This is a constructor

#### 3.4.2.2 DoublyLinkedListNode() [2/2]

This is a constructor

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

• DSA.cpp

### 3.5 Heap Class Reference

Brief Description of Heap. Used to do operations on Heap Data Structure.

#### **Public Member Functions**

- int left (int parent)
- int right (int parent)
- int parent (int child)
- void Heapify (int index)
- void insert (int element)
- void deletemin ()
- int min ()

#### 3.5.1 Detailed Description

Brief Description of Heap. Used to do operations on Heap Data Structure.

It has various functions like left, right, parent, Heapify, insert, deletemin, min

#### 3.5.2 Member Function Documentation

#### 3.5.2.1 deletemin()

```
void Heap::deletemin ( )
```

Brief Description of deletemin function.

It is used to delete the minimum value from Heap

#### 3.5.2.2 Heapify()

```
void Heap::Heapify (
          int index )
```

Brief Description of Heapify function.

It is used to Heapify the elements from Heap

#### 3.5.2.3 insert()

Brief Description of Insert function.

It is used to insert a element in Heap.

#### 3.5.2.4 left()

Brief Description of left function.

It is used to find the left element of child from Heap

#### 3.5.2.5 min()

```
int Heap::min ( )
```

Brief Description of min function.

It is used to return the minimum value from Heap

#### 3.5.2.6 parent()

Brief Description of parent function.

It is used to find the parent element from Heap

#### 3.5.2.7 right()

Brief Description of right function.

It is used to find the right element of child from Heap

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

• DSA.cpp

### 3.6 SinglyLinkedList Class Reference

Brief Description about SinglyLinkedList.

#### **Public Member Functions**

• SinglyLinkedList ()

This is about Singly Linked List.

- void insert (II data)
- SinglyLinkedListNode \* find (II data)
- bool deleteVal (II data)
- void printer (string sep=", ")
- void reverse ()

#### **Public Attributes**

- SinglyLinkedListNode \* head
- SinglyLinkedListNode \* tail

#### 3.6.1 Detailed Description

Brief Description about SinglyLinkedList.

Brief Description continued.

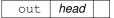
#### 3.6.2 Constructor & Destructor Documentation

#### 3.6.2.1 SinglyLinkedList()

```
SinglyLinkedList::SinglyLinkedList ( ) [inline]
```

This is about Singly Linked List.

#### **Parameters**



This is constructor w/o parameter

head - One of the variables used

tail - Another variable used

data - Another variable used

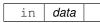
ptr - Another variable used

Functions- insert,find, deleteVal, printer, reverse

#### 3.6.3 Member Function Documentation

#### 3.6.3.1 deleteVal()

#### **Parameters**



This is member function deleteVal

#### 3.6.3.2 find()

#### **Parameters**

in	data	
out	prev	

This is member function

#### 3.6.3.3 insert()

#### **Parameters**

This is member function insert

#### 3.6.3.4 printer()

This is member function printer

#### 3.6.3.5 reverse()

```
void SinglyLinkedList::reverse ( ) [inline]
```

This is member function reverse

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

• DSA.cpp

## 3.7 SinglyLinkedListNode Class Reference

Brief Description of SinglyLinkedListNode. Brief Description continued.

#### **Public Member Functions**

- SinglyLinkedListNode ()
- SinglyLinkedListNode (II val)

#### **Public Attributes**

∥ data

This is about Singly Linked List Node.

SinglyLinkedListNode \* next

#### 3.7.1 Detailed Description

Brief Description of SinglyLinkedListNode. Brief Description continued.

Detailed description starts here.

#### 3.7.2 Constructor & Destructor Documentation

#### 3.7.2.1 SinglyLinkedListNode() [1/2]

```
SinglyLinkedListNode::SinglyLinkedListNode ( ) [inline]
```

#### **Parameters**

out	data	

This is constructor w/o parameter

#### 3.7.2.2 SinglyLinkedListNode() [2/2]

#### **Parameters**

in	val	
out	data	

This is destructor with parameter val

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

DSA.cpp

#### 3.8 Trie Class Reference

Brief Description of Trie. Brief Description continued.

#### **Public Member Functions**

- Trie ()
- bool **find** (Trie \*T, char c)
- void insert (string s)
- bool checkPrefix (string s)
- Il countPrefix (string s)

#### **Public Attributes**

- Il count
- map< char, Trie \* > nodes

#### 3.8.1 Detailed Description

Brief Description of Trie. Brief Description continued.

Detailed description starts here.

#### 3.8.2 Constructor & Destructor Documentation

#### 3.8.2.1 Trie()

```
Trie::Trie ( ) [inline]
```

This is a constructor

Trie Functions- find, insert, checkPrefix, countPrefix

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

• DSA.cpp

## **File Documentation**

### 4.1 DSA.cpp File Reference

It is about various Linked List Nodes.

#include <bits/stdc++.h>

#### Classes

· class SinglyLinkedListNode

Brief Description of SinglyLinkedListNode. Brief Description continued.

class SinglyLinkedList

Brief Description about SinglyLinkedList.

class DoublyLinkedListNode

Brief Description of DoublyLinkedListNode. Brief Description continued.

class DoublyLinkedList

Brief Description of DoublyLinkedList. Brief Description continued.

class BSTNode

Brief Description of BSTNode. Brief Description continued.

class BinarySearchTree

Brief Description of BinarySearchTree. Brief Description continued.

· class Trie

Brief Description of Trie. Brief Description continued.

class Heap

Brief Description of Heap. Used to do operations on Heap Data Structure.

#### **Macros**

- #define II long long int
- #define vi vector<int>
- #define vII vector<II>

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#### **Functions**

- ostream & operator << (ostream &out, const SinglyLinkedListNode &node)
- SinglyLinkedList merge (SinglyLinkedList list1, SinglyLinkedList list2)
- ostream & operator<< (ostream &out, const DoublyLinkedListNode &node)</li>
- ostream & operator<< (ostream &out, const BSTNode &node)
- int main ()

#### 4.1.1 Detailed Description

It is about various Linked List Nodes.

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Yash Kulkarni

Date

Sep 21 2022

#### 4.1.2 Function Documentation

#### 4.1.2.1 merge()

```
SinglyLinkedList merge (
SinglyLinkedList list1,
SinglyLinkedList list2)
```

#### **Parameters**

in	list1	
in	list2	
out	merged	

This is function merge

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