My Project

Generated by Doxygen 1.8.17

Chapter 1

ParaCL

Programming C-like language for iLab 2nd course. **YOU SHOULD USE MAKEFILE**

by **Derzhavin Andrey** && **Khaidari Farid** && **Shurygin Anton**.

Chapter 2

Namespace Index

2.1 Namespace List

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

Chapter 3

Hierarchical Index

3.1 Class Hierarchy

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

Chapter 4

Class Index

4.1 Class List

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

Chapter 5

Namespace Documentation

5.1 yy Namespace Reference

#include "numgrammar.tab.hh" - auto generated file from bison

Classes

- class Driver

5.1.1 Detailed Description

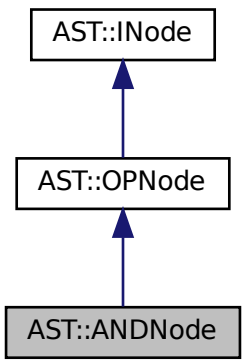
#include "numgrammar.tab.hh" - auto generated file from bison

Chapter 6

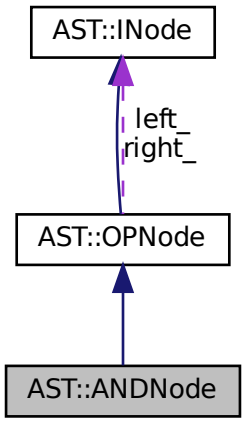
Class Documentation

6.1 AST::ANDNode Class Reference

Inheritance diagram for AST::ANDNode:



Collaboration diagram for AST::ANDNode:



Public Member Functions

- **ANDNode** (INode *left, INode *right)
- **ANDNode** (const ANDNode &)=delete
- ANDNode & **operator=** (const ANDNode &)=delete
- int calc () const override

  Logical AND.

Additional Inherited Members

6.1.1 Member Function Documentation

6.1.1.1 calc()

```
int AST::ANDNode::calc ( ) const  [override], [virtual]
```

Logical AND.

Returns

1 or 0

Implements AST::INode.

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

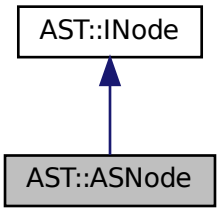
- AST/OPNode.hh
- AST/OPNode.cc

6.2 AST::ASNode Class Reference

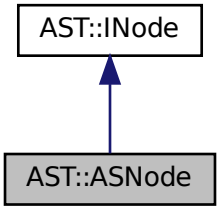
Assignment operator's node.

`#include <OPNode.hh>`

Inheritance diagram for AST::ASNode:



Collaboration diagram for AST::ASNode:



Public Member Functions

- **ASNode** (VNode ∗dst, INode ∗expr)
- **ASNode** (const ASNode &)=delete
- ASNode & **operator=** (const ASNode &)=delete
- int calc () const override

  Interpret the node function.
- ∼ASNode ()

  Assignment class destructor.

6.2.1 Detailed Description

Assignment operator's node.

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

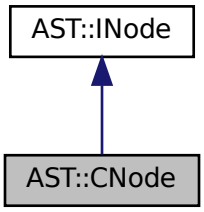
- AST/OPNode.hh
- AST/OPNode.cc

6.3 AST::CNode Class Reference

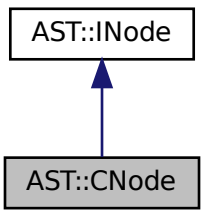
Constant node class.

`#include <Node.hh>`

Inheritance diagram for AST::CNode:



Collaboration diagram for AST::CNode:



Public Member Functions

- CNode (int val)
- **CNode** (const CNode &)=delete
- CNode & **operator=** (const CNode &)=delete
- int calc () const override

6.3.1 Detailed Description

Constant node class.

6.3.2 Constructor & Destructor Documentation

6.3.2.1 CNode()

```
AST::CNode::CNode (
            int val )
```

Constant node ctor

Parameters

val	[in] - value of a node

6.3.3 Member Function Documentation

6.3.3.1 calc()

```
int AST::CNode::calc ( ) const  [override], [virtual]
```

Calculate the value of node

Returns

value of a node

Implements AST::INode.

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

- AST/Node.hh
- AST/Node.cc

6.4 yy::Driver Class Reference

Public Member Functions

- **Driver** (const char ∗name_of_file)
- **Driver** (const Driver &drvr)=delete
- Driver & **operator=** (const Driver &)=delete
- bool **parse** ()
- parser::token_type yylex (parser::semantic_type ∗yylval, parser::location_type ∗yylloc)

6.4.1 Member Function Documentation

6.4.1.1 yylex()

```
yy::parser::token_type yy::Driver::yylex (
            parser::semantic_type * yylval,
            parser::location_type * yylloc )
```

The lexical analyzer function, yylex, recognizes tokens from the input stream and returns them to the parser.

Parameters

yylval	
yylloc	

Returns

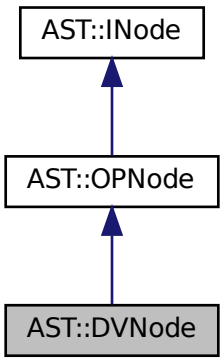
token type

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

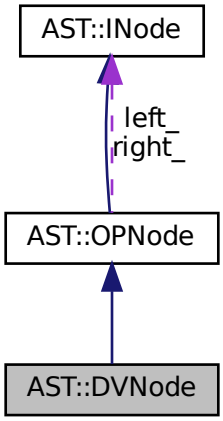
- driver/driver.hh
- driver/driver.cc

6.5 AST::DVNode Class Reference

Inheritance diagram for AST::DVNode:



Collaboration diagram for AST::DVNode:



Public Member Functions

- **DVNode** (INode *left, INode *right)
- **DVNode** (const DVNode &)=delete
- DVNode & **operator=** (const DVNode &)=delete
- int calc () const override

Additional Inherited Members

6.5.1 Member Function Documentation

6.5.1.1 calc()

```
int AST::DVNode::calc ( ) const  [override], [virtual]
```

Calculate value of node function

Returns

calculation result

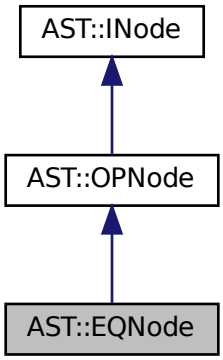
Implements AST::INode.

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

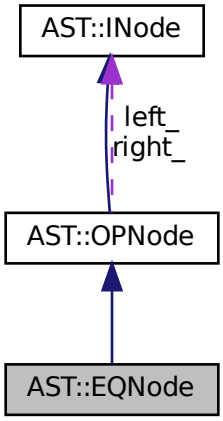
- AST/OPNode.hh
- AST/OPNode.cc

6.6 AST::EQNode Class Reference

Inheritance diagram for AST::EQNode:



Collaboration diagram for AST::EQNode:



Public Member Functions

- **EQNode** (INode ∗left, INode ∗right)
- **EQNode** (const EQNode &)=delete
- EQNode & **operator=** (const EQNode &)=delete
- int calc () const override

  Calculate for equality.

Additional Inherited Members

6.6.1 Member Function Documentation

6.6.1.1 calc()

```
int AST::EQNode::calc ( ) const  [override], [virtual]
```

Calculate for equality.

Returns

1 if lhs is equal to rhs else 0

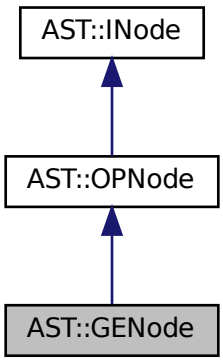
Implements AST::INode.

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

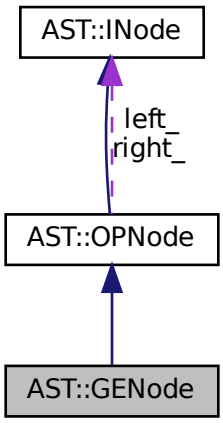
- AST/OPNode.hh
- AST/OPNode.cc

6.7 AST::GENode Class Reference

Inheritance diagram for AST::GENode:



Collaboration diagram for AST::GENode:



Public Member Functions

- **GENode** (INode ∗left, INode ∗right)
- **GENode** (const GENode &)=delete
- GENode & **operator=** (const GENode &)=delete
- int calc () const override

  Checking for greatness or equality.

Additional Inherited Members

6.7.1 Member Function Documentation

6.7.1.1 calc()

```
int AST::GENode::calc ( ) const  [override], [virtual]
```

Checking for greatness or equality.

Returns

1 if lhs is greater or equal then rhs

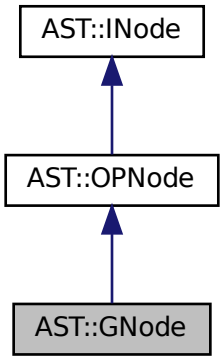
Implements AST::INode.

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

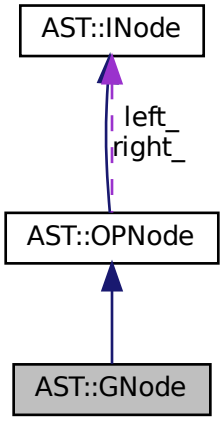
- AST/OPNode.hh
- AST/OPNode.cc

6.8 AST::GNode Class Reference

Inheritance diagram for AST::GNode:



Collaboration diagram for AST::GNode:



Public Member Functions

- **GNode** (INode ∗left, INode ∗right)
- **GNode** (const GNode &)=delete
- GNode & **operator=** (const GNode &)=delete
- int calc () const override

  Checking for greatness.

Additional Inherited Members

6.8.1 Member Function Documentation

6.8.1.1 calc()

```
int AST::GNode::calc ( ) const  [override], [virtual]
```

Checking for greatness.

Returns

1 if lhs is greater then rhs

Implements AST::INode.

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

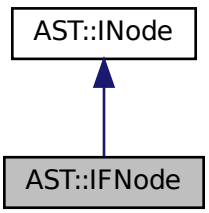
- AST/OPNode.hh
- AST/OPNode.cc

6.9 AST::IFNode Class Reference

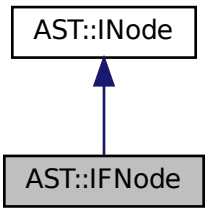
If node class.

```
#include <Node.hh>
```

Inheritance diagram for AST::IFNode:



Collaboration diagram for AST::IFNode:



Public Member Functions

- **IFNode** (INode ∗cond, IScope ∗if_sc, IScope ∗el_sc=nullptr)
- **IFNode** (const IFNode &)=delete
- IFNode & **operator=** (const IFNode &)=delete
- int calc () const override
- ∼IFNode ()

6.9.1 Detailed Description

If node class.

6.9.2 Constructor & Destructor Documentation

6.9.2.1 ∼IFNode()

```
AST::IFNode::∼IFNode ( )
```

If node dtor function

6.9.3 Member Function Documentation

6.9.3.1 calc()

```
int AST::IFNode::calc ( ) const  [override], [virtual]
```

Interpret If node function

Returns

calculated result

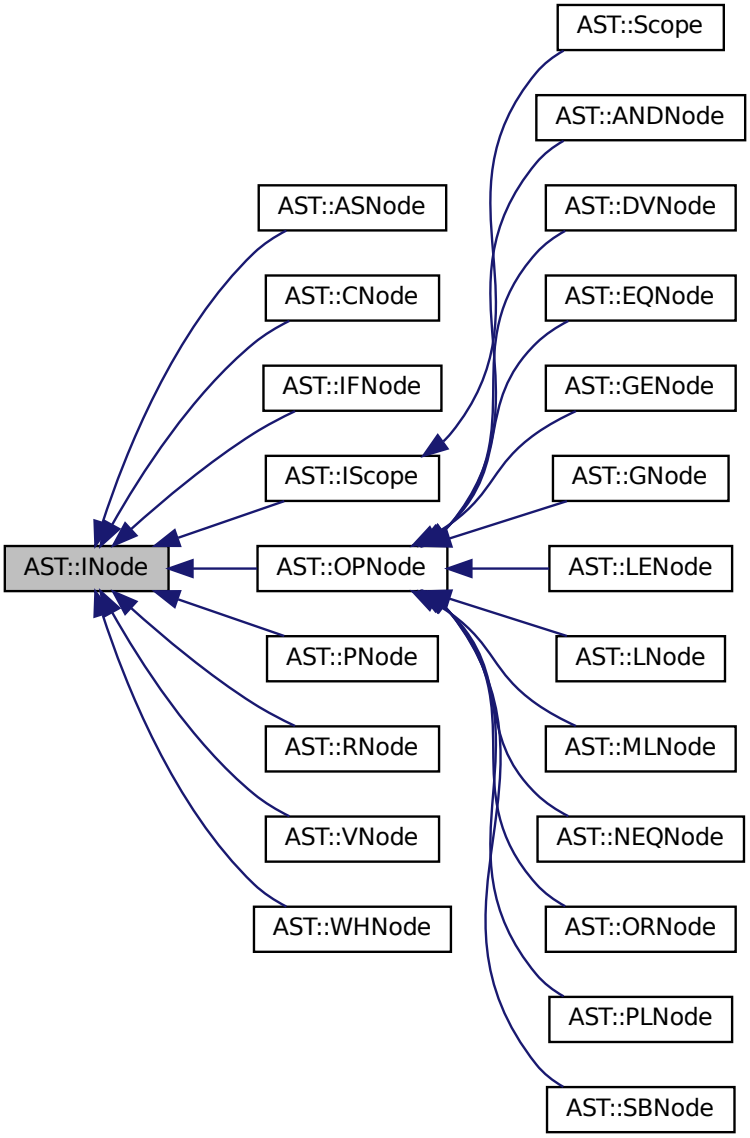
Implements AST::INode.

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

- AST/Node.hh
- AST/Node.cc

6.10 AST::INode Struct Reference

Inheritance diagram for AST::INode:



Public Member Functions

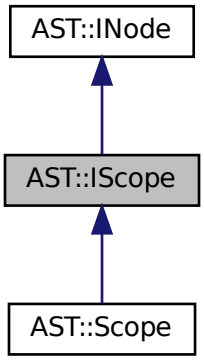
- virtual int **calc** () const =0

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

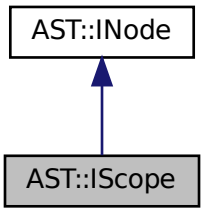
- AST/INode.hh

6.11 AST::IScope Struct Reference

Inheritance diagram for AST::IScope:



Collaboration diagram for AST::IScope:



Public Member Functions

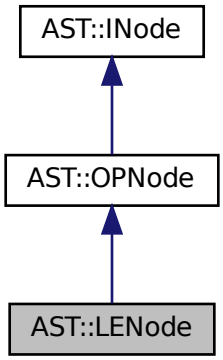
- virtual void **push** (INode ∗node)=0
- virtual IScope ∗ **reset_scope** () const =0
- virtual std::pair< var_table::iterator, bool > **check_var** (const std::string &var_name)=0
- virtual std::pair< var_table::iterator, bool > **loc_check** (const std::string &var_name)=0
- virtual var_table::iterator **check_n_insert** (const std::string &var_name)=0

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

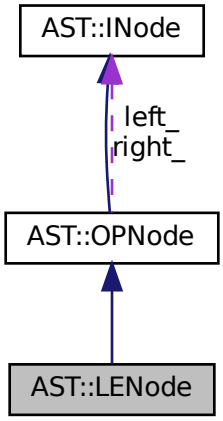
- AST/INode.hh

6.12 AST::LENode Class Reference

Inheritance diagram for AST::LENode:



Collaboration diagram for AST::LENode:



Public Member Functions

- **LENode** (INode ∗left, INode ∗right)
- **LENode** (const LENode &)=delete
- LENode & **operator=** (const LENode &)=delete
- int calc () const override

  Checking for lessness or equality.

Additional Inherited Members

6.12.1 Member Function Documentation

6.12.1.1 calc()

```
int AST::LENode::calc ( ) const  [override], [virtual]
```

Checking for lessness or equality.

Returns

1 if lhs is less or equal then rhs

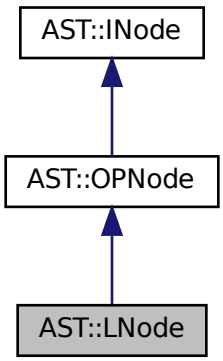
Implements AST::INode.

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

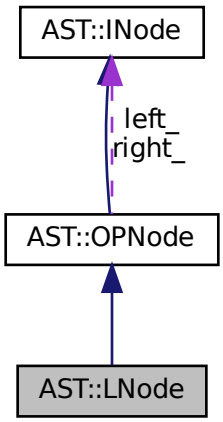
- AST/OPNode.hh
- AST/OPNode.cc

6.13 AST::LNode Class Reference

Inheritance diagram for AST::LNode:



Collaboration diagram for AST::LNode:



Public Member Functions

- **LNode** (INode *left, INode *right)
- **LNode** (const LNode &)=delete
- LNode & **operator=** (const LNode &)=delete
- int calc () const override

  Checking for lessness.

Additional Inherited Members

6.13.1 Member Function Documentation

6.13.1.1 calc()

```
int AST::LNode::calc ( ) const  [override], [virtual]
```

Checking for lessness.

Returns

1 if lhs is less then rhs

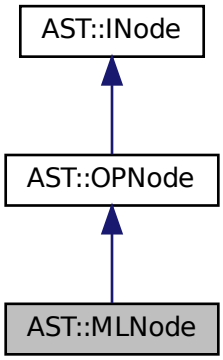
Implements AST::INode.

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

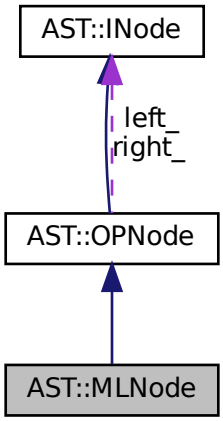
- AST/OPNode.hh
- AST/OPNode.cc

6.14 AST::MLNode Class Reference

Inheritance diagram for AST::MLNode:



Collaboration diagram for AST::MLNode:



Public Member Functions

- **MLNode** (INode ∗left, INode ∗right)
- **MLNode** (const MLNode &)=delete
- MLNode & **operator=** (const MLNode &)=delete
- int calc () const override

Additional Inherited Members

6.14.1 Member Function Documentation

6.14.1.1 calc()

```
int AST::MLNode::calc ( ) const  [override], [virtual]
```

Calculate value of node function

Returns

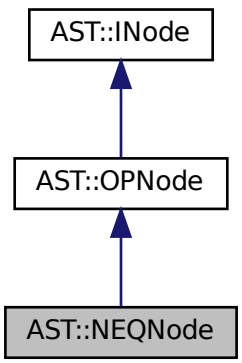
Implements AST::INode.

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

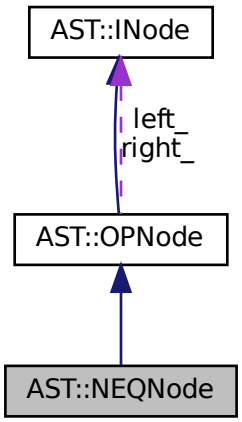
- AST/OPNode.hh
- AST/OPNode.cc

6.15 AST::NEQNode Class Reference

Inheritance diagram for AST::NEQNode:



Collaboration diagram for AST::NEQNode:



Public Member Functions

- **NEQNode** (INode ∗left, INode ∗right)
- **NEQNode** (const NEQNode &)=delete
- NEQNode & **operator=** (const NEQNode &)=delete
- int calc () const override

  Calculate for not equality.

Additional Inherited Members

6.15.1 Member Function Documentation

6.15.1.1 calc()

```
int AST::NEQNode::calc ( ) const  [override], [virtual]
```

Calculate for not equality.

Returns

1 if lhs is not equal to rhs else 0

Implements AST::INode.

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

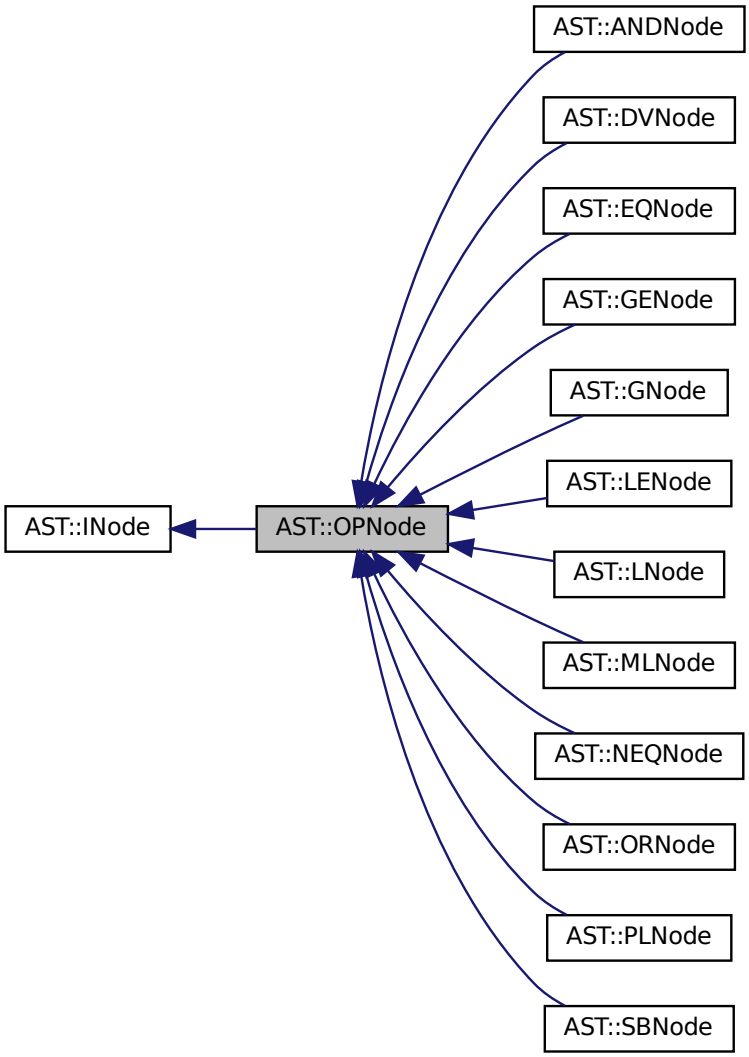
- AST/OPNode.hh
- AST/OPNode.cc

6.16 AST::OPNode Class Reference

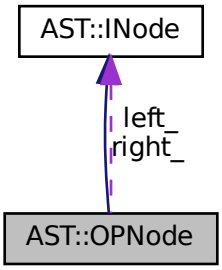
Operator node class.

`#include <Node.hh>`

Inheritance diagram for AST::OPNode:



Collaboration diagram for AST::OPNode:



Public Member Functions

- OPNode (INode ∗left, INode ∗right)
- ∼OPNode ()

Protected Attributes

- INode ∗ **left_** {}
- INode ∗ **right_** {}

6.16.1 Detailed Description

Operator node class.

6.16.2 Constructor & Destructor Documentation

6.16.2.1 OPNode()

```
AST::OPNode::OPNode (
            INode * left,
            INode * right )
```

Operator's node constructor

Parameters

left	[in] - left node of operator
right	[in] - right node of operator

6.16.2.2 ∼OPNode()

```
AST::OPNode::∼OPNode ( )
```

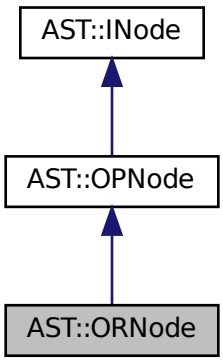
OPNode class destructor. Deletes left ans right nodes

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

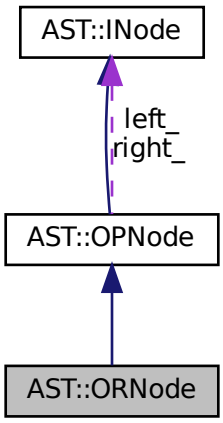
- AST/Node.hh
- AST/Node.cc

6.17 AST::ORNode Class Reference

Inheritance diagram for AST::ORNode:



Collaboration diagram for AST::ORNode:



Public Member Functions

- **ORNode** (INode ∗left, INode ∗right)
- **ORNode** (const ORNode &)=delete
- ORNode & **operator=** (const ORNode &)=delete
- int calc () const override

  Logical OR.

Additional Inherited Members

6.17.1 Member Function Documentation

6.17.1.1 calc()

```
int AST::ORNode::calc ( ) const  [override], [virtual]
```

Logical OR.

Returns

1 or 0

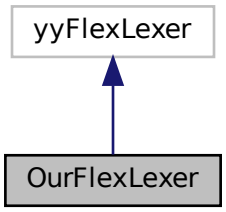
Implements AST::INode.

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

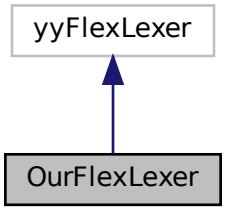
- AST/OPNode.hh
- AST/OPNode.cc

6.18 OurFlexLexer Class Reference

Inheritance diagram for OurFlexLexer:



Collaboration diagram for OurFlexLexer:



Public Member Functions

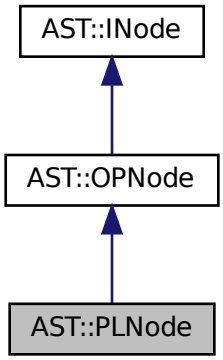
- **OurFlexLexer** (const OurFlexLexer &flx)=delete
- OurFlexLexer & **operator=** (const OurFlexLexer &)=delete
- yy::location **get_cur_location** ()
- std::string **get_cur_str_** ()
- void **upd_cur_loc** ()
- int **yylex** () override

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

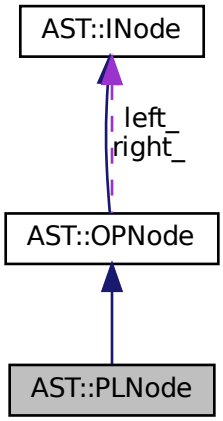
- parser/parser.hh
- parser/parser.cc

6.19 AST::PLNode Class Reference

Inheritance diagram for AST::PLNode:



Collaboration diagram for AST::PLNode:



Public Member Functions

- **PLNode** (INode ∗left, INode ∗right)
- **PLNode** (const PLNode &)=delete
- PLNode & **operator=** (const PLNode &)=delete
- int calc () const override

Additional Inherited Members

6.19.1 Member Function Documentation

6.19.1.1 calc()

```
int AST::PLNode::calc ( ) const  [override], [virtual]
```

Calculate value of node function

Returns

Implements AST::INode.

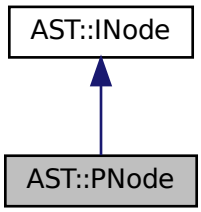
The documentation for this class was generated from the following files:

- AST/OPNode.hh
- AST/OPNode.cc

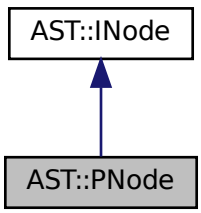
6.20 AST::PNode Class Reference

```
#include <Node.hh>
```

Inheritance diagram for AST::PNode:



Collaboration diagram for AST::PNode:



Public Member Functions

- **PNode** (INode ∗expr)
- **PNode** (const PNode &)=delete
- PNode & **operator=** (const PNode &)=delete
- int calc () const override

6.20.1 Detailed Description

Print node class function

6.20.2 Member Function Documentation

6.20.2.1 calc()

```
int AST::PNode::calc ( ) const  [override], [virtual]
```

Interpret print node function

Implements AST::INode.

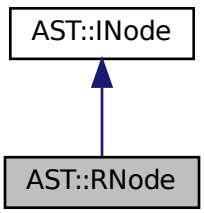
The documentation for this class was generated from the following files:

- AST/Node.hh
- AST/Node.cc

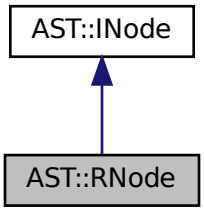
6.21 AST::RNode Class Reference

```
#include <Node.hh>
```

Inheritance diagram for AST::RNode:



Collaboration diagram for AST::RNode:



Public Member Functions

- **RNode** (const RNode &)=delete
- RNode & **operator=** (const RNode &)=delete
- int calc () const override

  Interpret read node function.

6.21.1 Detailed Description

Scanf node class

6.21.2 Member Function Documentation

6.21.2.1 calc()

```
int AST::RNode::calc ( ) const  [override], [virtual]
```

Interpret read node function.

Returns

read value

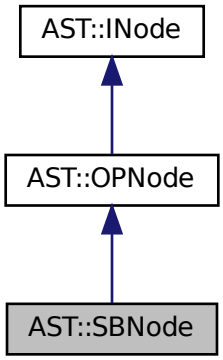
Implements AST::INode.

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

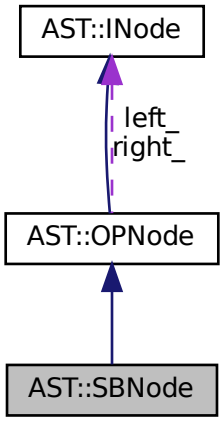
- AST/Node.hh
- AST/Node.cc

6.22 AST::SBNode Class Reference

Inheritance diagram for AST::SBNode:



Collaboration diagram for AST::SBNode:



Public Member Functions

- **SBNode** (INode ∗left, INode ∗right)
- **SBNode** (const SBNode &)=delete
- SBNode & **operator=** (const SBNode &)=delete
- int calc () const override

Additional Inherited Members

6.22.1 Member Function Documentation

6.22.1.1 calc()

```
int AST::SBNode::calc ( ) const  [override], [virtual]
```

Calculate value of node function

Returns

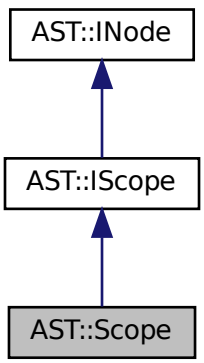
Implements AST::INode.

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

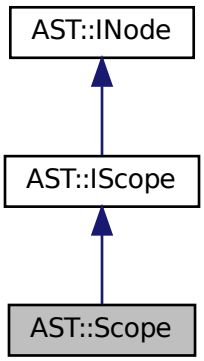
- AST/OPNode.hh
- AST/OPNode.cc

6.23 AST::Scope Class Reference

Inheritance diagram for AST::Scope:



Collaboration diagram for AST::Scope:



Public Member Functions

- **Scope** (IScope *parent=nullptr)
- **Scope** (const Scope &sc)=delete
- Scope & **operator=** (const Scope &sc)=delete
- IScope * **reset_scope** () const override
- int calc () const override

  Interpret the scope function (claculate)
- void push (INode *node) override

  Add node to scope function.
- it_bool check_var (const std::string &var_name) override

  Check var in all available scopes function.
- it_bool loc_check (const std::string &var_name) override

  Check variable in current scope function.
- var_table::iterator check_n_insert (const std::string &var_name) override
- ~Scope () override

6.23.1 Constructor & Destructor Documentation

6.23.1.1 ~Scope()

```
AST::Scope::~Scope ( )  [override]
```

Scope class destructor

6.23.2 Member Function Documentation

6.23.2.1 calc()

```
int AST::Scope::calc ( ) const  [override], [virtual]
```

Interpret the scope function (claculate)

Returns

int

Implements AST::INode.

6.23.2.2 check_n_insert()

```
var_table::iterator AST::Scope::check_n_insert (
            const std::string & var_name )  [override], [virtual]
```

Parameters

var_name	

Returns

Implements AST::IScope.

6.23.2.3 check_var()

```
std::pair< var_table::iterator, bool > AST::Scope::check_var (
            const std::string & var_name )  [override], [virtual]
```

Check var in all available scopes function.

Parameters

var_name	[in] name of a var to get access to

Returns

pair of iterator to var table and bool, which: TRUE - iterator is valid, variable found, FALSE - iterator is not valid (end()), variable was not found

Implements AST::IScope.

6.23.2.4 loc_check()

```
Scope::it_bool AST::Scope::loc_check (
            const std::string & var_name )  [override], [virtual]
```

Check variable in current scope function.

Parameters

var_name	[in] name of a var to find

Returns

pair of iterator to var table and bool, which: TRUE - iterator is valid, variable found, FALSE - iterator is not valid (end()), variable was not found

Implements AST::IScope.

6.23.2.5 push()

```
void AST::Scope::push (
            INode * node )  [override], [virtual]
```

Add node to scope function.

Parameters

node	[in] node to add

Returns

none

Implements AST::IScope.

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

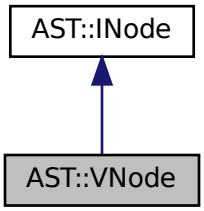
- AST/Node.hh
- AST/Node.cc

6.24 AST::VNode Class Reference

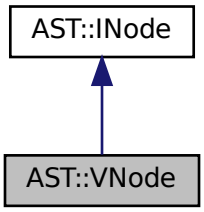
Variable node class.

```
#include <Node.hh>
```

Inheritance diagram for AST::VNode:



Collaboration diagram for AST::VNode:



Public Member Functions

- VNode (var_table::iterator loc)
- **VNode** (const VNode &)=delete
- VNode & **operator=** (const VNode &)=delete
- const std::string & get_name () const
- var_table::iterator get_loc () const
- int calc () const override
- void set_val (int val)

6.24.1 Detailed Description

Variable node class.

6.24.2 Constructor & Destructor Documentation

6.24.2.1 VNode()

```
AST::VNode::VNode (
            var_table::iterator loc )  [explicit]
```

Varibale node ctor

Parameters

name	[in] name of a variable
loc	

6.24.3 Member Function Documentation

6.24.3.1 calc()

```
int AST::VNode::calc ( ) const  [override], [virtual]
```

Calculate value of a variable function

Returns

Implements AST::INode.

6.24.3.2 get_loc()

```
var_table::iterator AST::VNode::get_loc ( ) const
```

Get variable location in table function

Returns

6.24.3.3 get_name()

```
const std::string & AST::VNode::get_name ( ) const
```

Get variable name function

Returns

6.24.3.4 set_val()

```
void AST::VNode::set_val (
            int val )
```

Set value of variable function

Parameters

val	

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

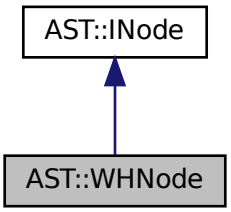
- AST/Node.hh
- AST/Node.cc

6.25 AST::WHNode Class Reference

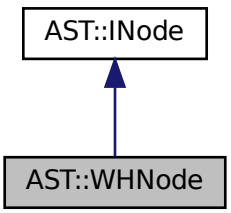
While node class.

`#include <Node.hh>`

Inheritance diagram for AST::WHNode:



Collaboration diagram for AST::WHNode:



Public Member Functions

- **WHNode** (INode *cond, IScope *scope)
- **WHNode** (const WHNode &)=delete
- WHNode & **operator=** (const WHNode &)=delete
- int calc () const override

  Calculate while node function.
- ~WHNode ()

6.25.1 Detailed Description

While node class.

6.25.2 Constructor & Destructor Documentation

6.25.2.1 ~WHNode()

```
AST::WHNode::~WHNode ( )
```

While node class destructor

6.25.3 Member Function Documentation

6.25.3.1 calc()

```
int AST::WHNode::calc ( ) const  [override], [virtual]
```

Calculate while node function.

Returns

int

Implements AST::INode.

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

- AST/Node.hh
- AST/Node.cc

Index